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THE
GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL. XIV.—THIRD SERIES.

JULY TO DECEMBER, 1893.

LONDON:
41, WELLINGTON STREET, COVENT GARDEN, W.C.
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2740.

No. 340.—VOL. XIV. { THIRD SERIES. }

SATURDAY, JULY 1, 1893.

{ Regt. as a Newspaper. } PRICE 3d.
POST FREE, 3½d.

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MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, July 7, at half-past 12 o'clock, the largest and most valuable lot of IMPORTED and ESTABLISHED ORCHIDS ever offered in one day's Sale.

DENDROBIUM PHALÆNOPSIS

SCHRODERIANUM,

THE KING OF THE DENDROBES.

THE REMAINING PORTION OF OUR RECENT SPLENDID IMPORTATION.

This is, without doubt, the very best time to import this gorgeous Dendrobe. The Plants offered are in grand order, and will produce masses of blooms of every shade of pink, purple, crimson, rose, and white; as many as 20 to 30 flowers on a single inflorescence. Each flower is as big as a Phalænopsis amabilis.

THE NEW AND SENSATIONAL

EULOPHIELLA ELISABETHÆ.

In superb order. Plants breaking freely. We hold the entire stock, and guarantee every plant.

Mr. R. A. ROLFE, of the Royal Gardens, Kew, the author and founder of this new genus, has examined our plants, and certified them true.

Among the other new and splendid introductions offered, are:—The truly marvellous—

HABENARIA GIGANTEA VAR. **SUMATRANA**
(Syn. *H. SUSANÆ* VAR. *SUMATRANA*).

A New and Handsome **ONCIDIUM** from **VENEZUELA** (Provisionally named **SANDERIANUM**), Bearing hundreds of rosy-red flowers, Pescatorei-shaped, in veritable bouquets.

A distinct-looking and probably New **CATTLEYA** from beyond **BOLIVAR**, section of *C. Mossii*.

The new and striking **CYPRIPEDIUM NICHOLSONIANUM**, from the Island of Palawan; spike many-flowered; section of *Rothschididnum* and *Sanderianum*.

An **ODONTOGLOSSUM** sent home as **WATTIANUM**, but may be new; a **PHAIUS** from Madagascar, with Lælia-like blooms; a **BULBOPHYLLUM** from Madagascar, discovered by M. Hamelin; also **NEW ANGREJUMS**, and other Madagascar ORCHIDS.

Also a splendid Plant of the exquisite lemon-yellow and white

CYPRIPEDIUM INSIGNE SANDERÆ, For beauty unsurpassed and unapproachable.

CATTLEYA MENDELII BLUNTII, The finest white Mendelii in existence.

CATTLEYA LABIATA ALBA.

CATTLEYA SPECIOSISSIMA ALBA.

CATTLEYA AGLANDIÆ ALBA, &c.

Every plant is guaranteed true to name and description.

By order, **F. SANDER AND CO.**, St. Albans.

On view morning of Sale, and catalogues had.

Tuesday Next.

FIFTY ESTABLISHED ONLY.

RARE AND FIRST-CLASS ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, July 4, at half-past 12 o'clock precisely, the above 50 rare and first-class ORCHIDS. Amongst them will be found:—

TRICHOPILIA SUAVIS ALBA, with 7 bulbs, 4 leaves, 2 leads.

DENDROBIUM SCHRODERIANUM (*DENSIFLORUM ALBUM*).

MASDEVALLIA SCHRODERÆ, F.C.C.R.H.S. with 9 leaves.

CYPRIPEDIUM ARGUS MOENSEI.

CATTLEYA INTERMEDIA ALBA, very fine, healthy plant.

CATTLEYA WALLISII, the white form of the El-Dorado Cattleya.

VANDA (*RENANTHERA*) **STOREI**, a fine specimen.

SOBRALIA BEYERIANA (New), only two plants of this are in culture; the nearest ally is *S. Lucasiana*.

ANGREJUM DUBUYSSONI, fine plant, with two growths.

VANDA TRICOLOR CINNAMOMEA, with 8 pairs of leaves.

PLEUROTHALLIS ROZELLII, the finest of the genus.

MASDEVALLIA DAYANA, the Window-bearing Orchid; fine plants, with 12 leaves.

LÆLIA ANCEPS STELLA.

" " **DAWSONI**.

" " **SANDERIANA**.

" " **PROTHEROEANA**, &c.

On view morning of Sale, and Catalogues had.

Tuesday, July 11.

An Importation of 2000 **ODONTOGLOSSUM ALEXANDRÆ**, of the finest Carderian type. Every plant in good health, just commencing their growths, a number already rooting freely. They will be sold in boxes to prevent injury to the growths and roots.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, July 11, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Tuesday Next, July 4.

By order of Messrs. Walter Kemsley & Co.

500 **PHALÆNOPSIS GRANDIFLORA**.

For Unreserved Sale.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on TUESDAY NEXT, July 4.

On view morning of Sale, and Catalogues had.

Tuesday Next.
IMPORTED ORCHIDS.

In splendid condition.

***CYMBIDIUM DEVONIANUM**.
CYMBIDIUM EBURNEUM.
CYMBIDIUM MASTERSII.
VANDA CERULEA.
NEW PHAIUS.
VANDA CATHCARTII.
VANDA SPECIES.
PLEIONE, NEW.
DENDROBIUM NOBILE.

* This has not been imported since its first discovery by Mr. Gibson in 1837.
† From a district where the thermometer falls to 28°.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, July 4, at half-past 12 o'clock, the above-named grand IMPORTATIONS of various Species, collected and brought home by the personal care of Mr. Massmans.

On view morning of Sale, and Catalogues had.

Tuesday Next.

A Consignment just to hand consisting of
100 **SACCOLABIUM GUTTATUM**.
100 **DENDROBIUM WARDEANUM**.
101 **NOBILE**.
100 **VANDA ROXBURGHII**.

In fine condition.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Rooms, on TUESDAY NEXT, July 4, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA HARDYANA VAR. **LAVERSIANA**, with three flowers, named by Mr. O'Brien, and described in *Gardeners' Chronicle*.

MESSRS. PROTHEROE AND MORRIS will include this magnificent Plant in their ORCHID SALE on FRIDAY NEXT, July 7.

On view morning of Sale.

Friday, July 14.

Important Consignment of **PALM SEEDS**.
32,000 **KENTIA BELMOREANA**.
141,500 " **FOSTERIANA**.
8,000 " **CANTERBURYANA**.
273,000 **ARAUCARIA EXCELSA**.
270 Clumps of **TODEA MOOREANA**.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, July 14, at half-past 12 o'clock.

Thursday, July 13.

Two cases of **CYPRIPEDIUM SPECIES**, ORCHIDS IN FLOWER, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, July 13, at half-past 12 o'clock precisely, 2 cases of **CYPRIPEDIUM SPECIES**, in splendid condition, received direct. Without Reserve. ORCHIDS IN FLOWER AND BUD, including several fine varieties and specimens. Also a Collection of ESTABLISHED ORCHIDS, in fine health, &c. 20,000 fresh SEEDS of **KENTIA BELMOREANA**, 20,000 **FRESIAS**, 2000 Pearl and African **TUBEROSES**, &c., &c.

On view morning of Sale, and Catalogues had.

BY ORDER OF THE LIQUIDATOR.

GREAT SALE

OF THE ENTIRE STOCK OF

ORCHIDS, TEA ROSES, FERNS, PALMS,

And General Stock of

STOVE and GREENHOUSE PLANTS,
GRAPE VINES, &c.,

THE PROPERTY OF THE

LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN, Limited).

The Company are now selling their entire Stock as above, at extremely low prices, and in addition to the low prices quoted in the Catalogues, very large discounts are allowed.

Inspection is earnestly invited.

The Company are also offering, for the first time, their splendid NEW GRAPE VINE, **HAMBRO-COLMAR**.

Descriptive and Priced CATALOGUE of the entire Stock will be sent, post-free, on application to the Company.

THE VINEYARD and NURSERIES,
GARSTON, near LIVERPOOL.

TO BE SOLD, capital NURSERY, FLORIST and SEED BUSINESS. Only small capital required. Long Lease, low rent, good connection. No agents.
Apply to R. F., 41, Wellington Street, W.C.

TO BE SOLD AT ONCE, Old-established NURSERY BUSINESS, all home trade. Ten well-heated Houses, 400 feet Pits, part heated. Long Lease on Ground, £250.
P., 6, Watdale Road, Forest Hill, S.E.

FLORIST'S BUSINESS, old-established, in full working-order, situated in main thoroughfare, with good connection, six-roomed House, Stable, &c.; seven Greenhouses, all heated, well stocked with useful and valuable stuff. A Bargain, if sold at once. Rent moderate, or Freehold would be sold.—**WILSON**, 149, Markhouse Road, Walthamstow.

NURSERY for SALE, or to be LET, near Blackheath, S.E., in working order. Land, 442 feet by 150 feet (more or less), at low ground rent. Contains seven Glass Houses, about 100 feet to 123 feet long, heated by three Boilers; three Cold Frames, about 100 feet long; Planting Ground, &c. Stock at valuation, if desired.—Apply to **THOMAS PEACOCK**, Warwick Square, London, E.C.

TO BE SOLD, a MARKET NURSERY; 420 feet run of Glasshouses, and about 70 feet of heated frames on two acres of land close to station, convenient for London or the North.

S. W. DANBY, Leagrave, near Luton, Beds.

FOR SALE.—A good FLOWER, VEGETABLE, and FARM SEED BUSINESS, West of England.—Apply, B., care of Messrs. Hurst & Son, 152, Houndsditch, London, E.C.

TO NURSERYMEN.—LEASE and GOOD- WILL of a capital Nursery Ground for SALE, a bargain, covering an area of two acres, adjoining Station in a high-class neighbourhood. North of London. Owner retiring in consequence of ill health. Six Greenhouses on ground. Lease 21 years. Rent, £75.
Apply to Messrs. **HARMAN BROS.**, Auctioneers, 75, Aldermanbury, Guildhall, E.C.

City of Peterborough.

TO NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS.

TO BE LET, with Immediate or Michaelmas Possession, the well-known, old-established Peterborough BUSINESS, comprising a NURSERY FARM of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the town. Also, a superior SEED SHOP and STORE, in a first class central position; and a FLOWER-STAND on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, **FOX and VERGETTE**, Estate Agents, Peterborough.

LARGE GARDEN, South of England, 16 acres, two Cottages, twenty large Green and Vine Houses, and Heated. Low rent.—**ELDRIDGE**, Portland Club, Southsea.

TO LET.—A first-class FLORIST'S BUSINESS, in a fashionable Watering-place. Immediate possession. Stock and Fixtures about £200. Bonâ-fide. Exceptional opportunity.

FLORIST, 2, Weston View, Parkend Road, Gloucester.

GREENHOUSE for SALE, at Great Yarmouth, nearly new, span-roofed, 51 ft. 3 in. by 15 ft. 2 in., with two glazed partitions, heated with Hot-water Pipes (334 feet); also fitted with six 6-gallon Galvanized Water Tanks, and Plant Stands, easily removed. Apply to—**SAMUEL ALDRED**, Auctioneer, &c., Great Yarmouth.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

EWING'S MILDEW COMPOSITION.—The original, certain, and safe remedy. In bottles, 1s. 6d. and 2s.; per gallon, 12s. Sold by all Seedsmen.—**CORRY AND CO.**, Limited, 13, 15, and 16, Finsbury Street, London, E.C.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—
Messrs. **R. SILBERRAD and SON**, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

FERNS! FERNS!!—Trade.—Greenhouse and Stove, 25 saleable sorts, in 24-in. pots, 12s. per 100; 10 best market sorts, in 48s. 6s. per doz.; stores, 6s. per 100. Large *Adiantum cuneatum*, value in fronds, 4s. and 8s. per doz. *Cyperus*, *Aralias*, *Grevilleas*, in 48s., good value, 6s. per dozen. *Palm*, *Ficus*, & *Dracenas*, 1s. each. *Hydrangeas*, *Pelargoniums*, *Marguerites*, 9d. each; in 48s., 1s. each. *P. tremula* and *A. cuneatum*, for making large plants quickly, 18s. and 20s. per 100, well packed, put on rail free for cash with order.—**J. SMITH**, London Fern Nurseries, Loughboro' Junction, London, S.W.

BULBS — BULBS. — Bargains in Bulbs. —

Special Cheap Offer for really good large Flowering Bulbs:—*Pancratium*, all best sorts, grand bulbs, ready to burst into flower—*P. fragrans*, *P. caribæum*, *P. amœnum*, *P. zeylanicum grandiflora*, some bulbs 12-inches round, 18s. to 40s. per 100; 2s. 6d. to 6s. per dozen. *Gloriosa superba*, just imported, 25s. per 100, 4s. per dozen. *C. zeylanicum*, very large plump bulbs, 50s. per 100, 8s. per dozen; *C. asiaticum*, large white flower, 5s. to 8s. per dozen; extra large, 20-inches bulbs, 2s. 6d. and 3s. 6d. each. *Amorchois falcata*, splendid bulbs, make fine Pot Plants, 3s. each. *Zamias*, for Table Plants, 2s. each. *Amorchois campanulatus*, or Stanley's Wash-Tub, flowers 2½ feet across, 6s. per dozen, 1s. each. *Babianas*, in ten sorts, 12s. per 100. *Ixias*, in sorts, 10s. per 100. *Freesia* ref. alba, true, 18s. to 26s. per 1000. Above is Cheapest Offer ever made for first-class Bulbs. Terms, Cash with Order. All Bulbs warranted sound and freshly imported, or money returned.
J. JAMES, Importer, New Malden, Surrey.

TWO PENCE—Including Coloured Plate. Post-free, 2½d.

ROSE NUMBER, JULY 1. GARDENERS' MAGAZINE.

CONTENTS:—Hedges of Japanese Roses, by G. F. Wilson, F.R.S.—Tea Roses: Past and Present, by Rev. H. H. D'Ombraïn—Hybrid Perpetuals for Exhibition, by E. B. Lindsell—Polyantha Roses, by George Paul—Roses for Amateurs, by Charles J. Graham—Garden Roses, by Rev. J. H. Pemberton—Single Roses, by W. J. Grant—Roses in Ireland, by Alex. Dickson, Jun.—Preparing and Staging Blooms, by W. Harkness—Roses Under Glass in America, by Michael Barker—Mr. A. Hill Gray's Garden, by George Gordon.

COLOURED PLATE OF A NEW TEA ROSE

(EDITH BROWNLOW).

OFFICES: 4, AVE MARIA LANE, LONDON, E.C.



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WATER FITTINGS

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HAYWARD TYLER & CO.,

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LONDON, E.C.

TELEGRAMS, "TYLECROX LONDON."

MERRYWEATHERS' HIGH-CLASS GARDEN HOSE.



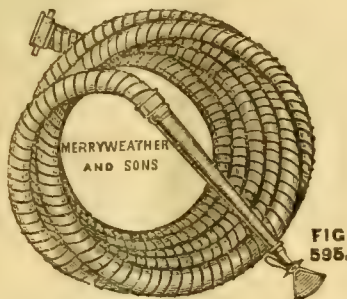
NON-KINKABLE Red-Gray Hose.

In many cases preferable to
Sphincter Grip Hose.Horticultural Exhibition,
1892.

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FOR
SPHINCTER GRIP HOSE.
Other Makers awarded
Bronze Medal only.

*Important Reduction
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Quality maintained.*



SPHINCTER GRIP Armoured Hose.

Made by Merryweathers, the original
introducers and first makers of this
Hose in England.

ORDERS EXECUTED SAME DAY AS RECEIVED.

WRITE FOR PRICE LISTS FROM THE OLD ESTABLISHED FIRM.

MERRYWEATHER AND SONS continue to guarantee all their High-class Garden Hoses to pass the severe British Government Tests.

The ends of the Rubber Hoses are sealed, thus preventing the water percolating between the canvas plies, and destroying same.

IMPORTANT DECISIONS Re SPHINCTER GRIP HOSE, IN THE HIGH COURT OF JUSTICE.

Judgment in favour of MERRYWEATHERS, with costs in all actions.

FIRE and GARDEN ENGINES, FOUNTAINS, SYRINGES, &c.
WRITE FOR GARDEN CATALOGUE.

MERRYWEATHERS, 63, LONG ACRE, LONDON, W.C.

EXHIBITIONS.

ROYAL BOTANIC SOCIETY, GARDENS

Regent's Park, N.W.

EVENING FÊTE and EXHIBITION of TABLE DECORATIONS and FLOWER PAINTINGS, WEDNESDAY NEXT, July 5. Gates open 8 P.M. to 12. The following Bands will play from 8 to 12:—The 2nd Life Guards, the Royal Horse Guards (by kind permission of their Commanding Officers), and the Ladies Pompadour Band.

Tickets to be obtained at the Gardens only by Vouchers from Fellows of the Society, price 10s. each, or on the Day or Evening of the Fête, 15s. each.

Foreign and Country Visitors to London wishing to obtain Vouchers should apply to the Secretary.

NEWCASTLE-ON-TYNE SUMMER

FLOWER SHOW, annexed to the Great Northumberland Agricultural Show, JULY 20, 21, and 22, 1893. Entries close July 13. For Schedule apply to

J. I. GILLESPIE, Jun., Secretary.

Cross House Chambers.

WOLVERHAMPTON GREAT FLORAL FETE

July 11, 12, & 13, 1893. In the Public Park.

OPEN CLASSES for PLANTS, ROSES, FRUITS, &c.

GOLD, SILVER, and BRONZE MEDALS for PANSIES and VIOLAS.

OPEN AMATEUR CLASSES for ROSES.

GENTLEMEN'S GARDENERS' CLASSES for the Counties of Stafford, Warwick, Worcester, and Salop.

Open Air Space to Let for Horticultural Sundries.

SCHEDULES, ENTRY FORMS, &c., apply—

W. A. GREEN, Junr., Hort. Sec.

Under the Protectorate of His Majesty King
Albert of Savoy,

INTERNATIONAL HORTICULTURAL EXHIBITION At LEIPZIG.

From August 25 to September 5, 1893.

All Nurserymen are Invited to Compete.

For details, apply to—

OTTO MOHRMANN, Leipzig - Lindenau.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest
stock of Orchids in the World.—30 minutes from St. Pancras.

FOWLER'S MEALY BUG DESTROYER
effectually and instantly destroys this most troublesome
pest without stain or injury to the foliage. In bottles, 1s.,
2s. 6d., 5s., and 10s. each. Sold by all Seedsmen.—CORY
AND CO., Limited, 13, 15, and 16, Finsbury St., London, E.C.

BULBS.—Our special offer of Daffodils, and
other Bulbs for early planting, is now ready. Liliun
candidum, 10s. and 12s. per 100; Liliun Harrisii, 5s. to
10s. 6d. per dozen; Roman Hyacinths, 12s. 6d. and 18s. per 100,
very scarce; Narcissus (paper-white), 5s. per 100; Narcissus
Double Roman, 5s. per 100; Gladiolus Colvilli (The Bride),
lovely for cutting, 2s. 6d. per 100; Iris hispanica (the poor
man's Orchid), finest mixed, 1s. 6d. per 100. Every article the
best procurable.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

SPECIMEN CAMELLIAS, &c.

FOR IMMEDIATE DISPOSAL,
And for which no offer will be refused,
24 Named Plants, best varieties.

Also a few large PALMS.

Sizes and sorts on application to

R. B. LAIRD & SONS,
EDINBURGH.

STUART & MEIN'S No. 1 Cabbage.

The earliest and finest type of Spring Cabbage in cultivation,
coming into use in April and May. The hearts are large and
solid, and of the finest flavour. Our Seed of this famous
Cabbage being the true stock, and as many inferior varieties
are substituted for it, we strongly advise all to send to us
direct for their supply. As a further inducement we offer £3
in Cash Prizes for the Three Best Cabbages Grown from Seed
procured direct from us. Full particulars will be supplied
with each packet of Seed sent out.

1s. per packet, post-free, 1s. 6d. per oz.

STUART & MEIN, KELSO, SCOTLAND.

ESTABLISHED UPWARDS OF HALF A CENTURY.

50,000 CELERY, Clayworth Pride Pink, all transplanted, and extra strong, 8s. p. 1000. 100,000 Cauliflowers, Early Cabbage, Spring Broccoli, Asparagus, Kail, Curled Greens, 5s. per 1000. Or and Thousand-head Cabbage, all strong and stout plants, 4s. per 1000. (Name paper.) Cash with order. G. YORKE, Seedsman, Retford.

SPECIMENS of CAMELLIAS (First Prizes by Acclamation and unanimity in all the classes at the Ghent Quinquennial).

Description and Prices sent on application.

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VIOLA SEED.—Seedlings make a magnificent display, and now is the time to sow for blooming next spring and summer.

NEW SEED, guaranteed from the finest named varieties, 7d., 1s., and 2s. 6d. per packet, post-free. With each packet will be sent gratis a copy of our little book on *Violas and Viola Culture*. All other seeds for present sowing can also be supplied; likewise a number of Seedling Herbaceous Plants, **VERY CHEAP**. Send for LIST.

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ALL GOODS DELIVERED FREE on board, London, Antwerp, Rotterdam.

LILIAM HARRISII, 5-7 in. circ., per 1000 bulbs.	2 s. d.
" 7-9 in. "	6 5 0
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" 9-11 in. "	11 10 0
TUBEROSES, Pearl, select 4-8 in. "	1 10 0
" seconds, 3-4 in. "	1 2 6

Prices for GLADIOLUS, &c., on application.

F. W. O. SCHMITZ AND CO., Jersey City, N. J., U.S.A.

Shepperson's Novelties and Specialties.

PRIMULAS.—PRIMULAS.

The following splendid new varieties, mixed, Purity, alba magnifica, rubra, violacea, Chiswick Red, New Scarlet, and Bull's Premier, only 1s. 6d. per dozen; 10s. per 100, carriage free.

CINERARIAS.—CINERARIAS.

Bull's unrivalled strain for large flowers and splendid colours, 1s. 6d. per dozen; 10s. per 100, Carriage Free.

CYCLAMEN.—CYCLAMEN.

Lamb's Celebrated Giganteum Strain, the finest strain in England, 1-yr. old plants, only 2s. per dozen, Carriage Free.

SAMUEL SHEPPERSON,

FLORIST AND SEED-MAN,
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**SPECIALTY—
FOLIAGE PLANTS
ICETON'S
LARGE PALMS.
PUTNEY,
S.W.**

**NOTHING
NOTHING**

is too small.

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THE TRADE SUPPLIED.

D. SHUTTLEWORTH & CO., Ltd.,
(Albert Nurseries)

PECKHAM RYE, LONDON, S.E.,
and FLEET, HANTS.

FERNS A SPECIALITY.

A magnificent stock of all kinds of Ferns. Abridged Catalogue of 1400 varieties free on application.

ILLUSTRATED CATALOGUE OF FERNS (No. 22), the most beautiful and complete ever published, 2s., post-free. It contains 150 illustrations, and an immense amount of interesting and instructive matter of great value to all Fern cultivators.

W. & J. BIRKENHEAD, F.R.H.S.
FERN NURSERIES, SALE near MANCHESTER.



Sold in Tins, at 1s. and 2s. 6d. each, and Bags, 3s. 6d., 5s., and upwards.

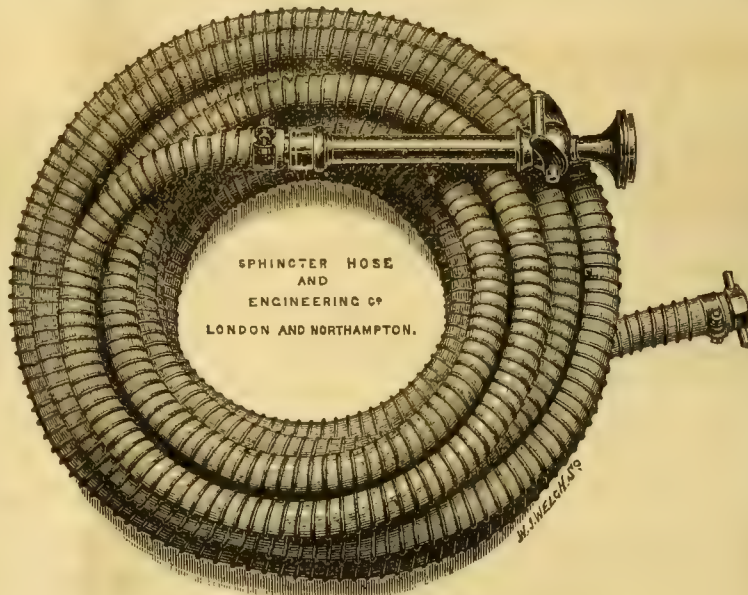
H. & E. ALBERT, 17, GRACECHURCH STREET, LONDON, E.C.

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The Original Sphincter Grip Armoured and High-class Unarmoured Garden Hose.

"HERCULES" BRAND (REGISTERED).

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HIGHEST and ONLY AWARD.



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CAUTION.—No Medal or Exhibition Award has ever been secured by any Firm except this Company for Sphincter Grip Hose, exclusively and distinctively.

Beware of Worthless Imitations and Foreign Importations, of which there are many, and of the goods supplied by any firm or firms making misleading statements. All this Company's Hose made from best Para Rubber, and English materials and labour only, to pass English Government Tests; this last feature in itself a guarantee of quality.

THE BEST, AND THEREFORE THE CHEAPEST.

Orders Executed same day as received. LARGER STOCK KEPT, and SALES GREATER than by any other Firm in the United Kingdom. Write for full Descriptive Price List of above, and of GARDEN PUMPS, HOSE, REELS, and FITTINGS. Post-free.

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No. 304.—**STABLE and SHED.**
For Cricket Fields, Hunting
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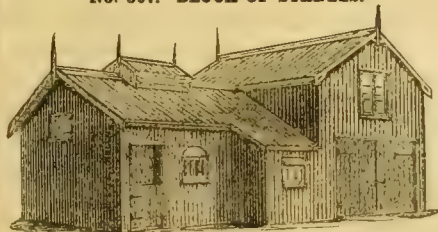


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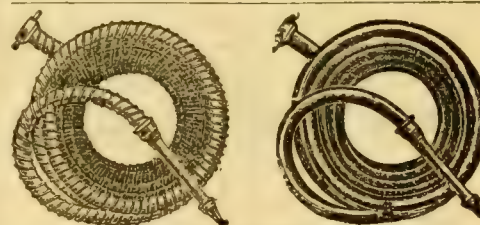
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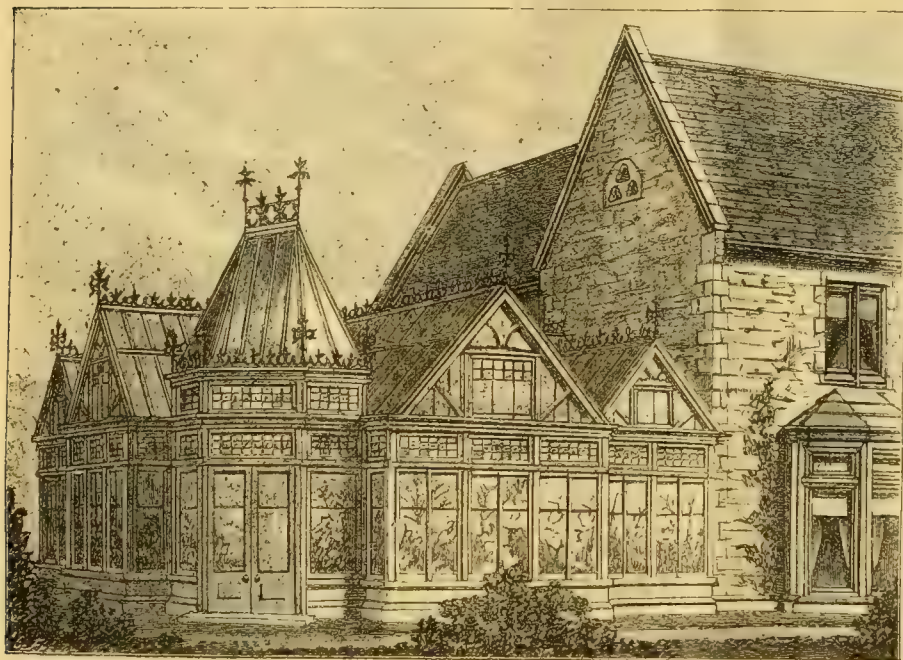
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A distinct-looking and probably NEW *CATTLEYA* from Bolivar, in the section of Mossiæ. Our Collector, who came home with the plants, declares this *Cattleya* to be new.

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THE

Gardeners' Chronicle.

SATURDAY, JULY 1, 1893.

PIERRE POIVRE (1719—1786).

THIS naturalist was born in August, 1719, at Lyons, where his father was engaged in business and commerce. Like many of his famous contemporaries, he owed his training to a religious community, having been educated by the missionaries of Saint Joseph, the Superior of whom was a friend of his family. The Jesuits, hearing of the great aptitude of young Poivre, attempted by means of the Archbishop, M. de Rochebonne, to persuade him to join their college; but the missionaries prevented this, and he was sent to finish his education at Paris, in the Congregation of Foreign Missions, where he also distinguished himself.

Although going through the course of instruction prescribed for Catechumens, he did not devote his whole time to philosophy and theology, but successfully applied himself to drawing and painting as a relaxation, and also as a means of information in the foreign countries which he meant to visit. He was first despatched as a missionary to China, and soon after his arrival, having been denounced as a dangerous foreigner, was imprisoned by the authorities at Canton. The viceroy of the province of Quantung, however, was soon convinced of his innocence, and afforded him his protection, and under his powerful influence, Poivre was enabled to procure all the facilities for seeing the interior of the country, which were not easily procurable by foreigners.

After two years' residence in South China, Poivre accompanied the French missionaries to Cochin China, where he spent two more years, returning again to Canton, where he remained in great favour with the Chinese viceroy for some years. Unfortunately, no exact dates of these occurrences are given by M. Dupont de Nemours, his biographer; nor, indeed, are any of these dates to be found in the notice of Poivre's career given in the latest edition of the *Biographie Universelle*.

In 1745, M. Poivre returned to France, in order to visit his family, and also to take holy orders. He embarked at Macao on board the *Dauphin*, which was attacked in the Straits of Banca by an English frigate of superior strength, one of a squadron under Admiral Barnet, whose flag was on the *Deptford*. M. Poivre fought among his countrymen, and was zealous in attending to the wounded on deck until he was struck on the wrist by a round shot, which shattered his arm. His first words, as soon as he could speak, were, "Je ne pourrai plus peindre" ("I shall not be able to paint any more!"). Shortly after he fell, the ship was taken, and poor Poivre was placed in the hold, where he remained twenty-four hours without his wound being attended to. Gangrene supervened, and his arm was subsequently removed by an English surgeon. Curiously enough, this grave injury was, in the

er'd, a blessing, as it prevented Poivre from entering the Church, and enabled him to become a famous administrator, and to enjoy all the happiness of a married life, and the pleasures of a family man.

Unfortunately for science, his journal and a large number of valuable drawings which he had made in China fell into the hands of the English, and were never recovered. Perchance these interesting manuscripts are still somewhere buried in the archives of the Admiralty, unless, like so many other valuable documents in our public offices, they have been "pulped," and destroyed as waste paper—a fate which has befallen many tons of interesting records in our benighted country.

The English captors being short of provisions, landed their prisoners at Batavia, and set them free. Poivre made use of his enforced stay at the capital of the Dutch East Indian establishments to study and gain all the information possible on the culture of the precious spice trees, the plantations of which were at that period exclusively in the hands of the Dutchmen. This gave him the idea, which he afterwards realised, of enriching the tropical colonies of his own country by the introduction of spice cultivation. From Batavia, Poivre proceeded to Mergui in Siam, where he spent the winter, and thence made his way to Pondichéry. The vessel in which he made the voyage was ill-found and badly manned, consequently, it had to be constantly taken into various ports *en route*, and during these enforced intervals, Poivre had the opportunity of making himself accurately acquainted with the manners and customs of the Malay people and of the Siamese. Although only twenty-seven years of age, he had already learnt how to judge of the welfare and progress of races by the state of their agriculture.

On arrival at Pondichéry, Poivre found himself in the midst of the complications arising from the brilliant expedition of Madras, and the consequent quarrels between Dupleix and De Labourdonnais. He divided the blame equally between these two famous chiefs, otherwise so able and illustrious, and in vain attempted to bring about a reconciliation. He accompanied De Labourdonnais to the Isle of France, and afterwards to the Cape and Martinique, where their vessel was detained by the war for want of convoy. Poivre, however, who was anxious to place in the hands of the French Government some important information which he had acquired in the East Indies, crossed in a canoe to the island of St. Eustache, where he obtained a passage to Europe in a Dutch vessel. However, misfortune seemed to pursue him, for he was again captured by a corsair, which was retaken four days afterwards by an English frigate, which landed him at Guernsey, where he remained about a week, when the signing of the peace enabled him to return home.

The curious observations and the grand ideas which Poivre brought back from Asia, together with the perfection of his Chinese, Cochinchinese, and Malayan languages, soon brought him to the notice of the French East India Company (*La Compagnie des Indes*), and he was selected in the year 1749 to represent France as Minister in Cochinchina. The King of Cochinchina, surprised to find a young French Minister at his court with whom he could converse in his own language, became very friendly and intimate, so that he was enabled successfully to combat all the intrigues and manoeuvres of the crafty mandarins who formed the court of the despotic sovereign. Poivre returned to the Isle of France laden with rich presents from the Oriental despot, but he religiously handed them all over to the French authorities.

During his stay in Cochinchina, Poivre had taken immense pains to collect the most useful and economical plants, which he judged could be introduced and naturalised in the Isles of France and Bourbon. He brought these, and acclimatised, amongst others, the Pepper (*Piper nigrum*), a wild kind of which, *Piper sylvestre*, was known to occur in Madagascar and Mauritius; the Cinnamon (*Laurus cinnamomum*), the Litchi (*Euphoria Litchi*), the

Jack-fruit (*Artocarpus integrifolia*), besides several species of dye woods, and trees producing gums, resins, and varnish. The most precious, however, of all the plants which he introduced to the Mascarenes is the dry Rice, which was extensively cultivated by the Cochinchinese on mountain lands, at a considerable elevation, in a comparatively moderate temperature, and not requiring irrigation. Several crops of this species of Rice are obtainable, and it was successful in Mauritius as long as M. Poivre remained in the island; but after his death (according to his biographer) the cultivation of this sort of Rice was neglected, and left to the negroes and slaves, who watered it as the ordinary rice fields, so that this description, which might have become a valuable article of food in the Mascarene Islands, was allowed to die out.

The biographer advises the colonists in the Isle of France to send to Cochinchina, and reintroduce the *Riz sec* to the colony. Shortly afterwards, M. Poivre was sent by the company to Manila on a secret mission. His instructions obliged him to keep the object of his mission secret, even from the



FIG. 1.—FLOWERS IN ICE.

employés of the company at Canton, where he passed on his way—although, as it subsequently appeared, these same officials had learnt the secret orders through another channel. In consequence of his reticence, these jealous officials put all sorts of malicious obstacles in his way, and it needed all his energy to carry out his task, which he could only accomplish partly owing to the machinations of his enemies. He was obliged to return to Pondichéry and the Isle of France, but not before he had established friendly relations with the Spaniards and with the natives of the Philippines, with whom he came in contact; and he at all events paved the way for a second happier and more successful visit. This journey was undertaken with the main object of acquiring and naturalising in the Mascarene Islands the finer and rarer species of spice trees, which were then almost wholly monopolised by the Dutch in Java and the Moluccas. *S. Pasfield Oliver, Captain late Royal Artillery, Anglesey, Gosport.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

LILIUM CROCEO-ELEGANS.

MR. SPRENGER, of the firm of Messrs. Dammann & Co. of Naples, has lately been experimenting in the hybridisation of Lilies, and I am indebted to him for fine specimens of one of the crosses he has been successful in obtaining between the European cro-

ceum and the Japanese elegans (*Thunbergianum*). The robust stem reaches a height of above 2 feet; the leaves are shorter and broader than is usual in croceum, the lowest being lanceolate, 2 or 3 inches long, without any bulbilla in their axils; the inflorescence is a lax corymb of six or eight flowers, with cottony peduncles and small ovate bracts, and the flower is 3 inches long, inside light or deep scarlet, with copious small black dots, and many raised papillæ towards the base, with outer segments under an inch, and inner a little over an inch broad at the middle. This hybrid is a fine plant for decorative purposes, and is interesting in throwing light upon the origin of *L. umbellatum*, Link, which is known in cultivation only, and is probably a hybrid between croceum and *davuricum*. *J. G. Baker.*

FLOWERS IN ICE.

At a recent meeting of the Royal Horticultural Society, much interest was excited by the exhibition on the part of E. Herbert Fison, Esq., of Ipswich, of several truncated cones of ice in which were embedded various flowers. Each block of ice measured about 16 inches in height, and the enclosed flowers were those of common New Zealand plants. We need hardly say how much more acceptable they were than similar consignments containing *Chrysanthemums*, of which we see enough during the winter season. Among the flowers which showed to most advantage were those of *Callistemon*, *Cordylina australis*, *Leptospermum scoparium*, *Arthropodium cirratum*, *Carpodetus serratus*, and *Statice latifolia*; but there were many others. Our illustration (fig. 1) shows the general appearance of one of the glacial blocks, which enabled us to see flowers from New Zealand almost as fresh as on the day they were picked. They confirm our oft-expressed opinion that it would be well if our colonial friends turned their attention to their own flora instead of devoting their horticultural energies towards the reproduction of European fancies. They would thereby greatly extend the resources of horticulture, whilst from a scientific point of view, they would render valuable service.

THE ROCK GARDEN, BEAR PARK, WENSLEYDALE.

THE number of visitors to the upper Yorkshire dales has enormously increased since the railway penetrated thence. It was in 1846 that the Great Northern began the railway from Northallerton to Bedale, which in February, 1855, was opened for traffic. Another company commenced to make an extension of the line from Bedale to Leyburn in 1853, and opened it in 1856. After this, for nearly twenty years no further extension was made till 1870, when a line was begun at Leyburn which was to run to Askrigg; this line was opened seven years later, and the next year 4½ miles of line was made to the town of Hawes. The whole of the railway from Northallerton to Hawes now belongs to the North-Eastern Railway, who run five trains each way daily.

Passing the town of Bedale, with its picturesque church, then the station for Jervaulx Abbey, Leyburn, and the pretty little village of Wensley is reached, which gives the name to the Dale which is supposed to commence here. Here the wildness and true character of the country begins to show itself; on the north, high above the stream and railway, is a huge but picturesque rampart of rocks, called "Leyburn Shawl." Passing Bolton Castle on our right, and Bolton Hall to our left (below the railway), another station—Redmire—is passed, when we notice a wild piece of undulating ground, covered thickly in places with Thorn, Holly, Wild Roses, &c. We have now reached our destination, Aysgarth station, which has become famous from the fact of being close to the falls of that name.

The view even from this point is extensive and beautiful: up the valley we can see Wild Boar Fell

2323 feet above the sea-level, and Cotter End over 2000 feet, and the intervening ridges and valleys; while to our right—north—is a long high ridge, the watershed of the Wharfe and the Yore; to our left—south—are lower ranges of hills, penetrated by minor streams, and here are Bishopdale, Waldendale and Coverdale; then, looking south-east, Penhill stands boldly out—a fine broad massive fell nearly 2000 feet high. There is a village on either side of the dale—Carperby on the north slope, and Aysgarth on the south, immediately above the river.

Mr. J. G. Baker, in his *North Yorkshire*, writing of this particular spot, says:—"At Aysgarth, in a deeply excavated rocky channel, with a wooded bank rising steeply from it upon either side, the river begins to form a series of picturesque rapids,

flora of this district is doubtless the variation in the rock formation, there being several forms—limestone, slatstone, shale, and on the summits gritstone. In this charming spot, surrounded and embracing some of the finest of Yorkshire hill and dale scenery, is situated the Bear Park estate. It is divided into three portions, from the fact of the river and railway passing through, the latter running almost parallel with the former, but separated from it by a Pine wood and other trees.

Bear Park House is an old residence, which dates back about to the thirteenth or fourteenth centuries, and was formerly the residence of the Metcalfes, previous to the building of Nappa Hall. On the north side of the house, inserted in the wall, is a large stone, on which is chiselled the sacred

if some of the rocks which lie about in his fields and abounding in the vicinity were used, it would make the garden harmonise more with the surrounding country. It may be well here to remark that the lie of the garden is to the south; the slope of the lawn is very considerable, falling towards the railway, and as the line virtually passes through, it forms quite a pleasant surprise and attractive feature for the passengers as they pass. In addition to the herbaceous borders round the garden, on this slope a number of rocky beds have been formed and tastefully planted with permanent subjects, such as dwarf Rhododendrons, Ericas, Sedums, Saxifrages, Armerias, Lithospermum, &c. The large bed, which is the lower one, and nearest the railway, has many tons of rock in it, and is richly planted. We

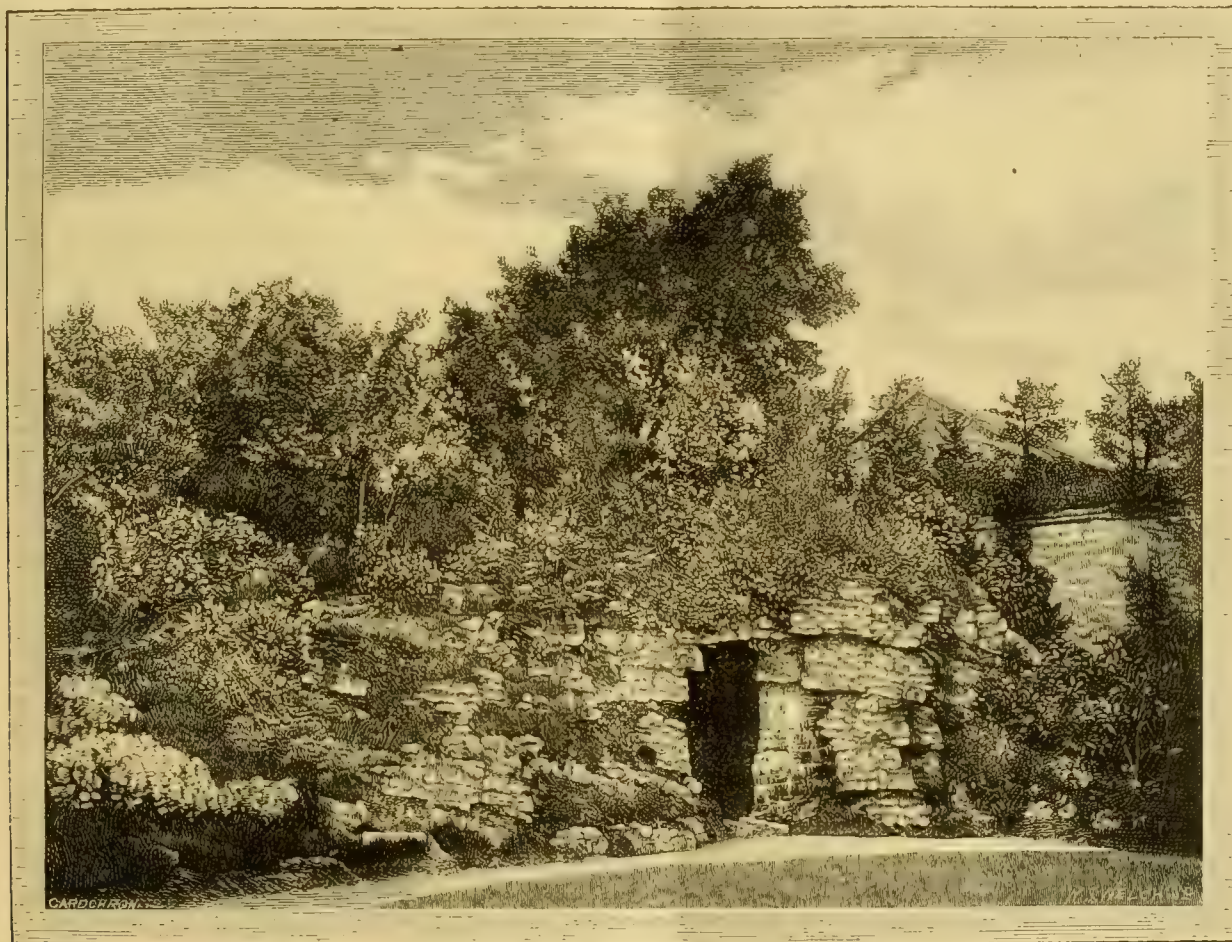


FIG. 2.—ROCK SUMMER-HOUSE, BEAR PARK, WENSLEYDALE.

which are continued for about a mile; fed by the waters of the wide branching dales, which one after another have poured their contributions into it, the stream is now a fine river.

"Magnified by the long winding scars of the lower mountain limestone and interpolated slate beds, it flows down the pleasant Aysgarth glen, its dark peat-stained waters hemmed in upon both sides by shelving reaches of Moss-fringed grey limestone rocks, and above them there rises a steep bank covered thickly with aboriginal trees and bush-wood, Hazel, White Thorn, Brambles, and Roses of multiform specific types; and on the south are the broad Heathery slopes of Penhill, its peak 1200 feet above the stream.

"The main fall, which is over a limestone precipice about 20 feet in depth, is exceedingly fine in the impression of irresistible force which it gives when the river is swollen."

One fact which accounts for the rich and varied

monogram which, Sir George Gilbert Scott says, is probably the retabulum of a side altar, dedicated in honour of the Passion. The inscription is: "Sit nomen domini ihm benedictum" (Blessed be the name of the Lord Jesus), supposed to have been brought from Coverham Abbey at the dissolution in the time of Henry VIII.

For many years it was used simply as a farmhouse, before the present proprietor purchased the estate. Mr. Bradley at once commenced to renovate the building, but was careful to retain as much as possible of its ancient characteristics. After making some good roads, &c., Mr. Bradley gave his attention to the garden. When commencing this, Mr. Joseph Cheal, of Crawley, was consulted, who changed the aspect of the whole place, and laid the foundation for a beautiful though not large garden.

After the kitchen garden was formed, the lawns made, and some planting carried out, both in the garden and the park, it occurred to Mr. Bradley that

noticed here masses of the brilliant blue *Gentiana* (*Gentiana acaulis*), *Campanula pusilla*, *C. Hendersoni*, Backhouse's large white *Campanula*, which is one of the finest border plants we know, *Pinks*, *Phlox subulata* and its varieties, *Azalea mollis*, some of the best of the *Flag Iris*, such as *I. pallida*, *I. dalmatica*, and the pure white *I. Attraction*. In addition to these, a choice collection of *Narcissus* is cultivated. The *Scillas* and *Chionodoxas*, with their brilliant blue and white flowers, grow well. Another pretty feature in this rocky bed is the large rocks, covered with *Cotoneaster rupestris* and *C. congesta*. A few paces away from this bed is an isolated specimen of Young's Weeping Birch, 15 or more feet high, and branched to the ground, its graceful whipcord-like branchlets resting upon the grass.

Not far from this is a sunken wall of rough stone, almost concealed by shoots of *Cotoneaster microphylla*, *Ivies*, *Clematis*, and *Honeysuckle*. Alpine

plants, which like limestone, are abundantly planted, and some of the rarest plants from the Swiss Alps, Pyrenees, the Tyrol, are made use of. *Saxifraga longifolia* was in splendid style, almost better than it can be seen in its native haunts, the rosettes fully 10 inches in diameter.

The masses of Alpine *Rhododendrons*, *R. intermedium*, *R. hirsutum*, and *R. ferrugineum*, are excellent; *Primula marginata*, *P. viscosa*, and *P. Auricula marginata*, are apparently thoroughly at home. Some forms of *Saxifraga oppositifolia* and *S. Burseriana* are as fine as when seen growing in their natural habitats. *Lithospermum graminifolium* makes fine large tufts; it is here, at 500 feet altitude, perfectly hardy. It is one of the rarest and most beautiful of the Borrageworts, forming large tufts, which consists of the woody root-stocks and grass-like foliage, only a few inches high, from which arise in summer arching clusters of pendulous flowers of a brilliant blue colour. *Pinus pumila* and *P. cembra*, two very suitable species, are used with good effect. *Juniperus sabinoides* and *J. tripartita* have also proved of value in this high situation. Mention may also be made of *Elymus glaucus*, which is planted on high ground in front of some dark *Juniperus* and other subjects; its deep glaucous-blue, ample grassy foliage, contrasts so well during the summer months, and for such positions it is an admirable plant to use.

A piece of land on the east side of the house was to be furnished with rockwork, and to this spot massive pieces of limestone were brought from the hills, and formed into rocky buttresses or mounds, which the garden path cuts in half, and on one side of which the lawn comes right up; while on the other the rocks are backed by a collection of trees and shrubs, and the crevices and slopes are well clothed with alpine and other plants.

At the west part of the garden, it was at one time contemplated to erect a summer-house; but as the rockwork in other parts had proved satisfactory, it was considered possible to use the same kind of rocks, and to form a cave or rock summer-house, which would serve at the same time for protection to the garden. Accordingly, a considerable quantity of very large pieces of rock were brought down, at the cost of much heavy labour.

Amongst these rocks a great quantity of suitable soil was placed, and in this way the rock-cave as seen in fig. 2, was constructed. Although the position is very bleak, still, most of the trees, shrubs, and other plants have thriven; and in the crevices of the rocks themselves, mossy and Lichen-covered alpine, dwarf species of *Ivy*, *Erica carnea* var. *rubra*, and other *Ericas* have become established.

At the time of my visit the garden was in excellent order, and bespoke good management and industry on the part of Mr. Shannon, the gardener. I cannot close these remarks without expressing my sense of the courtesy of Mr. Bartley in allowing me to look over this charming place. The photographs from which our engravings were taken are the work of Mr. T. A. Cotton, Ullswater, Green Lanes, Finsbury Park. The rockwork in the gardens is the work of Mr. R. Potter of Messrs. Backhouse's Nursery, York. R. P.

FOREIGN CORRESPONDENCE.

STREPTOSOLEN JAMESONI.

Of all flowering plants grown on the Riviera this is one of the most effective, and at the same time most useful, flowering as it does during the whole winter and spring months. As it may be seen growing here in a bush, sometimes about 4 or 5 feet high, and loaded with its beautiful orange-scarlet flowers, it is a sight that one would delight to see in our greenhouses in England, and it is a wonder that it is not met with more often. It delights to grow in the full sunshine, with abundance of water during the growing season. The gardener that first exhibits a specimen plant as large as described, and well flowered, at one of our English shows, will, without

doubt, cause a sensation. It is figured in the *Botanical Magazine*, tab. 4605, under the name of *Browallia Jamesoni*. *Riviera*.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

CUCUMBERS.—Those plants which are freely fruiting should be afforded liquid-manure, and a mulch of half-rotted manure. Remove deformed fruits, frequently stop the growths, which is preferable to cutting out large quantities of vines and foliage at long intervals of time; and when the soil is watered, wet every portion of it. Under-watering, especially if the water be less warm than the soil, conduces to crippled fruit, and a bitter taste. The present is a suitable time for planting Cucumber plants, on beds with a mild bottom-heat, for autumn supply; Rollison's Telegraph is still a leading favourite, and Monroe's Duke of Edinburgh is a short-fruited variety, and a great cropper.

TOMATOS for latest crops may now be propagated by cuttings, or seed may be sown. We had some fine crops of Trophy last winter from plants sown at this season. Cuttings put singly into small pots, and potted on as may be necessary, are very fruitful, and not likely to grow so rank as plants from seed; they fruit freely in pots plunged in mild bottom-heat, but growth should not be rendered weakly from absence of air and a too high temperature.

PEACHES AND NECTARINES.—The past few weeks of bright sunshine have brought on Peaches and Nectarines rapidly; they are high coloured (not where foliage is poor and overcropping been practised), and quality good. They should be gone over every morning while the fruit is ripening, and carefully pulled when they move freely from the trees, handling them as little as possible, and they should be kept in an airy cool dry place till they are wanted. If they are to be sent to a distance, the fruit should be packed before they are quite ripe. Much water will be required by borders which are well drained; mulching is of much service to the maintaining of healthy root-action. Keep growth thin, and allow sun to have full power on the fruit. Give liquid manure liberally to late crops, and syringe freely.

VINES.—Grapes which are ripe, and will have to remain on the Vines for some time longer, will lose colour rapidly in bright weather, and should be shaded, but to shade foliage in full health is objectionable, so that pieces of blue or dark-coloured paper placed between the bunches and the glass is the better way. It is well known that Grapes when bottled and kept quite dark are kept in much better condition than those which are exposed to much sunlight. We still have Lady Downes' Grapes of last year in good condition. At this season Black Hamburg and Black Muscat suffer very soon after ripening. The surface of borders in the vinery, where Grapes are hanging, may be sprinkled with water during the early part of the day, which will help fruit and foliage alike; but the vinery must be free from damp during the night. If the weather should become rainy, a small amount of fire would be unobjectionable in houses with ripe fruit hanging. White Muscat Grapes require all the light possible when ripening, and many good growers tie back any leaves which exclude it, and place a piece of tissue-paper over the bunches to prevent scorching. Early ventilation is of much moment to all ripening fruit, and a close sultry atmosphere should be avoided, especially if Grapes are for winter and next spring supplies. Lady Downes' must have special attention with regard to affording air and moisture. No variety of Grape needs to have a higher temperature than 85° to 90° if there are means to ventilate freely, and it should always fall 10° or 15° during the night.

STRAWBERRIES.—Young plants for early forcing should have liberal treatment till the pots are well filled with roots. All runners should be pinched off as soon as they appear, and roots should not be allowed to grow into the substance on which the pots are stood—a firm surface of bricks or pavement prevents all trouble. Plenty of water is required by the young plants just pegged in the small pots. Young plants put out in rich deep soil last August are supplying capital runners, while older plants are doing the reverse. The soil should not be

allowed to crack on the surface of the pots, and no weeds should be allowed to exist. While in southern parts Strawberries do well when potted towards the end of July, three weeks earlier is not too soon for the far north for first crops. Early in March, Black Prince and John Ruskin are favourites. Viscountess Thury, President, and Sir Joseph Paxton for main crops are generally much valued. Many fill the fruiting pots with soil (chiefly strong loam), and place the runners in them at once. I gave up that practice some years ago, preferring to use 3-inch pots first.

THE FLOWER GARDEN.

By T. H. CRASP.

GENERAL HINTS.—In the flower garden the principal part of the planting will be finished, and now the endeavour must be to obtain free growth in the plants by keeping the surface stirred and the soil moist. Avoid dribblings of cold water, which only retard growth. It will be well to take advantage of the first heavy shower to make the final sowings of biennials, either by sowing the seed on prepared ground, where the plants are to remain, or on beds for future transplantation. The only drawback to the first is, that birds prey upon the seed with impunity, although by putting black thread crosswise over the patches they are greatly deterred. Sow seed of Brompton Stocks under hand-lights, keeping it shaded and uniformly moist till germination takes place. Another sowing of Sweet Peas and Mignonette may yet be made if a late bloom is required. Carnations, Picotees, and Pinks, will now strike readily from pipings, if placed under a hand-light or bell glass containing good sandy soil, placed in a shady position, and kept close till growth begins, but the surest way for the first two is by means of layers when the plants have nearly finished blooming. Stools of choice Pansies which have ceased blooming, and are looking shabby, may be cut down, placing a mulching of decayed manure around them, thus encouraging fresh growth, which will flower in the autumn; or the shoots may be taken off, made into cuttings, and inserted in sandy soil. Do not delay to cut back overgrown shrubs, or those which are encroaching upon each other or on the walks and turf; when pruned at this season, new growth is soon made. Privet hedges should be clipped, and Holly and Laurel hedges may be cut back with the knife, although in the case of the former the shears are more generally preferred. Box edgings should now be clipped hard, with a view of obtaining the neatest edge for the longest possible time. Owing to the showers, bedding plants have begun to make free growth; and zonal Pelargoniums, which were early planted are forming seed-pods very freely, and these should be removed or growth will be arrested, and the beds will not be filled up satisfactorily. The surface of the beds should be hoed, and left in a neat state without having recourse to the rake, spent flowers removed, grass edges clipped, lawns mowed, and the walks rolled after rain. Where edging plants of *Cerastium tomentosum*, *Antennaria*, &c., have finished blooming, they should be trimmed into shape with a pair of shears. The different varieties of *Armeria* or *Thrift* should receive the same kind of attention, cutting the flower-stems as close to the leaves of the plants as possible. Attention should also be given to keeping low, by pegging, the shoots of *Verbenas*, *Petunias*, *Ivy-leaved Pelargoniums*, and plants of similar growth, thereby affording the beds a neat appearance.

DAHLIAS.—These plants, now growing rapidly, should have all the weak and flowerless side-shoots removed entirely, and the fastenings added to as may be required. The various plants in herbaceous borders should be kept free of decaying foliage and flower-stems, and the sub-tropical plants made secure against wind and rain by staking and tying. This is the time to sow the seeds of Brompton and Queen Stocks for next season's blooming. These plants, when well grown, are beautiful border plants, which none exceed in fragrance.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

SWEET CHERRIES.—Trees from which the fruit is gathered are often infested with black aphid at this season, and should have the tips of the shoots dipped in diluted tobacco-water or other preferred insecticide, and the entire tree syringed with the same; and if no doubt is entertained as to the non-injurious quality of the insecticide, it need

not be syringed off, thus adding to the defence of the trees against future attacks. Whilst the soapsuds and tobacco-juice are safe insecticides, those which largely consist of petroleum should always be followed with a heavy washing of clean water, applied with the garden-engine or powerful syringe, or the hose, before the mixture dries on the trees.

BUDDING.—The budding of Cherries, Plums, Peaches, Pears, and Apples, should be commenced if the sap flows readily, the kinds being taken in the above order. Budding is a simple operation, the employment of which is sometimes more convenient than grafting, and may be commended in particular to the amateur, and it is advisable if suitable scions cannot be obtained. The budding is similar in its method to that adopted with Roses, and the budded shoots are left at full length till the winter-pruning, thereby avoiding the risk of the buds starting this season, and of a check to the growth of the stock.

AMERICAN BLIGHT (*Schizoneura lanigera*).—Never before have I known this pest to be so troublesome as this year, which has led me to conclude that heat and drought are favourable to its propagation. The pest, if allowed to infest young trees, causes serious, and often permanent injury to them. Therefore, no pains should be avoided in dressing them with Gishurst Compound-soap, or an insecticide consisting of soapy-water and petroleum, the latter ingredient not being applied stronger than one wineglass to the gallon of water. Whatever is used should be well rubbed into all crevices of the bark with a stumpy painter's brush, and where this cannot be got, the syringe must be made use of. The insect sometimes infests the roots, and these should be laid partly bare, and watered with soapsuds.

HINTS ON GENERAL WORK.—Finish the layering of Strawberry runners, remembering that the earlier they are planted out the heavier will be next season's crop. Finish the thinning of Apples, Pears, and Plums, and the pruning of Plums and Pears on walls, and continue to afford root waterings unless rain has been sufficiently heavy to thoroughly moisten the soil to a good depth. If Raspberries are afforded a heavy watering, the canes will continue in bearing for some time longer. Place a good mulch of litter, grass, &c., over the roots of Doyenné d'Été, and other early varieties of the Pear, which are best when ripened on the trees, so that those fruits which may fall will not get bruised. The same applies to very early Apples, of which Copeman's is the earliest I know of.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

SUCCESSIONAL CROPS.—The unusual drought greatly checked the growth of most vegetables, and even now, in the south, if rain in quantity does not soon fall, the Potatoes and other root-crops will be light. It is seldom that Cabbage, Cauliflowers, &c., have suffered so much as during the present season, and it was difficult to keep plants alive. The gardener should not fail to plant good breadths of Kale, Broccoli, and Savoy, especially the first-named. Particular attention should be paid during the next few weeks to getting these plants well established by heavy waterings, and keeping them shaded till fully established.

CARROTS.—The crops of these roots are poor in most gardens, and the growth of those sown early is almost at a standstill. Another sowing should be forthwith made, so that there may be no break in the supply, the intermediate varieties making useful-sized roots by the autumn, if the weather be at all favourable. The roots of these varieties may be allowed to remain in the ground all winter, if a slight protection be afforded them in severe weather.

BROAD BEANS.—Attention will now be needed to keep the plants free from the species of aphid which harbours at the ends of the stems, preventing free growth. For this purpose, boil 1 lb. of Quassia chips for half an hour in 2 gallons of water, adding 2 oz. of soft-soap to each gallon whilst it is boiling, and before the mixture is quite cold dip the ends in it; a second application may be needed two or three days later. Mulching and watering must also be attended to, or growth will be slow.

PEAS.—The late sowings will now be ready for staking. After staking, mulch with cow-shed manure 4 inches thick, and water heavily. If aphid infests

the Pea plants treat as for Beans. The secret in growing good Peas in hot weather is to sow thinly, heavily water the plants, and destroy aphides.

RUNNER BEANS.—The last sowing should now be made, and when staking runners, so place the stakes that light may readily reach the plants. When poles are used, they should be at least a yard apart at the top. Attend to mulching the plants well, and supplying them with liquid or artificial manure. When in bearing and in hot weather, syringe them late in the afternoon, which will assist the setting of the blossoms and swell the pods.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

CATLEYA GASKELLIANA AND **C. G. ALBA** are just about to open their first flowers, and will therefore succeed *C. Mossiae* and *C. Mendeli* at a useful time. Give them a good supply of water until the flowering period is over, when they should be gradually dried off. The old *Cattleya labiata pallida* is a very near relative to *C. Gaskelliana*, but is a little later to flower. It will require the same treatment as *C. Gaskelliana* as regards water, &c. *C. gigas* and its freer flowering variety *Sanderiana*, along with *C. Warneri*, are now making a grand display; when these finish flowering they should be carefully watered until the pseudobulbs become properly matured. Any requiring potting or rebasketing should be seen to at once, so that they get well rooted before they become inactive; any plants not needing potting will be better if they are removed after flowering to a cool and airy part of the house. If left where they have made their growth they often start a second growth, and I find a cool treatment answers best in this case. We give plenty of air about the plants, and water them once a week for a time until the pseudobulbs are properly ripened, when the water is withheld until such time as we think they require it; all Orchid-growers must in this case use their own judgment. Push forward the potting of any *Cattleya Mossiae* or *Mendeli* that have not been done, as these are now making roots, and they may get injured during this operation, if delayed. It is a good practice to have the plants sponged in soft-soapy water, to clean the dust off the leaves, also to rid them of white scales which harbour on the pseudobulbs and the underside of the leaves. When potting a *Cattleya*, always make the plant firm, so that there be no rocking about if moved. One stake may hold the plant firmly if in a small pot, but two or three will be required for a plant in a 10-inch pot. Always press the compost firmly with the hand round the plant. Less water will be needed after potting, until such time as the roots take hold of the new compost. Keep the plants fairly shaded, and a moist atmosphere around them until more water can be given. *Lælia purpurata* will now need looking over, and the potting attended to; the same compost suits these as for *Cattleya Mossiae*, always using clean pots and crocks. *Lælia tenebrosa* should be seen to as well. Keep *Lælia Boothiana* or *Cattleya lobata* on the dry side, as this is apt to make a second growth, which has not time to get properly ripened. *Cattleya Schilleriana* may be top-dressed now, and watered sparingly. This is one of the *Cattleyas* which often makes a secondary growth, but will make up and flower later on; however, if they can be kept quiet after making one growth, they flower all the better for another season. *Cattleya Trianaei*, *C. Schroderae*, and *C. Lawrenceana* in full growth must now be well attended to with regard to watering, shading, and giving air, so as to make up well-matured pseudobulbs. Besides watering the plants, it is a good practice to syringe well between the pots twice a day during the very dry and hot weather. *Dendrobium* in full growth must be given plenty of water, syringing, and a high temperature, closing the house up early in the afternoon so as to get a good, clean, and quick growth. Keep a sharp look-out for thrips and red-spider, as the weather we have had has been all in favour of these pests. Temperature for *Dendrobium*-house should read 70° to 75° by night, 80° to 85° by day, closing early in afternoon, to allow the temperature to run up to 90° or even 100°, which will do no harm.

PLANTS UNDER GLASS.

By BAILEY WADDS, Gardener, Birdsall Gardens, York.

SOUVENIR DE LA MALMAISON CARNATIONS, AND OTHERS.—The present is a suitable time to layer these plants, choosing those that have done

flowering, and not required for growing on to make larger plants. The best place for layering them is a Cucumber-pit or frame with slight bottom-heat remaining in it; or failing that, a bed in a cool-house will do very well in a season like the present. Not having either of these, a sheltered border in the open air will do; but layers root much quicker and make stronger plants on an old dung-bed. The old plants in pots, if dry, should be well watered and plunged to the rims in a bed of soil, or into the fermenting materials with a piece of slate beneath, and a mixture of sandy loam and leaf-soil in about equal parts should then be spread all over the top of the bed to the depth of 4 inches. The pots should not be placed too close together, but afford sufficient space for each layer to be taken up when rooted with a good ball of earth. The best plan is to start at one end of the bed or border, plunge one plant, say the best growths, and then proceed with another, and so on till all are done. Stout bracken or wooden pegs are the best; metal pegs sometimes cause canker. Care should be taken in cutting half-way through, just below a joint, to cut upwards to the next joint or node, and in bending the shoot, not to break it off. After having layered the required number, afford the bed a good watering, but do not keep it too wet afterwards, or the plants will turn yellow. Slight shade from bright sunshine, and a moist growing temperature, are necessary points to attend to; and greenfly must be killed by fumigation, or syringing with Quassia-water, or a solution of nicotine-soap. Plants in 6 or 8-inch pots that have passed out of flower, and which are intended to be kept for another season, should be re-potted into pots of a larger size—say, 10 and 12-inch pots, if care be taken with the watering at first, and to keep them clean. The pots should be well-drained, and the compost consist of turfy-loam, leaf-mould, and silver-sand, with the addition of some decayed dry cow-dung or fertilising moss, a good portion of which may be placed over the crocks. The leaf-mould used should be dry, and well-prepared from leaves several years old. The varieties, *Madame Arthur Warocqué*, scarlet, and the red variety, are more hardy and easier of cultivation than the larger-growing varieties. The crimson, the pink, and rose-coloured, and *Lady Middleton*, are very beautiful varieties just at present, the weather having been suitable for them. Most of the tree varieties may be layered out-of-doors, and the layering should be done as soon as the bloom has gone over. Useful varieties are *Germania*, *Countess of Paris*, *Miss Jolliffe*, *Purity*, and *Winter Cheer*. Cuttings of *Mrs. Sinkins*, and the double varieties of the old white and other Pinks, should be put in, in quantity, the plants to be grown in 5 and 6-inch pots for forcing in the winter and spring. Five or six cuttings put into a large 60-pot, and placed in a moist place, will soon strike root. It should be borne in mind that all Carnations and Pinks when grown in pots, to be objects of beauty, should be afforded liberal applications of plant-food. I find that a change of plant stimulants to be the best in practice, and I never allow any greenfly to remain on the plants. Afford abundance of air night and day. For the destruction of wire-worms and eel-worms, dissolve $\frac{1}{4}$ lb. of nitrate of soda in 4 gallons of soft-water; let the plants get a little dry, then stand the pots in it up to the stem of the plants for ten minutes—use a pail for the purpose.

CHRYSANTHEMUMS.—For the production of stout useful plants for decoration or for cutting from, cuttings 4 or 5 inches long should be taken from the leads of strong young plants, and struck singly in 5 or 6-inch pots in a cold frame. The pots should be clean, with good drainage, on which some turfy-loam should be placed, and the pots filled to within 1 inch of the rim with sifted soil, with half-an-inch of silver-sand put on the top. Place the cold frames on a bed of coal-ashes, shading the cuttings with a thin wash of lime. Having pots and labels ready, take them to the plants, one man writing the names on the labels, and another taking the cuttings and inserting them in the pots. There is no need to plunge the pots, but after having watered them close the frame, which must be shaded with mats, as well as limewash for a time during bright weather. The cuttings must not flag at any time, and should be watered well, and at times sprinkled with a fine-rose pot. Keep close till rooted, then ventilate gradually at first, and apply less shading until full exposure becomes safe. Plants struck at this time and in this way are very useful, and the plants from which the shoots were taken will soon start anew, when one or two breaks should be selected from each.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, JULY 5 { Royal Botanic Society: Evening
Fête, 8 to 12 p.m.
FRIDAY, JULY 7—Dundee Horticultural Society.
SATURDAY, JULY 8—Royal Botanic Society.

SHOWS.

SATURDAY, JULY 1 { Great Rose Show, National Rose
Society, at the Crystal Palace.
TUESDAY, JULY 4 { Rose Shows at Canterbury, Glou-
cester, Bagshot, and Diss.
York Florists third Show at York
(two days).
WEDNESDAY, JULY 5 { Crydon Horticultural, Hereford
Rose, Farnham Amateur Rose and
Horticultural; Lea, Blackheath,
and Lewisham Horticultural (two
days); Ealing Horticultural.
THURSDAY, JULY 6 { Rose Shows at Bath, Farnham,
Manchester, and Norwich.
Chichester and West Sussex Horti-
cultural.
FRIDAY, JULY 7—Ulverston Rose.

SALES.

TUESDAY, JULY 14 { Imported Orchids at Protheroe &
Morris' Rooms.
FRIDAY, JULY 7 { Great Sale of imported Orchids at
Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSU-
ING WEEK, DEDUCED FROM THE OBSERVATIONS
OF FORTY-THREE YEARS, AT CHISWICK.—63°.

The Season, and its Lessons. THE effects on the crops conse-
quent on the advent of rain after
the prolonged heat and drought,
will be watched with intense interest both by
physiologists and gardeners. In the case of fruit
trees, we may well anticipate that the crops will
be light. On all sides we hear of the flowers
drying up and falling almost ere they were set,
except in some cases where the precaution
was taken to mulch early and heavily, in which
cases it is possible to tell exactly how far the
influence of the mulch extended. The heat and
drought that were so detrimental to the flower-
buds seem to have been thoroughly appreciated
by many insects, who have completed the devastation brought about by unfavourable climatic
conditions.

The growth of trees in general has been severely
checked, the shoots formed have been contracted,
the leaves are stunted, and in many cases they
have shrivelled and fallen before their time,
particularly in the case of old trees of diminished
vitality, and specially when growing on dry,
gravelly or sandy soil. Flowers are small, and
those produced on the young wood of the year,
such as Roses, have been checked or rushed
into bloom weeks before their proper time.

These are general, but perhaps not universal,
results. Variation must have occurred according
to local conditions, and those gardeners who have
had the happiness to have had command of an
adequate water supply, have managed to keep
up their supplies of vegetables and Strawberries,
and other fruits, in a manner which their less-
fortunate brethren must have envied. As to
strawberries, we have heard several complaints
about the non-production of runners; but there
is still time for this.

In addition to these sources of differences,
there must have been similar variations conse-
quent on the different constitutional endowments
of particular varieties. Some varieties must
have maintained themselves against adverse
conditions much better than others. What are
those varieties? This is a question which we
trust our readers will give us an opportunity of
answering.

As to the Roses, the forthcoming shows will,
no doubt, afford some indications, but it is
obvious that the results so obtained must be

balanced against the pains which the enthu-
siastic rosarian takes—pains which others, less
enthusiastic, or with fewer opportunities, can-
not rival. The eager controversy which last
year agitated the minds of rosarians as to
the number of trees grown by amateurs
desirous of exhibiting, and the consequent
balancing of means and opportunities might
now be extended, and cognisance be taken
of the supply of water available to rival
competitors, the length of their hose, the capa-
city and the number of their water-pots! The
requisite adjustments could then be made, and
the decisions of the judges be based on more
equitable conditions. But imagine the heated
discussions that would take place—those which
occurred in reference to the proposal to alter the
date of the shows would be trifling in compari-
son. It would be interesting at this period, and
in this very exceptional season, to know the
present views of the gentlemen who were so
anxious to alter dates to suit the presumed
general convenience. If we could but know, say,
only six months in advance what sort of weather
we were likely to encounter, it is evident we
could make our Rose and other shows movable
feasts; but as things are, it seems best to con-
tinue to select some medium date when the
greatest amount of perfection may, on the
average of years, be anticipated.

It is desirable not only to gauge the effects of
the drought and heat as we see them now, or in
the immediate future, but also to look ahead and
consider what are likely to be the consequences
of the warm moist period upon which we seem
to be entering. No doubt in many cases trees
and plants which have been undergoing a forced
period of rest will start afresh, as if a second
spring had come, and we shall have an abun-
dant development of new shoots, and a crop of
autumnal blossoms. The autumnal Roses stand
a good chance of being more numerous and of
better quality than their summer sisters. All
this will be interesting to the physiologists, but,
as a rule, it will not be of much value to the
gardener, for it will simply discount, on dis-
advantageous terms, the produce of the next
spring. The farmer, however, who has been so
severely tried, may now reasonably hope for a
lattermath, and there is time for the development
of a good root-crop.

The relation of the abnormal season to practice
is also a most important thing to note. Is it
necessary this season to indulge in much pinch-
ing and summer pruning beyond necessary
thinning? Has not Nature herself afforded a
sufficient check to development already? This
is a point upon which experienced practitioners
might profitably enlighten their juniors.

Another consequence of the present weather
to which we may look forward is, the advent of
the Potato-rot. A moist warm atmosphere
favouring the growth and development of the
fungi which prey on the Potato plant, set up
fermentation in its tissues, and engender rot.
As we have so often pointed out, we are not so
powerless against this pest as once we were.
The Jensen system of high-moulding, or the
judicious use of carefully-prepared Bordeaux
Mixture, may certainly be relied on to diminish
and palliate the evil to a very large extent.
For cottagers and small growers the high-
moulding system is probably the most desirable
method, as it does not involve any dabbling with
chemicals—a dangerous matter to trust to un-
scientific labourers. All that has to be done is
to mould-up the haulm so that it shall not be, as
now, in a furrow at the top of a ridge, but that
the ridge shall be sharp at the top, and the

haulm project, not from the top, but from one
side of the ridge, a little below the top. The
ridge will require banking-up once a fortnight
or so, till lifting time, and it demands no
more skill than is involved in handling a spade.
Even when the disease has been very far
advanced, and all prospect of a crop seemed
ruined, we have seen excellent results follow.

For growers on a large scale, who can easily
procure the necessary materials and apparatus,
and who can rely on the services of some compe-
tent supervisor, no doubt the spraying the haulm
and both sides of the leaves with Bordeaux
Mixture affords the best results. It may be well
to repeat the formula which has been found
most generally useful, and to counsel those who
make use of it to do so in the first instance ten-
tatively, and to begin with a dilute solution;
but even if the haulm is injured by the mixture,
the tubers will not be affected. In the prepara-
tion of the mixture, so far as we have seen, the
great point is to secure the due action of the
lime. If that is of inferior quality, or deficient
in quantity, the results are correspondingly
unsatisfactory. Better too much than too little
lime. Technical educators could not do better
service just now than in instructing their
hearers how to mould their Potatoes, or how to
prepare and how to use the Bordeaux Mixture.

BORDEAUX MIXTURE.—The simplest formula
is the following:—Sulphate of copper, freshly-slaked
lime, of each 5 lb.; water, 50 gallons. Dissolve
the sulphate of copper (blue vitriol) in water in a
wooden tub. Mix the lime to the consistence of
cream in another vessel. Add the lime-water
gradually to the copper solution, keeping it
well stirred. Lime should be added till the
solution ceases to have a blue colour when
looked at through a depth of 2 to 3 inches.
The object is to neutralise the acid of the copper-
sulphate, and to obtain a neutral oxide which does
not burn the leaves. The reader is referred to the
communication to the Scientific Committee of the
Royal Horticultural Society in July last (see
Gardeners' Chronicle, August 6, 1892, p. 162). The
properly-prepared Bordeaux Mixture may be used
with a fine-rosed water-can, but it is much better to
use a spray-pump. Care must be taken to put the
copper-salt in the first instance into a wooden tub.
When the mixture is properly made, and the acid
neutralised by the lime, the solution may then be
placed in metal cans or pumps without risk of
injuring them.

**THE ALBERT MEDAL OF THE SOCIETY OF
ARTS** for the present year has been awarded to Sir
JOHN BENNET LAWES, and a like Medal to Dr. JOHN
HENRY GILBERT, "for their joint services to scientific
agriculture, and notably for the researches which,
throughout a period of fifty years, have been carried
on by them at the experimental farm, Rothamsted."

ROYAL WEDDING.—Messrs. WILLS & SEGAR
have received the royal command to supply the
wedding bouquets on the occasion of the marriage
of H.R.H. the Duke of York and H.S.H. the
Princess MARY of Teck. The same firm has also
received instructions to decorate the breakfast
table at Buckingham Palace on the occasion of
the wedding.

THE GHENT QUINQUENNIAL.—We have received
a series of photographs of this Exhibition, a report
of which was given in our previous volume. Since
that time, the great Paris Show and the Temple
Show of the Royal Horticultural Society have taken
place. These, it is true, are annual exhibitions; but
when we look at the extent, the variety, the interest,
and specially the grouping, at the Ghent Show, as
evidenced in the photos before us, we feel how very
much better our Temple Show ought to be. A grand
opportunity is afforded to the Royal Horticultural
Society to make a really fine, well-arranged, and

instructive show at the Agricultural Hall; and though it is too early for a Special Fruit Show, we yet hope the Society will rise to the occasion, and not put the public off with the worn-out, stereotyped arrangements—or want of arrangement.

GREAT YORK GALA, JUNE 14, 15, AND 16—In our report of this exhibition, mention was made of an Alpine Garden designed and planted by Messrs. JAMES BACKHOUSE & SON, York, and on the recommendation of the judges, a Gold Medal was awarded by the committee to this very artistic floral work.

BONES IN THE CROCKING OF CHRYSANTHEMUM POTS.—A correspondent writes, warning growers of the Chrysanthemum who may have used broken bones, to turn out the plants, and ascertain

poisonous symptoms, in a few instances ending in death, have been caused by preparations of Male Fern. Hitherto the active constituents of the Male Fern root, on which its poisonous properties depend, have not yet been absolutely determined; but in the *Archiv. f. Exp. Path., &c.*, xxix., p. 7, a recent issue, these constituents are carefully described by E. POULSSON. He succeeded in isolating amongst them two substances, namely, filicin and filicic acid, which he considers to be the main causes of poisonous symptoms arising from taking preparations of Male Fern, and upon these the vermifuge properties of the root when given in medicine depend.

THE FROST IN CHINA.—In connection with the severe cold experienced in Hong-Kong during

just before the autumn Rice harvest, severe cold and rain spoiled a large portion. One-third was lost, and Chinese speculators are said to have lost no time in buying up and shipping to Hong-Kong, Hainan, and Pakhoi, all the available stocks at Wanduih, the great Rice centre.

SWEET PEAS AT CHISWICK.—Visitors to the Chiswick Gardens on the occasion of the show there on July 11, should not miss the collection of Sweet Peas which will be then in full perfection. They are grown in rather an out-of-the-way corner, and might be overlooked. The varieties are chiefly from Mr. ECKFORD, who has done so much towards popularising the flower and adding to the store of good kinds already in the trade. The large number of varieties will be thoroughly inspected by the com-

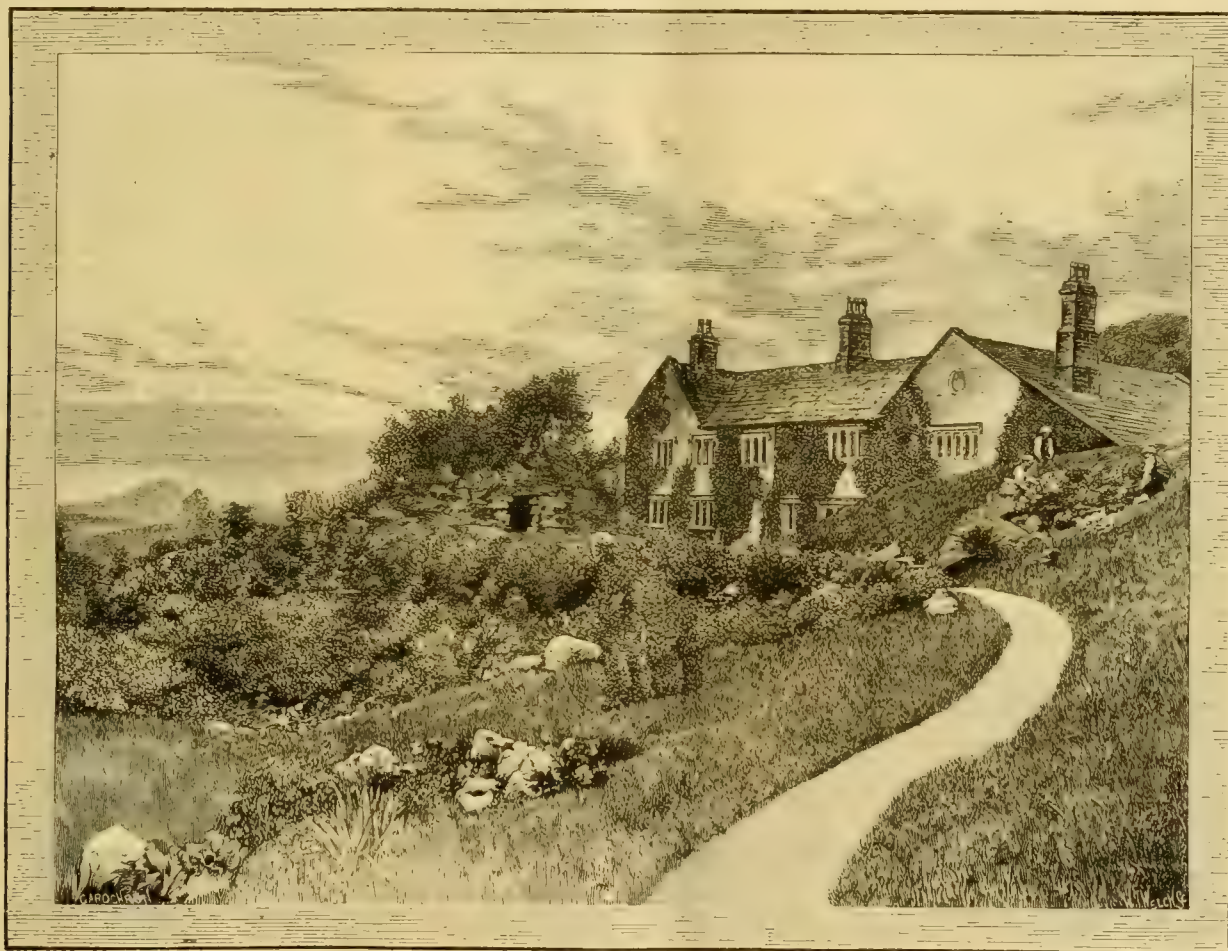


FIG. 3.—VIEW IN GARDEN, BEAR PARK, WENLEDALE. (SEE P. 8.)

the condition of the crocking and the roots, as some bones are on the market which turn putrid after being in the pots a short time. If the plants, he says, are put in clean pots supplied with sweet drainage materials, not much harm will be done. In one month from the time of putting them in the pots, the bones have become putrid. Those who have not yet finally potted their plants should test the condition of the bones they intend to use before putting them into the pots.

NEWCASTLE-ON-TYNE SUMMER SHOW.—From our advertisement columns it will be seen that the Newcastle Summer Show will be held in July, in conjunction with the great show of the Northumberland Agricultural Society, and with the attractions doubled we have no doubt it will be a success.

THE POISON OF MALE FERN.—During the past ten years several cases have occurred in which

last winter, and noticed recently in our columns, the following extract from a report by Mr. Acting-Consul FRASER to the Foreign Office, dated Kiungchow, March 22, 1893, will be of interest. The value of imports from outside China was lessened in 1892 by £3300 as compared with 1891, for 614 tons less rice was imported from abroad. This indicates bountiful harvests in 1892. This port and Hainan in general are not visited with the extremes of heat and cold which sometimes afflict their near neighbours, and are so injurious to agriculture. During the winter, when Hong-Kong, Swatow, Pakhoi, and other tropical places near were in ice and snow, the thermometer at Kiungchow only went down to 37° Fahr., which was for Hainan an unprecedented cold, and did a considerable amount of mischief. The Sweet Potato-fields presented a remarkable appearance with their graceful leaves blackened, as if fire had passed over them. The Sugar-cane also suffered. In Tonkin,

mittee, and the best singled out. From what we can see, there is need of considerable sifting, but many very beautiful varieties are in the collection, the flowers ranging from pure white to scarlet. Considering the dryness of the season, they are in good health, and constitute a "trial" of more than ordinary interest.

A GIGANTIC PEA.—A correspondent, H. BOZ-JANOVITZ, nurseryman, Ada, in Hungary, sends us some well-filled Pea-pods, which are of enormous size, i.e., they are 1½ inch broad at the middle, and 6 inches long, without parchment or thread, sweet and excellent in flavour. The haulm grows to a height of 4½ feet, and it is very prolific, ripening in Hungary in June, therefore an early variety. It was found in the possession of a farmer-gardener in Servia, who had cultivated it for thirty years. We are promised a supply of new seed in this country next year.

HORTICULTURAL EXAMINATIONS.—The following are the questions put at the recent examination under the auspices of the Royal Horticultural Society, and the results of which were announced in our previous issue. The candidates were of all ages, from 15 to 40, and almost equally varied as to their attainments and their means of obtaining information:—

HIGHER GRADE.

*Eight Questions ONLY to be answered;
any eight the Candidate prefers.*

1. Explain the mode of formation of the soil.
2. What evils arise from stagnant moisture in the soil; and why is access of air necessary to the roots of plants?
3. In the selection of a site for the formation of a garden, what are the principal conditions to be observed? Describe those of most importance.
4. Describe the usual system of rotation of cropping in the kitchen garden, and what are the advantages derived therefrom?
5. Mention a few common weeds which usually grow—
(1) on clay soils;
(2) on sandy soils;
(3) on limestone soils.
6. Explain the ill effects which arise from too deep planting.
7. How may a succession of vegetables be obtained during every month in the year?
8. Explain the process of grafting, and state what objects are served by it.
9. By what circumstances is the work of the leaves impeded?
10. Why is a combination of various substances in manure generally preferable to the application of one substance alone?
11. Describe the method of preparing the ground for Strawberries; the preparation of the runners; also the best time and method of planting.
12. Give some illustrations where fungi, so far from being injurious, contribute to the welfare of the plant on which they grow.
13. What are the relative advantages of training fruit trees on the espalier system, and on walls?
14. What variations occur in the mode of growth of a cutting?

LOWER GRADE.

*Eight Questions ONLY to be answered;
any eight the Candidate prefers.*

1. On what circumstances does the productiveness of the soil depend?
2. Describe the method of preparing the ground for fruit trees, and the method of planting standard, pyramid, and bush trees on free, and on dwarfing stocks.
3. In laying out a garden, what are the first operations to be performed? Describe them in detail.
4. What do plants derive from the soil, and how do they take up nourishment from it?
5. What purposes are served by digging and hoeing?
6. What are the best manures for fruit trees? Describe the best way of applying them.
7. Describe the method of preparing the ground for such crops as Carrots, Beet, and Parsnips.
8. What are the circumstances favourable to the germination of seed?
9. What is understood by wireworms, and what are the best methods of dealing with them?
10. What are the conditions most favourable to the growth of Asparagus?
11. Why is blanching required in the case of Seakale, Celery, and some other crops?
12. Some plants produce their flowers from the old, others from the new wood. Mention the method and season of pruning adapted to both circumstances.
13. At what season of the year does the Celery-fly attack the plants? How may it be prevented?
14. Describe the system of culture by which Cucumbers can be grown out-of-doors in England at a profit.

COMBERMERE ABBEY.—Messrs. E. & H. LUMLEY, of St. James's Street, in conjunction with Messrs. OSBORN & MERCER, have received instructions from Viscount COMBERMERE to sell the Combermere Abbey Estate, in Cheshire and Shropshire, and the sale will take place at the Mart on July 11. This estate comprises about 9000 acres, chiefly old pasture used for dairying purposes, and the rental is about £16,500. The abbey is said to have been built in 1133, and, although the exterior has been much altered, parts of the interior remain in their original condition, and some of the walls are 5 feet in thickness. After 400 years in the possession of the Benedictines, the estate was granted by HENRY VIII. to Sir GEORGE COTTON. The abbey stands beside a natural lake, about 2 miles long and 134 acres in extent, and is surrounded by 1000 acres of finely-timbered park. The abbey is situated about 3 miles from Wrenbury Station, which is on the estate, and 12 miles from Crewe.

EARLY HARVESTING OF PEAS, ETC.—We gather from the *Devon and Exeter Daily Gazette* of June 27 that, during the week ending June 24, at

Axminster, Messrs. VEITCH harvested 3 acres of their new garden Pea Exonian, and sowed a few rows of them again, thus making two crops of Peas in one season. Some days ago, Mr. VEITCH picked some Royal Apricots from an open wall, which had received no protection of any kind.

BULBOUS IRISES.—Professor MICHAEL FOSTER has republished, in an extended form, the lecture on this subject which he delivered before the Royal Horticultural Society. It is illustrated with numerous woodcuts, and a descriptive list of species, with an artificial key to facilitate their determination, is given. We need hardly say that this is a publication which all lovers of bulbous Irises will yearn to possess. It may be had by Fellows for 2s. 6d., by non-Fellows at 5s., from the offices of the Society, 117, Victoria Street, S.W.

PROLIFEROUS STRAWBERRIES.—From Lord RICHARD BROWNE and from Mr. DAVES we have received specimens of Strawberries in the condition



FIG. 4.—A PROLIFEROUS STRAWBERRY.

figured above. The explanation is simple. The edible portion of the Strawberry is the top of the flower-stalk, which dilates and becomes succulent. The true fruits or seed-vessels are what most people call the seeds. They do, indeed, contain the seed, but are in reality carpels. Carpels, as all botanists know, are modifications of leaves. It is, therefore, not surprising that the carpels, as in the case before us, develop into miniature leaves. Again, as the receptacle is a modification of the stem, it is not wonderful that it should, as in this case, produce buds and little branches, some of which even produce a flower at the extremity. The cases are interesting in relation to the famous Plymouth Strawberry alluded to on various occasions in our columns, and once thought to be extinct, but which is now widely diffused under the name *Fragaria muricata*. We have specimens growing received from Canon ELLACOMBE and Mr. F. G. WILSON.

CEDAR-WOOD IN CARACCAS.—The wood of the so-called Cedar, apparently *Cedrela odorata*,

seems to be an important article of export from Caraccas to La Guaira, where Consul BOUTON, in his report to the Foreign Office, tells us enormous quantities are stored as compared with the requirements of Caraccas, where all the Cedar is used. Prices, however, were well sustained during the year, because the cost of the Cedar is constantly increasing on account of the greater difficulties experienced in bringing it to market. The places where Cedar is cut are very distant already, and in consequence a considerable amount of money and labour has to be spent on the sometimes almost impassable roads, and often the Cedar has to remain a whole year where it is cut, if rain does not fall sufficiently to provide the small rivers with water, to take it down to the lake.

PROFITABLE GARDENING.—The question of cottage gardening, says *Reynolds' Weekly Newspaper*, is becoming one of increasing interest and importance with the growth in the number of allotments and small holdings. The extensive ignorance as to the proper mode of cultivating simple vegetables, and on such subjects as poultry and bee-keeping, is appalling. It is as disgraceful to this country as the ignorance with reference to simple cookery. What can be more disheartening than to find the villager of England buying eggs, bacon, Potatoes, Onions, honey, and such like things, imported from abroad, when, by a little industry, knowledge, and intelligence, they could be produced in his own back garden. It is as easy to grow a Strawberry as a Cabbage, when one knows the easily-understood separate treatment. Special attention ought to be paid to lessons in agriculture in the elementary schools in the rural districts, and the technical schemes of the various county councils ought always to embrace lessons in planting, sowing, cottage-gardening, and cookery—not elaborate scientific schemes, but plain, simple practical directions such as anyone could easily understand.

EULOPHIELLA ELISABETHÆ.—Commerce has its romance as well as Science. If any doubt be entertained upon the point, let the reader cast his eye upon the enclosed paragraph from a circular announcing the sale of a consignment of this very beautiful and remarkable Orchid, at the instance of Messrs. F. SANDER & Co., on July 7, at Messrs. PROTHEROE & MORRIS' Rooms. Astonishing as the statement is, there is no reason to doubt its veraciousness:—

"Respecting *Eulophiella Elisabethæ*, M. HAMELIN, in a recent letter to us, says:—'Excepting young and very small plants, no more *Eulophiella* are to be found, and the plants left will be guarded by my brother-in-law until they may be wanted by me. At least several years must elapse before these small plants are large enough to gather. Amateurs of this superb Orchid may be sure that no plants can or will be imported. I can guarantee that no man can collect them. My brother-in-law's will is absolute in the country of the *Eulophiella*, and from three years' exploration I do not believe this plant exists anywhere else in this terrible country. The difficulties of travel and the expenses are enormous. I have had great dangers to encounter, although I had at my command hundreds of men. If an amateur pays 100s. for a plant of *Eulophiella*, he owns a great prize for a trifle of cost—if consideration is taken of the great mortality among my plants, and the loss of many of my packages in a terrific storm at sea, and could one only know the sacrifice in human life that this plant alone has cost. We were constantly harassed by night, especially by the *Protoproterox madagascariensis*! (the Madagascar lion), which lives in trees, and preys on all living things. It is ferocious in the extreme, and one of its favourite haunts was among the tufts of the *Eulophiella*. It is to this animal I owe my relation to Moyambassa. This chief sent his brother-in-law with me as a guide and protector, but in an encounter with a lioness, this brave young chief had the flesh torn from his shoulders and back, and died. I was offered the alternative of marrying his widow, or being greased and burnt; but I chose to marry the widow, and ate salt with the man whose slightest wishes are immediately executed!"

PUBLIC GARDEN AT HACKNEY.—The Metropolitan Public Gardens Association have been the means of securing for the people of Hackney the opening of the garden in St. Thomas' Square, Hackney. The garden is about 1½ acre in extent, and belongs to the trustees of St. Thomas' Hospital. As they have, at the present time, five wards un-

occupied for want of funds, it will be seen they had no money to expend on beautifying the garden in St. Thomas' Square. Nevertheless, they willingly handed it over to the Hackney District Board of Works for the purpose specified. On Thursday afternoon, June 15, the formal opening took place by the Countess BROWNLOW, who was accompanied by the Earl.

A BOTANICAL GARDEN.—Messrs. L. RICKETTS and J. CAMERON have, states the *Madras Weekly Mail*, visited the Nundydroog Hills, with the object of establishing a botanical garden, as a branch of the Lal Bagh. Nundydroog is 4,856 feet above the level of the sea, or about 1,826 feet higher than Bangalore, the thermometer ranging during the hottest part of the year, 65° in the early mornings, while in Bangalore it ranges from 76° to 90°. During the hottest part of the day, the thermometer in Nundy is reported to have ranged no higher than 77°. The climate, consequently, is far superior to the Shevaroy's, and very nearly equal to that of Coonoor.

GRAMMATOPHYLLUM SANDERIANUM.—One of the sights of the Victoria-house at Kew at the present time is the monster plant of this Orchid, presented to the Royal Gardens, Kew, by Messrs. F. SANDER & Co., by whom it was imported. The gigantic pseudobulbs or stems, which are 7 to 8 feet in height, and 3 inches in diameter, have no slight resemblance to so many snakes. From the base of the stems rise above the surface of the soil, or of the *débris* in which the plant is growing, a forest of slender roots, which give off short branches at right angles, and each of which ends in a sharp spine. It is possible that these upward growing roots are associated with the habit of feeding on decaying vegetable matter, and that the plant is thus a "saprophyte." On p. viii., vol. xiii., we give a reduced figure of the plant, and fig. 5 is a representation of some of the roots of natural size.

PUBLICATIONS RECEIVED.—*List of Works on Gardening and Horticulture, Forestry, Landscape Gardening, Orchids, &c.* (JOHN WHELDON & Co., 58, Great Queen Street, London, W.C.)—*Art Out of Doors*, by Mrs. SCHUYLER VAN RENSSELAER. (T. FISHER UNWIN.)

PLANT PORTRAITS.

DRACÆNA THALIOIDES, fol. var., *Illustration Horticole*, t. 175.—This is the *Dracæna Sanderiana* of English gardens. What its true name and position may be is not at present known with certainty.

EUCALYPTUS GOMPHOCEPHALA, *Revue Horticole*, June 16.

GENISTA ANDREANA, *Revue de l'Horticulture Belge*.

NELUMBium SPECIOSUM, *Garden*, June 3.

SAINTPAULIA IONANTHA, *Garten Flora*, t. 1391; *Gardeners' Chronicle*, June 10, 1893.

THUNBERGIA GRANDIFLORA, *Garden*, May 27.

AZOLLA PINNATA.

(Fig. 6.)

WE have received from Mr. Greenwood Pim, and from Mr. Burbidge, a copious supply of fruiting specimens of this elegant little aquatic. We may, perhaps, best describe its general appearance as that of a diminutive and floating *Selaginella*, its small crowded overlapping leaves having much the appearance of those of that genus. Their surface is velvety, and as they become old they assume a pink, and ultimately a brown appearance, which is very charming. The capsules, which nestle in the axils of the leaves, are of two kinds. The males are flask-shaped, more or less flattened, and pointed, with numerous globular-stalked sporanges in the interior, and which contain the male spores. The female capsules are smaller, ovoid conic. The life-history of the two sets of spores, and the resultant fertilisation, are

very interesting to the botanical student, and have been dealt with by Strasburger, and in the June number of the *Annals of Botany*, just to hand, by Prof. D. H. Campbell, of the Leland Stanford

it was placed two or three months ago in a shallow peaty pool, which is now almost dry, there being only a few inches of water. In this the plant is producing fruit on almost every fully-developed individual. *Greenwood Pim.*"

HOME CORRESPONDENCE.

GARDEN PINKS.—Mr. Douglas mentions in the *Gardeners' Chronicle*, vol. xiii., p. 744, that he has managed to strike Pink cuttings without the aid of glass. So have I, many times; indeed, it is doubtful whether the glass covering is of material use, provided the situation in which the Pink cuttings are inserted is a shady one, and the soil sandy and porous. In such a position I have not found it at all difficult to root cuttings of Pinks of many varieties. It is so very easy to obtain stocks of these by taking the precaution to make the cuttings at the right time. The best seems to be just when the flowers are dying off, as it may be in other cases too soon, and the cuttings too sappy or too late, and the wood too hard. However, from the end of June till the middle of July is an excellent time, although this year, Pinks like everything else, are earlier rather than later. Pink cuttings will need very little making, if sharply pinched off; that is frequently enough; but it is very little additional trouble just to trim off the base of each with a sharp knife, and dibble them into sandy soil so fast as made. If the position be beneath a north wall, other shading is not required; but if the position be sunny, then some artificial shading should be furnished during the heat of the day, until roots are being made. We have now such a large number of sweet and beautiful Pinks, that a good collection may easily be had in any garden, not the large bursting flowers of the Mrs. Makins' type, but smaller and very profusely-borne ones, which are by far the best. Ordinarily, gardens furnish at the most two or three varieties. There should always be found from a dozen to twenty varieties. Pink plants the first year from cuttings, sometimes disappoint in not producing much bloom. They are engaged in establishing themselves then, but the second year they will bloom grandly. It should be the aim of gardeners not to foster old ragged clumps, but to have every year several scores of two-year-old plants to bloom profusely. *A. D.*

EARLY FRUITS.—When at Nettlecombe Gardens on the 19th, Mr. Elworthy told me he had gathered Peaches from trees of Alexander on the open wall—a thing he had never before been able to do. The flavour of the fruit was excellent. At the village of Alcombe, near Minehead, on June 24, Apricots and Citron de Carmes Pears have been gathered in a ripe condition. Everything thereabouts is very early, but the vegetation is suffering from the continued drought. Minehead is naturally an early place, and large quantities of Potatoes are grown there for shipping to Wales. *T. H. Slade.*

—It may interest you to hear that I picked a full-sized and quite ripe Alexander Peach yesterday (June 25) from a tree five or six years old on an open south wall, and there are several more very nearly ripe. *T. Woodham Mott, Much Hadham, Herts.*

ROOT-PRUNING.—What are the results of root-pruning in a season of drought like the present? During the last few years I have planted some 200 Apple trees, and carefully tended them, so far as my ability went, on the newest principles—the result this year—failure of crop. In February I was congratulating myself on a magnificent crop, the trees showing bud wherever they could, and the bloom was thick and strong. Owing to the hot, sunny, dry days that we had, a good deal of this failed to set, but if even one-quarter had set there would have been plenty of thinning to do. Much of the bloom dried up and shrivelled before setting; nevertheless a fine set was secured, and I looked forward to a grand crop. For some time these trees, which are now six or seven years old, had, when the growth was over luxuriant, been root-pruned, and the roots shortened back to about 2 feet from the stem, and the ground made up with good loam and brick-rubbish, so as to encourage good fibrous roots, thus checking over-growth and encouraging fruit-bearing; but the drought set in, and as I was not prepared to treat all these trees as pot-trees, and give copious supplies of water continually, the result has been dropping the fruit, and a plentiful crop of red-spider. Now, would not the result this year have been much better if I had left the roots to Nature, and allowed them to extend and gather



FIG. 5.—AERIAL ROOTS OF GRAMMATOPHYLLUM SANDERIANUM. (Real size.)

For figure of the plant we refer our readers to p. viii of the Index to Vol. XIII, published with this issue.

University, California. The female capsules in the specimens sent are barely ripe. We may have another opportunity of examining them later on. In the meantime, we append Mr. Pim's letter: "I enclose herewith specimens of *Azolla pinnata* (qy., caroliniana), which



FIG. 6.—AZOLLA PINNATA.

are fruiting abundantly, an occurrence which is, I believe, rare in Great Britain and Ireland, though not uncommon abroad. The plants have been in the open air for a couple of years, at Mr. Walpole's garden, at Mt. Usher, co. Wicklow, and increased so much as to become quite a nuisance. A quantity of

moisture from a larger extent of the surrounding soil? Are we getting too artificial in the culture of fruit for such a season as this? I should be very glad to hear the experience of others on this subject, but from the result of this year I think root-pruning may be carried too far, and that the result may be loss of crop, unless one is prepared to treat the trees as pot trees, and water as such. For, of course, if the roots are cut back to, say, 2 feet from the stem, the tree is practically in the same position as in a 4-foot pot or tub, as the roots have not had time to push out into the new soil; and if these trees had been in such pots, they would have required copious watering at least twice a week during such weather as we have had the last three months, which, of course, would not be possible in a large orchard. I think this is a matter in which some of our fruit-growing experts should give us their opinions. [We think so too. Ed.] *Philip Crowley, F.L.S., F.R.H.S., Waddon House, Croydon.*

VINEYARDS IN SOUTH WALES.—Reading an account in the *Gardeners' Chronicle* of June 24, p. 748, from the *Wine Trades Review*, about the earliness of the French Grape crop, I am reminded of the Castell Coch and Swanbridge vineyards belonging to the Marquis of Bute, which I saw lately. These vineyards are cultivated according to French methods, and give one the idea of a Hop garden. The Vines are very healthy, free from disease, and heavily cropped. Should we get autumn weather favourable to the ripening of the Grapes, the result will doubtless prove very satisfactory. The wine made here is excellent, as one may assume to be the case by the prices obtained for some of it at recent sales. The management of the vineyards by Mr. A. Pettigrew leaves nothing to be desired. *T. H. Crisp.*

BONES AS DRAINAGE FOR CHRYSANTHEMUMS IN POTS.—A few days since, a member of the National Chrysanthemum Society wrote to say that the plants of Chrysanthemums he was growing for exhibition appeared to be quite ruined, the broken bones he had employed as drainage to the pots at the time of the final potting, three weeks previously, having become rotten and putrid, alive with maggots, and emitting a most noisome stench. He had taken the precaution to procure the bones from a well-known firm, and when received and in a dry state, they appeared to be an excellent sample. His object in writing to me was to get the fact of his mishap made public, in the hope that it would deter others who had not finally potted their plants from making a similar experiment. The matter appeared to be one of so much importance that I sent the letter on to an expert, Mr. Norman Davis, of Camberwell, and asked him if he could suggest a remedy. In his reply, Mr. Davis said that such experience is unfortunately by no means uncommon, as he is continually hearing of plants of Chrysanthemums being spoilt by the injudicious use of compounds or material totally unfitted for the purpose for which it is recommended they should be employed. There is no doubt but that in this case the bones had been imperfectly prepared, or they would not have so soon become putrid. So far as the presence of maggots is concerned, they would cease to exist, but it is imperative that the bones be got rid of. There is no better remedy than to repot the plants, replacing the bones with a mixture of broken charcoal and old lime-rubbish, such as old plastering, as the presence of these in the soil will have a tendency to sweeten it. In addition, Mr. Davis advises watering the plants as soon as they are re-potted with luke-warm water, dissolving in each gallon employed half an ounce of common washing soda; this operation will tend to clear away any particles of sour fatty substance which may be adhering to the roots; and then there is every probability the plants will start into a healthy growth. Bones should never be used as crocks for drainage; as, even when they have been properly prepared, they are liable to ferment, and foster the development of maggots. When mixed with the potting-soil, they are likely to prove advantageous. It is well to remember that many of the compounds sold as artificial manures need to go through a process of fermentation before the gases they contain can be made useful to the plants, and especially is this the case with the various preparations of fish, erroneously termed guano. Mr. Davis regards the proper crocking of pots as a matter of great importance, and he points out there is a tendency in growers of Chrysanthemums in the present day to utilise the space hitherto occupied by crocks with

some material which will act as drainage and supply plant food at the same time; but without experience of their action, they should not be employed, lest they may seriously injure the plants. Mr. Davis considers charcoal as sometimes dangerous, inasmuch as it will store up in itself some substances which, when liberated, may seriously injure the roots. *R. Dean.*

THE SEASON AND FRUIT.—May I send you a few dates and notes on fruit and weather, now the most remarkable drought which I remember has come to an end, and the earliest season for fruit ripening, a month earlier than usual. A dish of William I. Peas, pods well filled, was gathered on April 16 in the open ground, sown January 19. A ripe Juneating Apple fell on June 10 from an old tree which bears almost every year. The wind has now shaken down most of the remainder. First ripe, 1892, July 15; ditto, 1891, July 27. The first ripe fruit on a Doyenné d'Été Pear, an oblique cordon on Quince, on a south wall, fell June 19; there are still some left on the tree. On June 21 a fruit of the Alexandra Early Peach was ripe on south wall without any protection. Lucombe Seedling Apples were a good size on June 12, and made a very good tart. The only frost in April was 2° (April 15), there was no frost in May. Monday, June 19, thermometer stood at 88° in the shade, and



BARON SCHRODER.

Saturday 24, it had fallen to 66°. There has been no steady rain here between February 24 and June 25, but slight showers fell on March 1, 6, 16, and 17; April 1 and 22; May 2 slight showers; May 16 to 23 some nice showers—one night, a heavy shower fell, which refreshed the gardens and enabled us to prick-out some seedling Broccoli and Sprouts. June 23 to 25, showers; it rained in the evening of the 25th; since which some nice rain has fallen, and there is now a tinge of green in some parts of the field. Cows have for many weeks had as much tub-meat as they have in winter. The ground in the garden is still as dry as dust at 1 inch below the surface. *H. R., Plymouth.*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

On Thursday, June 22, there took place at the Whitehall rooms of the Hôtel Métropole, the fifty-fourth annual festival of the Gardeners' Royal Benevolent Institution, Baron Sir Henry Schroder in the chair. The guests present numbered some 120 gentlemen, and included Sir Trevor Lawrence, Bart., Lord Teynham, Rev. W. Wilks, Master of the Gardeners' Company, Mr. H. J. Veitch, Treasurer of the Institution, Mr. P. Crowley, Mr. John Lee, the oldest member of the Executive and auditor of the Institution, Mr. Schlusser, Mr. W. Bull, Mr. O.

Thomas, Mr. G. Paul, Mr. J. Cheal, Mr. H. Laing, Mr. G. Munro, Mr. Rivers, Mr. A. Turner, Mr. Moss, Mr. N. T. Sherwood, Mr. Adams, Mr. P. Crowley, Dr. Hogg, Mr. T. F. Peacock, and Mr. A. W. G. Weeks.

The dinner over, the loyal toasts were proposed in graceful terms by the Chairman, who alluded to the fondness of the Royal family for flowers, and to the approaching Royal marriage. The toast of the evening, "Continued Success to the Gardeners' Royal Benevolent Institution," followed. The chairman said that at first he had been inclined to eschew the honour of taking the chair that evening, as he felt he was no orator; however, he was greatly interested in, and always had the goodwill of the Institution at heart, and resolved to give his testimony on its behalf. He took a great deal of interest in everything connected with horticulture. Despite the number of hospitals in that vast metropolis and its innumerable charities, there was none that spoke so much to the heart as this one. He pitied the man who was not fond of flowers. They were man's companions alike in joy and sorrow, and the associations of flowers went with them through life to the end. He knew people who discarded diamonds, but not flowers. If this was their regard for flowers, what ought to be their feelings with regard to those who tended those flowers with loving hands night and day at the risk of their health—the gardeners! Ought they not to do everything that lay in their power for them in their day of distress, and alleviate their necessities? They ought to be thankful that such a society existed as the Gardeners' Royal Benevolent Institution, which gave them an opportunity of showing their gratitude.

At the present time there were 150 pensioners and 1300 subscribers. One noticeable feature of the Institution was the encouragement that it gave to those gardeners who in their prosperous days subscribed to its funds. A rule lately adopted gave a gardener who had been a subscriber for four years, fifty votes at an election, and subscribers for a longer period received proportionately a larger number of votes.

The Chairman coupled with the toast the name of Mr. H. Veitch, the treasurer. The toast was most heartily received. Mr. Veitch, in his reply, spoke with much feeling, and alluded to the progress of the Institution, which, if sometimes slow, never stopped, and the smallness of present subscriptions was compensated by lessened expenses, but he continued to look forward with hope. When he reminded those around him that Mr. John Lee, the father of the Institution seldom failed to preside over its meetings, they might rest assured that every economy would be practised in its management. The pension list required £2700 yearly; the fixed income, however, was only about £1000, so that the great need of a liberal response to the Chairman's appeal would be manifest.

In the unavoidable absence of Dr. M. T. Masters, the next toast, that of "The Royal Horticultural, Royal Botanic, and kindred societies of Great Britain," was submitted by Mr. Arnold Moss.

Sir Trevor Lawrence on behalf of the Royal Horticultural Society, said that it and the other societies deserved well of the community; but he confined himself to the Royal Horticultural Society, alluding to the success of the Temple Show and to the fortnightly meetings; of difficulties overcome, and the increase in the number of its Fellows—254 this year.

The Rev. W. Wilks, M.A., offered the toast of "The Stewards and Officers" in a few brief sentences; Mr. N. T. Sherwood responding in fitting terms. The Secretary, Mr. G. J. Ingram, announced the total of the evening's donations to amount to £1454. The donations included:—Baron Schroder, 50 guineas; Baroness Schroder, 50 guineas; Messrs. Rothschild, 100 guineas; Mr. N. Sherwood, £100; Mr. Munro, £91; Sir Trevor Lawrence, 10 guineas; Mr. H. Williams, £35; Messrs. J. Veitch & Sons, 20 guineas; the Vintners' Company, 10 guineas; Mr. Alma Tadema, 10 guineas; and Mr. N. L. Cohen, 10 guineas.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JUNE 20.—Present: Dr. M. T. Masters, in the chair; Messrs. Morris and McLachlan, Dr. Müller, Professor Oliver, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

Scale on "Retama."—Mr. Morris observed, with reference to this subject, brought before the last meeting, that the name of the *Retama* is *Cytisus nubigenus*. It is the only ligneous plant growing on a platform, at an elevation of 8000 feet, on the Peak of Teneriffe. The whole of the plants were covered with the scale. Dr. Perez had noticed no instance of this scale insect appearing until Australian trees had been introduced into Teneriffe. Mr. Morris added that it has now appeared at Kew on the English Broom.

Honeydew on Limes.—Mr. Morris remarked that this had been so abundant on the Limes at Kew that the cement pavement below them had become quite slippery from the drip from the trees. Mr. Henslow added that he remembered a similar occurrence from an Ash tree in a garden in Regent's Park Road about the year 1878.

Oranges in Devon.—Mr. Morris exhibited photographs of Orange trees growing and fruiting successfully in arched recesses at Coombe Royal, near Kingsbridge, Devon. They were protected in front during the winter.

Cochineal in Teneriffe.—Mr. McLachlan raised the question of the cultivation of this insect in Teneriffe, as the industry appears to have decayed in consequence of the introduction of aniline dyes. Mr. Morris observed that it was somewhat reviving, as there was a certain demand for colouring fruit, preserves, &c. Dr. Müller added that it would be always required as a source of carmine, as this colour cannot be replaced by any other known product.

Thereva nobilitata in Celery.—Dr. Müller exhibited grubs resembling wireworms, which were found in decayed Celery plants. They proved to be those of a brown fly. This usually lives in rotten wood, but whether the grubs destroyed the Celery, or were feeding on the decayed roots, &c., was not clear. It was suggested that possibly they were carnivorous, as other grubs had disappeared from the soil.

Culchortus and Lily, monstrous.—Dr. Bonavia exhibited flowers, each consisting of two flowers united on one floral receptacle. An examination of the fibro-vascular cords showed that these had arisen by chorisis from a normal stem. *A propos* of this, Mr. Henslow said that he had examined the cords in a germinating Cockcomb, and found that the multiplication of the bracts and flower-buds arose in a similar way. The zone of cords being circular in section below, the cords rapidly increased in number by bifurcation above, one branch entering each bract, and a small cluster each flower-bud. Hence, fasciation would be better described as the effect of cauline chorisis, and not as a fusion of a number of independent buds, as the term seems to imply.

Azolla pinnata fruiting.—Mr. Greenwood Pim sent through Dr. Masters, specimens in fruit. He writes—"The plants had been growing in the open air for two years in co. Wicklow, and had increased to a large extent. Two or three months ago a quantity was placed in a shallow peaty pool, which is now almost dry, having only a few inches of water. In this the plant is producing fruit on almost every fully-developed individual."

Linaria repens × *vulgaris*.—Mr. Henslow showed specimens of this hybrid which has occurred spontaneously near the station at Oxford, with the following remarks received:—"L. repens was not known prior to 1889, when ballast was brought from Didcot. It appeared in 1890 side by side with L. vulgaris. In 1892 a complete chain of hybrids was found from L. repens, with a little yellow on the lip, to L. vulgaris, with the faintest striæ on the flower."

RICHMOND HORTICULTURAL.

JUNE 28.—This is generally one of the most attractive exhibitions amongst those held in the suburban districts of the metropolis, and upon the occasion under notice a large and comprehensive schedule included upwards of a hundred classes. A very large number of these, however, were for prizes offered by ladies and gentlemen living in the neighbourhood, and who appear to take a very lively interest in the Society. Four fairly spacious tents were erected, but owing to a number of entered

exhibits failing to appear, at least two of these were not so well furnished as they might have been; still, the exhibition was a pleasing one.

The first open class was for a group of plants in or out of flower, arranged for effect, not to exceed 100 square feet. The 1st prize was given to Mr. H. E. Fordham, Twickenham, for a very pretty and bright group in a semi-circle. The groundwork of Ferns, Gloxinias, Streptocarpus, &c., was relieved with a few Liliiums, Crotons, Palms, Hydrangeas, &c., the background being composed of Palms, Lilies, Crassulas, &c. 2nd, J. Marriott, Esq., Queen's Road, Coventry (gr., Mr. W. Finch). In some respects a well-considered group, but the edging not sufficiently tasteful, and the pots rather more prominent than desirable. The 3rd prize was given to Mr. W. J. Brown, St. Mary's Nursery, Richmond, who had a group in many respects better than the 2nd prize exhibit, but the plants were rather too crowded in this case.

For a group in a class for prize offered by Lady Whittaker Ellis, the 1st place was taken by F. Wigan, Esq., Clare Lawn, East Sheen (gr., Mr. C. Want).

J. Marriott, Esq., Queen's Road, Coventry, was successful in a class for six stove and greenhouse plants in flower, distinct, Pelargoniums and Fuchsias excluded. This was regarded as the principal class of the show, and the collection in question was of considerable merit, although the plant of Erica Thompsoni had but little bloom upon it; Erica Parmenteriana and Phenocoma prolifera were very good, as also were the plants of Ixora Fraseri, Bougainvillea glabra, and Allamanda grandiflora. Mr. J. F. Mould, The Nursery, Pewsey, Wilts, who was 2nd, was much in front of the others.

For a special prize offered by Sir Whittaker Ellis, for six Palms, not less than three varieties, there were several competitors, and the plants staged were large and good. W. Cunard, Esq., Orleans House, Twickenham, gr., Mr. J. Symonds, was 1st, and for a prize offered by Miss Thuillier, Tudor House, Richmond, for a single specimen Palm, the same exhibitor was equally successful.

The Fuchsias were not noteworthy. In the open class for six distinct varieties, W. Cunard, Esq., was 1st.

Foliage plants were well shown in the open division; 1st, J. Marriott, Esq., for six, with good and large plants of Kentia australis, Livistonia chinensis, Kentia Belmoreana, Croton Queen Victoria, Asparagus plumosus nanus, and Cordyline indivisa. A. Pears, Esq., Spring Grove House, Isleworth, was 2nd, and showed well.

Mr. C. Turner, Royal Nurseries, Slough, was 1st in the classes for show and decorative Pelargoniums, and for fancy varieties. His plants were in good condition.

Orchids are never a great feature at Richmond, and in the class for six Exotics, there were but two exhibitors. The 1st prize going to H. Little, Esq., Barrons Hall, Twickenham (gr., Mr. A. Howard). He had a good plant of Laelia purpurata, and his Cattleya Mendeli, Odontoglossum vexillarium, Dendrobium suavisimum, and Vanda teres were all commendable.

The same exhibitor was 1st for six Pelargoniums, zonal or bedding varieties; and 2nd for six Ivy-leaf Pelargoniums, distinct. The 1st prize for six Coleus was taken by W. Farze, Esq., Roselands, Teddington (gr., Mr. E. Coombs).

For eight exotic Ferns, distinct, a 2nd prize was awarded to T. Cave, Esq., Queensbury House, Richmond (gr., Mr. Wilks), with but medium-sized plants.

Competition limited to Exhibitors Resident in the District.—Gloxinias were not at all up to the usual standard. The best nine were only awarded a 2nd prize; and the best six for Messrs. Sutton & Sons' prizes, somewhat better, came from Mr. Smith, gr. to W. H. Plum, Esq., Isleworth.

Only one lot of six Caladiums were presented, coming from Mr. Want, gr. to F. Wigan, Esq., Sheen; and Mr. Coombs, gr. to W. Farze, Esq., Teddington, had the best six Coleus, good flat well-coloured plants.

Of moderate dimensions were the exotic Ferns in the local class. Mr. Want being 1st with Lomaria gibba, Davallia Mooreana, Adiantum formosum, &c.

The class for six Liliiums was poorly filled, only small plants of Harriisi being staged.

Roses (open).—The fine collections from the trade growers, in competition for the prizes in the open classes, happily redeemed the Rose show from failure, as local flowers were poorly shown. In the

class for forty-eight trebles, Mr. B. R. Cant gave a taste of the excellence of the Colchester flowers this season, being a good 1st. Amongst his best blooms, were A. K. Williams, Charles Lefebvre, Comtesse de Rainbaud, Reynolds Hole, Alfred Colomb, Dr. Andry, Marie Verdier, Merveille de Lyon, Madame de Watteville, Souvenir d'Elise Vardon, The Bride, Ernest Metz, &c. Messrs. Paul & Sons, Chessunt, were 2nd; and Mr. W. Rumsey, Waltham Cross, 3rd.

In the class for eighteen trebles, Mr. W. Mount, Canterbury, was 1st; and Mr. W. Tayler had the only lot of twelve trebles.

In the class for twelve blooms, one variety, H.P.'s, Mr. Perkins of Coventry had charming blooms of A. K. Williams; Mr. Cant coming 2nd with Reynolds Hole.

In the corresponding class for Teas, Mr. Mount was 1st with The Bride, Mr. Cant following with Souvenir de S. A. Prince.

In the amateurs' classes, Mr. R. E. West of Reigate was 1st with twenty-four single blooms, also with twelve blooms; Mr. Warwick, gr. to J. P. Kitchen, Esq., Hampton, being in each case 2nd.

Of honorary collections, Messrs. Jackman & Sons, Woking, had a fine lot of blooms, as also had Messrs. J. Laing & Sons. Messrs. Perkins showed their new maroon-coloured Cactus Dahlia, a true form of this favourite class.

Dinner-table decorations, though very much of the stereotype, order always present considerable attractions here.

In the class for three stands, Miss L. Hudson, Gannorsbury, was 1st, with ordinary epargnes, very charmingly dressed with Orchids, &c. Miss C. Cole, Feltham, was 2nd, her stands being dressed with white and pink Carnations, Sweet Peas, grasses, &c. With two stands, Miss Cole was 1st, in this case using the yellow Sweet Sultan, Pinks, Sweet Peas, and grasses; she also was 1st for a single stand; also had the best basket, dressed with pink Carnations, purple Beech foliage, &c. Messrs. Perkins & Co., Coventry, had, as usual, the best and beautiful cascade bouquets; and Miss E. L. Clarke had a superb basket of Roses, crimson, cream, and yellow.

Hardy Flowers were shown in great abundance by Messrs. W. Cutbush & Sons, Highgate, and in the competition for twenty-four bunches, Mr. Pritchard was a good 1st, with a beautiful lot, including Eryngium giganteum and amethystinum, Iceland Poppies, Gaillardias, Phloxes, Polemoniums, &c.; Mr. Sage, Ham House Gardens, was 2nd, having specially good Centaurea macrocephala, Campanula persicifolia, Helenium pumilum, &c. Messrs. Cannell & Sons exhibited from Swanley a collection of fine flowers of their double and single Begonias.

Fruit.—The best collection of six dishes came from Mr. Osman, Ottershaw Park, Chertsey, who had good Black Hamburgh and Buckland Sweetwater Grapes, Royal George Peaches, Brown Turkey Figs, Elruze Nectarines, and Hero of Lockinge Melon; Mr. Sage was 2nd. The best three bunches of black Grapes in the open class came from the same exhibitor; Mr. Ford, Clovelly, Hounslow, being 2nd with fair clusters; and in the class for whites, Mr. Ford was 1st with fair Foster's Seedling. Mr. Osman coming 2nd. In the local class for two bunches of blacks, Mr. Knowles, gr. to Miss Egerton, Roehampton, was 1st, and was also 1st in the class for whites. Mr. Sage took first place in the class for four dishes of fruit, having black Hamburgh Grapes, Figs, Rivers' Early Nectarine, and Melon. Strawberries were few, the best two dishes, good Oxonian and Sir J. Paxton, coming from Mr. Parsons, gr. to T. Twining, Esq., Twickenham.

Mr. Simmonds, gr. to W. Cunard, Esq., Orleans House, had the best dishes of Peaches in good Belle-garde; and the best Nectarines with Lord Napier. Of Melons Mr. Wilks was 1st, with a very small Hero of Lockinge; the same variety being 2nd, though small, the large fruits having no flavour.

Vegetables were, for the season, very good. In the open class for twelve dishes, Mr. C. J. Waite, gr. to the Hon. Colonel Talbot, Esher, was 1st, having fine Asparagus, Magnum Bonum Peas, Ashtop Fluke Potatoes, Perfection Tomatoes, Lythian Beans, All Heart Cabbage, &c. Mr. Wilkins, gr. to Lady Theodora Guest, Blandford, was 2nd, but in the class for prizes offered by Messrs. Sutton & Sons, Reading, for nine dishes, he was a good 1st, having superb samples of Al Cucumbers, Magnum Bonum Cauliflowers, Duke of Albany Peas, &c. Mr. Waite was 2nd. The same order was seen in the competition for Messrs. James Carter & Co.'s prizes also for nine dishes. Whilst in another

local class Mr. G. H. Sage was 1st, having in his collection some specially good Early Milan Turnips. Tomatos were excellent, handsome but not large. The best came from Mr. Simmonds.

Very good collections for so late a period of the season came from Messrs. Hugh Low & Co., Clapton, who had Cattleys, Lælias, Cypripediums, &c.; and Mr. H. Little, Twickenham, who had a fine lot of Cattleys, Odontoglossa, &c., including some large and excellent Palms. Messrs. Jno. Peed & Sons, Roupell Park Nurseries, Norwood Road, S.W., staged a very good group, but the centre was rather low. A few good Caladiums were included. Mr. Chas. Turner, the Royal Nurseries, Slough, had a group of Carnations, Germania and Souvenir de la Malmaison; and also a group of Pelargoniums, in fine condition.

Miscellaneous.—As usual at Richmond, the groups of plants in this section were numerous, and of exceptional attractiveness. Besides those mentioned above, a large group of ornamental foliage and flowering plants was staged by Mr. J. F. McLeod, gr. to J. P. Morgan, Esq., Dover House, Roehampton, S.W. The plants in this group deserve special mention for the extra-good culture represented. Large well-coloured Crotons, Caladiums, Begonias, and an immense variety of plants of superior merit were tastefully arranged. Messrs. Jas. Veitch & Sons, Chelsea, had a large group of *Lilium longiflorum*.

Messrs. J. Laing & Sons, Forest Hill, had a group facing one of the entrances to the large plant-tent. The feature of the group was the collection of choice Begonias, single and double, it included. For the rest, it was remarkably gay and pleasing.

Another group of miscellaneous plants was staged by Messrs. Puttock & Shepherd, nurserymen, Kingston-on-Thames.

A large group of decorative foliage plants in the centre of one of the large tents, was staged by Mr. Wm. Iceton, nurseryman, Putney.

GARDENING AND FORESTRY EXHIBITION.

JUNE 28.—The Second Rose Show of the season was held at Earl's Court on Wednesday, and the earliness of the season showed itself very plainly in the Tea and Noisette classes, which were not so strong in quality as those shown a fortnight ago. Besides the classes for Roses, and a few other miscellaneous classes, a few had been arranged for fruit, and these brought a good display. In the first class, which was one for forty-eight Roses, distinct, single trusses, the prize went to a North Country firm, Messrs. Harkness & Sons, Bedale, Yorkshire, whose exhibit was really very good. The blooms were large, fresh, and full, the colour in most cases being also good. Particularly noticeable were Louis Van Houtte, Dr. Andre, Heinrich Schultheiss, A. K. Williams, Edward Andry, Duchess of Bedford, Earl of Dufferin, and Marie Baumann.

For twenty-four distinct Roses, three trusses of each, Mr. Frank Cant and Messrs. Harkness were declared equal 1sts. Messrs. G. & W. H. Burch, of Peterborough, were 1st in the class for twelve, with specially large blooms of Her Majesty, and good specimens of Exposition de Brie, Etienne Levet, Ulrich Brunner, Fisher Holmes, &c. For twenty-four Teas or Noisettes, distinct, single trusses, Mr. B. R. Cant, of Colchester, took the 1st place. The blooms in this section were not very good, and appeared a little past their best. Mr. Geo. Mount, The Rose Nursery, Canterbury, was 1st in the class for eighteen, and amongst the most noteworthy were Madame Cusin, Maréchal Niel, and Catherine Mermet.

In the garden Roses, Messrs. Paul & Son, Cheshunt, took leading honours for eighteen very creditable bunches. W. A. Richardson, L'Idéal, Madame Pernet Ducher and Gustave attracted most attention. Twelve trusses of any dark Rose were best shown by Mr. B. R. Cant, who had extra good Altdred Colomb. The blooms were very large and full. Messrs. Perkins & Sons, Coventry, had the best light Rose in same number in their Her Majesty, also very fine. In the Tea and Noisette class, H. V. Machin, Esq., Gateford Hill, Worksop, was the best with Souvenir de S. A. Prince, but none of the Teas can be described as exceptional.

Coming to the amateur classes, we found a very creditable lot from E. B. Lindsell, Esq., Bearton, Hitchin, who took 1st prize for twenty-four H.P.'s, distinct, single trusses, showing fine Marie Baumann, Alfred Colomb, Earl Dufferin, &c.

The Rev. J. H. Pemberton, Havering-atte-Bower, Essex, took the corresponding position in the class

for twelve H.P.'s, three trusses of each. His best were Her Majesty, Chas. Lefebvre, and A. K. Williams.

For twelve distinct H.P.'s, single trusses, the premier position was taken by the Rev. Hugh A. Berners, Harkstead Rectory, Ipswich. The same position, that for eighteen Teas and Noisettes distinct, was taken by Henry V. Machin, Esq. The blooms were rather small, but otherwise were fair.

The Rev. A. Berners showed the best twelve Teas, and showed much better blooms than those in the larger class. A large group of Roses was staged by Messrs. W. Paul & Son, Waltham Cross, and included a new Noisette Madame Pierre Cochet, in colour between W. A. Richardson and Madame Falcot.

MISCELLANEOUS AND FRUIT.

Mr. T. Bones, Heaston Gardens, Cheshunt, took 1st prize for twelve bunches of cut Gloxinias, three blooms in a bunch.

Mr. T. Ware, Hale Farm Nurseries, Tottenham, was the only exhibitor in the class for a group of Begonias, arranged for effect, to occupy a space 12 feet by 8 feet. This was a very showy group, and contained some well-grown examples of the double and single sections, but it appeared to us insufficiently relieved by the usual Ferns, &c., which generally accompany such groups.

Mr. Anthony Waterer, Knap Hill Nursery, near Woking, showed a new hardy *Spiræa* called Anthony Waterer. It has a flower much deeper in colour than *S. palmata*, and the inflorescence is less pyramidal than that variety. A group of Clove Carnations was staged by Mr. J. Walborn, Cedars Nursery, West Kensington.

The fruit present was of very good quality, most of it gaining in colour from the unusual amount of sunshine.

Mr. J. McIndoe, Hutton Hall Gardens, took the first position in the class for six dishes, and showed Black Hamburg, and Muscat of Alexandria Grapes, Brown Turkey Fig, Grosse Mignonne Peach, Stanwick Elruge Nectarine, and Pear Clapp's Favourite. For three dishes of Black Grapes, those from Mr. Thos. Osman, the Gardens, Ottershaw, were best, —Black Hamburg, of good colour, and fair in bunch and berry. Mr. McIndoe was 1st for three bunches of white, showing Muscat of Alexandria.

Mr. H. Poulton, gr. to C. T. Cayley, Esq., Ivy Mount, Lewisham, had the best three Melons, showing very pretty fruits of Hero of Lockinge; and also the best single fruit, with Ganton Orange.

Peaches were well shown, the 1st prize going to Mr. C. Stocking, gr. to Walpole Greenwell, Esq., Marden Park, Caterham Valley, who had large fruits of Bellegarde. Mr. W. H. Divers, gr. to J. T. Hopwood, Esq., Ketton Hall, Stamford, who was 2nd, had rather smaller but finer-coloured fruits, and of a better shape. Mr. W. Robins, gr. to Colonel Lee, Hartwell House, Aylesbury, had the best Nectarines, showing large well-coloured fruits of Spencer. Amongst several competitors for Figs, Mr. W. Allans, gr. to Lord Suffield, Ganton Park, Norwich, took the lead, with a dish of Negro Largo.

J. Gurney Fowler, Esq., Glebelands, South Woodford, Essex, was 1st for two dishes of Cherries, distinct. Mr. W. Allan was 1st in the class for three dishes of Strawberries, showing large fruits of Ganton Park; and also in the class for one dish, with the same variety.

Amongst the groups and collections sent, "but not for competition," was a collection of fruits from Messrs. T. Rivers & Son, Sawbridgeworth. This included Peaches Alexander, Amsden June, Waterloo, and a wonderfully large seedling, of which six fruits were shown, the largest weighing fifteen ounces. Cherries were present in twelve varieties. Mr. S. Mortimer, Rowledge Nursery, Farnham, had three dozen Melons, which were associated with a large number of branches of *Stephanotis*, which certainly conveyed no sense of congruity, but were interesting as showing very exceptional freeness in flowering.

Mr. T. Berridge, gr. to T. Unwin, Esq., Norwood Lodge, Southall, showed Tomato plants and shoots in several varieties; and a collection of twelve dishes of Tomatos was staged by Messrs. Fellowes & Ryder, Northumberland Nursery, Orpington, Kent, as well as fine dishes of an apparently good Tomato, Duke of York.

Mr. G. Featherby, The Vineries, Gillingham, Kent, showed fine Black Hamburg Grapes, some Tomatos, and Carter's Model Cucumber. Messrs. P. Barr & Sons, King Street, Covent Garden, showed a collection of cut hardy flowers, including some varieties of Poppies. A collection of Delphiniums came from Mr. Jno. Forbes, Hawick, N.B.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	Above (+) or below (—) the Mean for the week ending June 24.	ACCUMULATED.				No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for this Week.	Above 42° difference from Mean since January 1, 1893.					
				Above 42°.	Below 42° difference from Mean since January 1, 1893.				
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.		
0	0 aver	80	0	+ 341	— 57	3 —	103	18.0	20 27
1	1 +	99	0	+ 260	— 21	10 +	83	10.3	24 33
2	2 +	111	0	+ 279	— 62	1 +	69	7.6	25 37
3	1 +	123	0	+ 343	— 37	0 aver	69	7.1	37 44
4	2 +	126	0	+ 445	— 47	1 —	68	7.5	38 42
5	3 +	136	0	+ 387	— 43	1 —	64	7.4	44 46
6	1 +	93	0	+ 353	— 63	2 —	83	14.7	41 37
7	2 +	116	0	+ 433	— 91	0 aver	72	9.7	26 37
8	4 +	137	0	+ 486	— 70	3 —	67	11.1	70 50
9	1 +	106	0	+ 373	— 104	4 —	88	11.6	41 31
10	2 +	123	0	+ 422	— 100	4 —	76	12.3	49 36
*	4 +	146	0	+ 554	— 52	4 —	70	8.9	77 57

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending June 24, is furnished from the Meteorological Office:—

"The weather continued fine and dry generally during the earlier part of the period, but some thunder and lightning, accompanied by slight local rain occurred at some south-eastern and southern stations. After the middle of the week, however, the conditions became unsettled and rainy at nearly all stations, the fall experienced in the east of Scotland being decidedly heavy.

"The temperature was considerably above the mean during the early days, but fell very suddenly on the 19th to 20th, and became somewhat low for the time of year. The average values for the whole week just equalled the normal in the north of Scotland, and slightly exceeded it in most other districts; in 'England, S.W. and the Channel Islands,' however, the excess amounted to 4°. The highest of the maxima occurred on the 18th in the northern and western districts, and on the 19th in the south and east; they were very high generally, ranging from 91° in 'England, S.,' and 90° in 'England, S.W. and Scotland, E.,' to 81° in 'Scotland, W.' and over Ireland, and to 79° in 'Scotland, N.' The lowest of the minima were recorded either on the 23rd or 24th, and ranged from 39° in 'Scotland, W.,' and 41° in 'England, S.W.,' to 45° in 'England, E. and N.E.,' and to 52° in the 'Channel Islands.'

"The rainfall greatly exceeded the mean in 'Scotland, E.,' and just equalled it in 'England, E. and N.W.,' in all other districts there was again a deficit, although the amount recorded over our south-eastern and central counties was more considerable than any experienced in those localities for many weeks past.

"The bright sunshine again exceeded the mean in Ireland and the greater part of England, but was below it in the north and east of Scotland and the northern and north-eastern parts of England. The percentage of the possible duration ranged from 77 in the 'Channel Islands,' and 70 in 'England, S.W.,' to 49 in 'Ireland, S.,' 44 in 'England, S.,' and to 20 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, June 29.

MARKET again well supplied. A brisk business doing, with prices easier. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Hydrangea, per doz. 12 0-24 0
Aspidistra, per doz. 15 0-30 0	Ivy Geranium, doz. 4 0-6 0
— specimen, each 7 6-21 0	Lilium Harrisii, doz. 18 0-30 0
Calceolaria, per doz. 4 0-6 0	Lobelia, per doz. 3 0-6 0
Cockscombs, per doz. 4 0-6 0	Marguerite, per doz. 6 0-12 0
Crassula, per doz. 18 0-42 0	Mignonette, per doz. 4 0-6 0
Cyperus, per dozen 4 0-10 0	Musk, per doz. pots 4 0-6 0
Dracæna, each 1 0-5 0	Nasturtium, p. doz. 4 0-6 0
Erica, various, doz. 9 0-21 0	Palma, various, each 2 0-10 0
Ferns, various, doz. 4 0-9 0	— specimens, each 10 6-84 0
Ferns, small, per 100 ... 5 0-8 0	Pelargonium, p. doz. 8 0-12 0
Ficus elastica, each 1 6-7 6	— scarlet, p. doz. 3 0-6 0
Foliage plants, doz. 12 0-42 0	Saxifrage, per doz. 12 0-18 0
Fuchsia, per doz. 6 0-9 0	

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. 2 0-4 0	Pansy, per doz. bun. 1 0-2 0
Aster (French), bun. 2 0-2 6	Orchids:—
Bouvardias, per bun. 0 6-1 0	Cattleya, 12 blms. 6 0-12 0
Calceolaria, doz. bun. 4 0-6 0	Odontoglossum
Carnation, doz. bun. 4 0-9 0	— orisperm, 12 blms. 2 0-6 0
— dozen blooms 1 6-4 0	Pelargoniums, scar-
Cornflower, 12 bun. 1 0-3 0	— let, p. 12 bun. 4 0-6 0
Eucharis, per dozen 3 0-4 0	— 12 sprays ... 0 6-0 9
Gardenia, per dozen 1 0-3 0	Pink, various, 12 bun. 2 0-6 0
Heliotrope, per doz. 0 4 0 6	Poppy, doz. bunches 1 6-4 0
— sprays ... 0 4 0 6	Primula, dble. p. bun. 0 6-1 0
Iris, doz. bunches 6 0-12 0	Pyrethrum, 12 bun. 2 0-6 0
Lilium candidum, p. bunch ... 1 6-4 0	Roses, doz. bunches 3 0-8 0
— lancifolium, p. bunch ... 3 0-4 0	— Tea, per dozen 0 8-2 0
— Harrisii, p. doz. 3 0-5 0	— coloured, dozen 2 0-4 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— yellow (Maré-
Marguerite, p. doz. bunches ... 1 6-3 0	— chals, per doz. 1 6-6 0
Mignonette, 12 bun. 2 0-4 0	— red, per dozen ... 0 1-1 6
Myosotis, 12 bunches 2 0-3 0	Spiræa, 12 bunches ... 3 0-6 0
	Stocks, per bunch ... 0 4-0 6
	Sweet Sultan, 12 bun. 2 0-4 0
	Tuberose, 12 blms. 0 6-1 0

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian, per case ... 2 6-8 6	Grapes, per lb. ... 1 0-2 0
Cherries, half-sieve, 4 0-7 6	Lemons, per case ... 12 0-20 0
Currants, black, 4 6-4 9	Peaches, per doz. ... 3 0-9 0
— red, doz. ... 3 0-3 6	Pine-apples, St. Mi-
Cobs, per 100 lb. ... 1 6-2 0	— chael ... 2 0-5 0
Gooseberries, half-sieve, 1 6-2 0	Oranges, per case ... 20 0-30 0
	Strawberries, per lb. 0 3-1 6

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 1 6-2 0	Mushrooms, punnet 2 0-
Beet, red, per dozen 2 0-3 0	Mustard and Cress, punnet ... 0 4-...
Carrots, per bunch ... 0 4-0 6	Parsley per bunch ... 0 3-0 4
Cauliflowers, each ... 0 3-0 6	Shallots, per lb. ... 0 6-...
Cucumbers, each ... 0 4-0 8	Tomatoes, per lb. ... 0 6-1 0
Endive, per dozen 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

NEW POTATOS.—Jerseys, fair trade, 6s. to 9s. per cwt.; Cherbourg, Flukes, 6s. to 7s. 6d.; Kidneys, 7s. to 7s. 6d.; English Kidneys, 10s. to 12s. *J. B. Thomas.*

NOTICES TO CORRESPONDENTS.

BOOKS: *E. P. The Australian Handbook for 1892.* (London: Gordon & Gotch, St. Bride Street, Ludgate Circus, E.C.)

CARNATIONS: *T. R. D.* Badly affected with eelworms. Burn the plants. Turn out the soil, and start afresh.

CEPHALOPHYTES, DENDROBIUM: *Isosoma.* The effects of bad cultivation, in addition to sour materials and want of proper drainage, probably. The Eucharis bulbs seem to have got the bulb-mite, but from the miserable scraps sent we cannot be certain. Please send bulbs for our inspection.

FOXGLOVE WITH A CAMPANULATE TERMINAL FLOWER: *J. C.* It is a case of an irregularly-formed flower becoming regularly and evenly developed. In the language of botany, a case of Peloria. A similar flower was figured by us, September 26, 1885.

"KEW BULLETIN": *Botanist.* From Eyre & Spottis-woode, East Harding Street, Fleet Street, E.C.; a few pence each number. Monthly. Irregular.

LEAF WITH EGGS: *G. P., Abinger.* The stalked eggs of some fly—one of the Lace-wing flies.

NAMES OF PLANTS: *J. Vearey.* Celsia arcturus.—*W. B. S.* Judging from the leaf and diagram of flowering plant, we should take it to be what you suppose, *Romneya Coulteri*, see *Gardeners' Chronicle*, February 27, 1875.—*A. J. A. B.* Abelia

floribunda.—*A. B.* 1, *Sedum Sieboldi variegata* (Crassulaceæ); 2, *Veronica spicata* (Scrophulariaceæ); 3, *Potentilla*, garden variety; 4, *Alyssum calycinum* (Cruciferae); 5, *Potentilla*, garden variety; 6, *Lyimachia vulgaris* (Primulaceæ); 7, *Habrothamnus fascicularis* (Solanaceæ).—*F. A. G.* 1, *Sedum sarmentosum*; 2, *S. Sieboldi variegatum*; 3, *Sempervivum tortuosum*, variegated form.—*T. D.* *Hyoscyamus niger*, common Henbane, poisonous.—*Amateur.* 1, *Dracæna congesta*; 2, *Cliveia miniata*; 3, *Begonia metallica*; 4, *Begonia*, cannot tell from leaf only; 5, *Dracæna terminalis*; 6, *Aspidistra lurida variegata*.—*M. T.* 1, Probably *Pinus Pinaster*; 2, Probably *Pinus monticola*; 3, *Doodia caudata*; 4, *Veronica Traversii*.—*J. H.* *Dendrobium Devonianum* and *Aërides odoratum*.—*J. R.* 1, *Oncidium Batemanianum*; 2, *Selaginella Mertensii*; 3, *S. stolonifera*.—*Gardener.* 1, *Dendrobium infundibulum*; 2, *Asplenium viviparum*; 3, *A. rhizophyllum*; 4, *Coccoloba platycladon*; 5, *Agrostemma coronaria*; 6, *Celsia cretica*.—*S. P.* 1, *Ceanothus azureus*; 2, *Aspidium coriaceum* var. *capense*; 3, *Dracæna "Bella"*; 4, *Anchusa italica*; 5, *Carex variegata*.—*W. H. S.* 1, *Clarkia pulchella* var.; 2, *C. p. var.*; 3, *Alonsoa incisa*.—*G. H. S.* 1, Allied to *Vaccinium* (next week); 2, *Mitraria coccinea*; 3, *Pentapterygium rugosum*; 4, *Magnolia fuscata*; 5, *Ipomœa Batatas*; 6, Not recognised; 7, *Eranthemum Deavosianum*.—*H. E.* 1, *Cattleya granulosa Dubuysonii*, good; 2, *Cattleya labiata Gaskelliana*, ordinary; 3, *Epidendrum nocturnum*.—*Fr. H., Darmstadt.* *Odontoglossum Galeottianum*.—*H. H., Darmstadt.* *Lycaste macrophylla*.—*G. Abbey.* *Odontoglossum Lindleyanum*.—*F. R.* 1, *Deutzia scabra*, fl.-pl.; 2, *Spiræa arisefolia*; 3, *Lastrea frondosa*.—*C. W. D.* Next week.—*U. C. B.* *Geranium silvaticum*, not pratense; *Spiræa Thunbergii*.—*Young Gardener.* 1, *Begonia* so badly injured by thrips, it cannot be identified; 2, *Stachys lanata*; 3, *Polemonium coruleum variegatum*.—*J. S. W.* *Nepeta grandiflora*.—*R. R.* 2, *Arnebia echinodes*; 4, *Ruscus racemosus*; 5, *Antennaria dioica*.—*J. S.* Subscriber, *J. W., H. M., H. B., T. W.*, next week.

NAMES OF FRUIT: *W. H. B.* Late Duke, probably; but the fruits were badly bruised, and we cannot be certain. In sending Cherries, Peaches, and Plums, it is always advisable to send leaves and young shoots.

ONIONS: *T. R. D.* The bulb is attacked by the maggots of the Onion-fly, which are doubtless the cause of the mischief.

PALM LEAVES: *G. A.* The fungus is *Graphiola phœnicis*, very common on Palms. Cut the affected leaves off and burn them. You might try the effect of spraying with weak Bordeaux Mixture, but use it carefully.

SIX ACRES OF LAND, AND A WALL FACING SOUTH, 6 FEET HIGH AND 500 YARDS LONG: *Beginner.* You may cover the wall with a glass-case or narrow house, and grow Peaches, Tomatoes, early Tea Roses, French Beans, and Strawberries. There is no need to force the things, although some hot-water pipes would be useful. The subjects mentioned in your note, but including Tomatoes, would bring in money in the generality of seasons.

TOMATO SPOT: *Nemo.* See last week's number. Burn all affected fruits, and spray the young unripe fruits with Bordeaux Mixture.

TOMATOS: *A. X. X.* The leaves are affected by *Peronospora infestans*; identical with the Potato blight. There is no remedy when the disease attacks the plants, and you should destroy by burning all plants affected, and to the healthy plants apply the Bordeaux Mixture (often described by us), once in three weeks, at first in a weak solution.

TREES FOR TOWN PLANTING: *Inquirer.* See *Journal of the Royal Horticultural Society*, vol. xiii., 1891. The best shelter-tree is the common Sycamore.

COMMUNICATIONS RECEIVED.—*T. F. R.*—*C. W. D.*—*E. J. L.*—*E. P.*, Ghent.—*D. H.*—*H. C. F.*—*W.*—*N.*—*G. J. I.*—*W. G. S.*—*F. W. B.*—*P. C.*—*L. D.*—*T. C.* & *Co.*—*G. H.*, California.—*M. C. C.*—*J. W.*, Handcross Park.—*H. B.*—*B. & S.*—*C. B.*—*Troyes*.—*G. H.*—*T. C.* (what is the plant?)—*J. G.*—*Lemmon*, Oakland, California.—*Arthur Bennett*.—*H. W. W.*—*W. Ledia*.—*Workshop*.—*W. F. R.*—*N. R. D.*—*W. J. B.*—*O. A. M. C.*—*J. B.*—*E. M.*—*M. T.*—*W. H. D.*—*F. W. S.*—*E. Mawley*.—*J. Milsom*.—*J. Shepherd* (Vines), next week.—*W. R.*—*J. E. R.*, no Grapes arrived.—*Beginner*.—*V. J. J. W.*—*Will Rose*.—*C. W. D.*—*J. D.*

PHOTOGRAPHS RECEIVED (with many thanks).—*E. J. L.* (previously figured).—*M. Lemoine*, Nancy.—*E. J. Lowe*—



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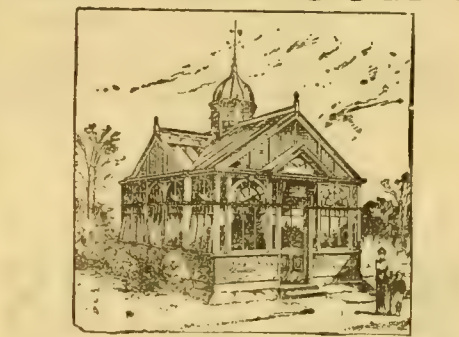
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Fruit Trees, Pelargoniums, Fuchsias, Chrysanthemums, and
almost all kinds of Greenhouse Plants. This opinion is sup-
ported by all the gardeners who have tried it, all being
enthusiastic in its praise.

Per ton, £16; per cwt., 20s.; $\frac{1}{2}$ -cwt., 12s.; 28 lb., 7s.
14 lb., 4s.; 7 lb., 2s. 6d. Sample Tins, 1s. 3d.

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1 cwt., 10s. Full directions for use sent with each tin and bag.
1 cwt. and above sent carriage paid; cash with order.
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thing wanting, it being the most genuine and powerful
Forcer yet introduced. Can be used in powder or dissolved in
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in Kegs, 28 lb., 10s. 6d.; 56 lb., 18s.; 112 lb., 32s. each.

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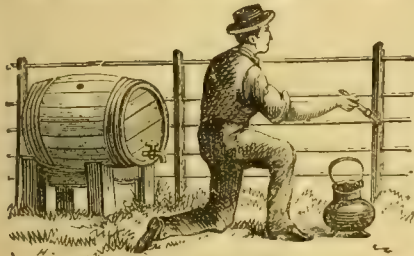
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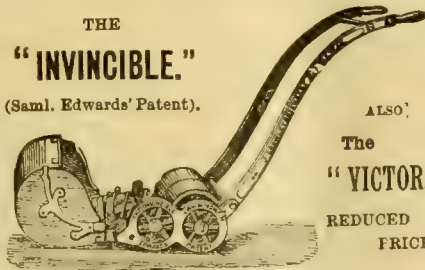
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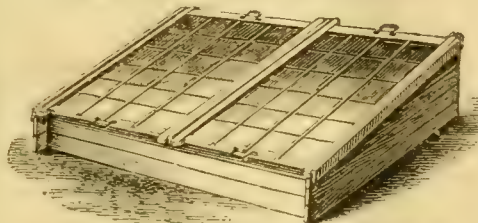
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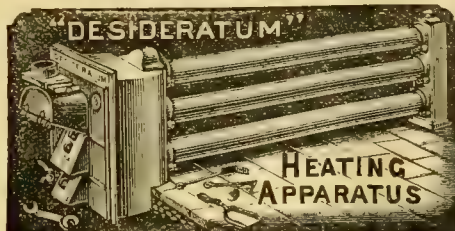
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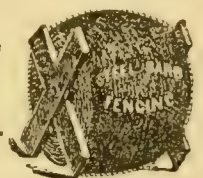
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MR. GEORGE BEATON, formerly at Northwood Hall Gardens, Rickmansworth, as Head Gardener to Captain PENTON, Chalfont Park, Slough.

MR. J. FLORENCE, formerly at Bouvilton House, Cardiff, as Head Gardener to T. D. GRIMK DRAYTON, Esq., Golborn Park, Newton-le-Willows, Lancashire.

MR. W. EVANS, for the last five years Gardener to the Ven. Archdeacon ROBESON, Abbey House, Tewkesbury, as Gardener to JOHN PIGGOTT, Esq., Parkhurst, Bexley, Kent.

WANTED, a WORKING PARTNER, in a Nursery. Twelve Houses, stocked. Capital required £100, or offer.—Apply to J. L., Bately's Grocery Stores, Folkestone Road, Upper Edmonton.

PARTNERSHIP.—Situation wanted; in Nursery, with view to small share in same. Southern counties preferred.—X. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

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WANTED, a WORKING GARDENER, who will be required to Work in the two Recreation Grounds, and also to Attend to the Trees in the Streets. None need apply who are not thoroughly acquainted with the work. Applicants to state age, which must not exceed 40 years. The wages will be 35s. per week, and the person appointed will be required to reside in the Parish. Applications, with copies (only) of three testimonials, to be sent in on or before Wednesday, July 5, not later than 6 P.M., and marked on outside, "Application for Gardener." Canvassing either Members or Officials of the Vestry will disqualify.

J. HARRISON, Clerk.

Town Hall, Spa Road, Bermondsey, S.E.

WANTED, in the country, near Dorking, a WORKING HEAD GARDENER (married), all round man, used to Stock. Three undermen, Vinery, small Glass-houses, and 30 acres of Pasture. Thoroughly satisfactory personal reference indispensable.—Reply by letter, stating wages, family, and full particulars to M. C., Suffolk House, Laurence Pountney Hill, E.C.

WANTED, a HEAD WORKING GARDENER—Married, no family; must have experience in Vines, Cucumbers, Melons, Tomatoes, Mushrooms, Stove and Greenhouse Plants, Fruit, Flower, and Kitchen Gardens, and Early and Late Forcing. Twenty years' experience, and good references necessary.—B., 39, Albert Hall Mansions, Kensington Gore, S.W.

WANTED, a GARDENER, smart, steady, single-handed, for a very Small Garden, and 60 feet of mixed Glass. Must be used to Forcing and Flower Growing. Wages 25s. outdoors. Only those having just left permanent situation need apply, personally only, on Wednesday morning next.—HOLMESDALE, Homesdale Road, Kew Gardens.

WANTED, a young Man as GARDENER, POULTRYMAN, and to do Boots, &c., where no House-boy is kept. Must be willing to make himself useful generally.—A. Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a good GENERAL PROPAGATOR, Inside and Out. Experienced in Growing Flowering Plants, especially Roses, Carnations and Bulbs. Must be a good Salesman, and able to make up Bouquets, Wreaths, &c.—State full particulars to "FLORA," *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

WANTED, a GERMAN PROPAGATOR and GENERAL FOREMAN, with Market-work experience, for a good permanent situation in a large place in Belgium. May be married.—Write stating wages required, and most accurately, former situations occupied, to H. V. P., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

WANTED, a PROPAGATOR, under a Foreman; used to Ericas, New Holland Plants, Genistas, and Rose Grafting.—State age, wages, &c., by letter, to WM. CUTBUSH AND SON, The Nurseries, Barnet.

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WANTED, a KNIFEMAN, quick at Budding and Grafting Fruit Trees. Permanent situation.—State age, wages, &c., to MANAGER, 1, Orchard Villas, West Drayton, Middlesex.

WANTED, by a Gentleman, a JOURNEYMAN GARDENER (SINGLE HANDED), with good experience, Inside and Out. Single man preferred.—Apply by letter, A., North's Library, West Brighton.

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WANTED, a young LADY, Indoors, for Midlands. Must be quick at Wreaths and Bouquets, making a good Window-dresser. Apply, stating wages expected, with copies of Testimonials, to E. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANT PLACES.

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The pressure upon our space at this season of the year is so great, we are compelled to state that advertisements received after 6 P.M. on Wednesday will, in all probability, be held over to the next week.

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GARDENER (HEAD WORKING).—STEPHEN CASTLE, F.R.H.S., has on his Register a first-class Man, whom he can thoroughly recommend. Character and references good. **ALSO**, an **UNDER GARDENER** (age 22), for private place, of good abilities and reference.—Ashford Vineyard, Fordingbridge, Salisbury.

GARDENER (HEAD WORKING).—Age 47, married, no family. Thoroughly practical in all branches. Wife good laundress. Highest recommendations.—J., 4, Treherne Road, Mortlake, Surrey.

GARDENER (HEAD WORKING); age 30; twelve years' experience in good Gardens. Good references.—W. L., 5, Little Elm Place, Fulham Road, London, S.W.

GARDENER (HEAD WORKING).—Married, three children. The Hon. Mrs. PORTMAN wishes to recommend the above. Thoroughly understands all his duties. Ten years' excellent character.—J. A., 13, Witley Road, Upper Holloway, London, N.

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GARDENER (SINGLE-HANDED, or where two are kept).—Age 22; experienced in Greenhouse, Flower and Kitchen Garden; good character from present employer; abstainer.—CHAS. WAUGH, Lynn Street, Dalry, Ayrshire.

GARDENER (SINGLE-HANDED, or SECOND).—Age 25; good character. Four years in last situation.—G. H. PATTINSON, Little Pen Moel, Woodcroft, Chepstow, Glos.

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GARDENER (good SINGLE-HANDED, or where help is given).—Age 25; good reference and experience.—ROSE, Mrs. Fletcher, News Agent, Roehampton, S.W.

GARDENER (SINGLE-HANDED), or where help is given. Age 26, single; understands Greenhouse, Flower and Kitchen Garden. Good character.—BLUNDELL, West Lodge, Addington Park, Croydon, Surrey.

GARDENER (SINGLE-HANDED).—Age 26, married when suited; well recommended by Mr. Bird, Head Gardener.—H. D., 32, South Croxted Road, West Dulwich, S.E.

GARDENER (SINGLE-HANDED); age 26, single.—A GENTLEMAN recommends his Gardener; good experience. Six years in present situation.—A. B., Chilton House, Winkfield, Windsor.

GARDENER (SECOND).—Age 25, married; eight years' experience, Inside and Out. Three years' good character from last place. Abstainer. Could live in a lodge.—L. PLAW, Hascombe, Godalming, Surrey.

GARDENER (SECOND), or JOURNEYMAN (FIRST), in a good establishment.—Age 22; six and a half years' experience. Good character. Bothy.—COWBURN, 8, Mill Place, Mill Street, Altrincham, Cheshire.

GARDENER (SECOND), or JOURNEYMAN (FIRST).—Age 25; three years in present place, with Charge of Fruit and Plant Houses. Nine years' experience. Good character.—S. COGGAN, Stowlangloft Hall Gardens, Bury St. Edmunds.

GARDENER (SECOND).—Age 27; nine years' good character from last place, inside and out.—T. K., Bottle House, near Tonbridge, Kent.

GARDENER (SECOND).—Age 26; eleven years' experience in Plant and Fruit Growing; four years in last place; good reference, and personal character; total abstainer.—E. C., 108, Sussex Road, Brixton, S.W.

GARDENER (THIRD), or otherwise. Age 23; eight years Inside and Out. Three years' good recommendation. Near London preferred.—A. HUNTLEY, 15, Prince's Road, Kingston-on-Thames.

GARDENER (UNDER, or SINGLE-HANDED).—Age 22, unmarried; understands Growing Flowers inside and Out, and Kitchen Gardening. Five years' character last place.—J. STEVENS, Chobham Common, near Woking.

GARDENER (UNDER).—A young man (age 20), with some experience, and can use the scythe. Private Garden preferred. Abstainer. Good references.—W. MORTIMORE, Brookfield Cottage, near Arundel, Sussex.

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PROPAGATOR and GROWER. Age 26. Twelve years' experience in Bouvardias, Ferns, Palms, Roses, Pelargoniums, Cyclamens, Vines, Tomatos, and general Plants, Fruit, and Cut Flowers.—ARUM, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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FOREMAN (Inside, Departmental, or General), in a good establishment. Age 28; well up in all branches of the profession. Testimonials on application.—FOREMAN, 26, Russell Street, Altrincham, Cheshire.

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TO NURSERYMEN.—Situation wanted in a Market Nursery. Age 18; three years' experience.—L., 46, Leader Street, King's Road, Chelsea, S.W.

TO NURSERYMEN.—Situation wanted, in a good Market Nursery, by an energetic young man (age 24), with nine years' experience in the general routine of Market Work. First-class testimonials. Reasonable wages expected.—G., 3, Alfred Place, Hertford Road, Lower Edmonton, N.

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TO MARKET NURSERYMEN.—A young man (age 24), well up in the general routine of all Market Work, seeks situation.—C., 1, Meens Street, Worthing.

TO NURSERYMEN and FLORISTS.—A young man seeks situation. Is of good address. Thorough knowledge of Wreaths, Crosses, and Bouquets. Experienced in all branches of the Trade.—F. M., 36, Artillery Road, Guildford.

TO NURSERYMEN.—Situation wanted, Dutchman (age 28), good all-round hand. In and Outdoors. Twelve years' experience, last three in leading London Nurseries. Good Budder.—A. A. F., Dyson's Lane, Edmonton.

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TO NURSERYMEN.—Situation wanted. Age 23; experienced in Tomatos, Strawberries, Grapes, Chrysanthemums, Arums, Roses, and General Forcing and Growing for Market.—ALBA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO NURSERYMEN and FLORISTS.—Reengagement desired by a young Man, age 23. Ten years' experience in Soft-wooded Stuff, Chrysanthemums, Begonias, Ferns, Palms, &c., Cut Flowers, Wreaths, Crosses, &c.—W. O., Floral Nursery, Castle Hill, Maidenhead.

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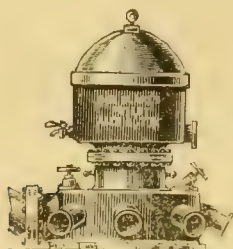
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TESTIMONIALS.

From **CHARLES HART, Esq., A.M.I.C.E.**, 3, Avenue Road, Leamington,
March 13, 1893.

Brixworth Union Rural Sanitary Authority, East Haddon Water Supply.
DEAR SIR,—Since the opening of these works, in May, 1891, the two Double-acting "B" Rams supplied and fixed by you have done their work with a minimum of attention, uninterrupted and satisfactorily. Pure spring water obtained from a gathering ground on the side of a hill is carried along iron pipes a distance of 548 yards, down to a cistern fixed in the ram-house. From this cistern it flows to the rams, which are driven by impure water—drawn from an adjacent brook, with an available fall of 12 feet—and thence by them forced along an ascending delivery pipe, a distance of 1520 yards, to an iron reservoir, at an elevation of 204 feet. From this reservoir mains are laid which supply the hall with its stabling, the rectory, six farm houses, two dairies, and twenty-four wall fountains for the villagers' use.

The average daily consumption exceeds 4000 gallons, which one ram easily delivers, thus exceeding your guaranteed quantity by more than 1000 gallons per ram per 24 hours. Generally the two rams are regulated to divide the work between them, but occasionally it devolves upon one only.

If more widely known, this means of supplying villages and small towns with a limited quantity of spring water, forced to a suitable elevation by means of your rams, driven by impure water, would most certainly be more generally adopted.—Yours faithfully,

CHARLES HART.

From the Right Honourable the **EARL of HARROWBY**, 44, Grosvenor Square,
London, February 21, 1893.

SIR,—I have pleasure in stating that the two Hydraulic Rams, which you supplied and fixed for me last autumn, at Sandon, have proved so far most successful, and that the work gives every promise of durability, while the economy, compared with the former much smaller and intermittent supply by steam pump, will be considerable.

With a fall of about 14 feet from a previously existing mill pool, the rams supply reservoirs 168 feet above the brook whence the water is forced, through pipes of $\frac{1}{2}$ mile in length.

They sent up, as long as I required it, about 41,000 gallons per day.

I now generally work the two rams alternately (for a fortnight or so each), but can at any time work the two together, if the full supply of 41,000 gallons should be needed.

The business of this somewhat complicated water-supply was conducted by you with singular promptness and punctuality; and no local difficulties arose in the execution of the work, owing to the excellent and efficient men whom you sent from your works at Accrington.

I am, Sir, your very obedient servant,

HARROWBY.

From **Mr. J. A. RUTHERFORD**, Agent to **C. F. H. Bolckow, Esq.**, Estate Office,
Marton Hall, Middlesbrough, September 26, 1883.

DEAR SIR,—I am glad to say that the Rams you put down on the Hambledon Estate, for Mr. C. F. H. Bolckow, are working very well. You undertook with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams at full power, 2000 gallons a day. With a supply of 11½ gallons per minute they are lifting 2200 gallons, and when working full power, 3105 gallons per day are sent up to a height of nearly 400 feet. They made a clear start, and have gone well since. The delivery pipe in the above case is 9000 feet in length.

From **THOMAS ROBERTS, Esq.**, Estate Surveyor to His Grace the Duke of Sutherland, K.G., Surveyor's Office, Trentham Hall, Staffordshire, April 13 1886.

DEAR SIR,—I am pleased to say that the Hydraulic Ram you supplied and fixed at Tittensor (the residence of the Marquess of Stafford, M.P.), does its work very satisfactorily, with a fall of 9 feet 6 inches, raising 9000 gallons daily to a height of 150 feet. The Duke of Sutherland, K.G., inspected the working of the Ram, and expressed his entire satisfaction with it.

I am, yours faithfully,

THOMAS ROBERTS.

From **Sir S. M. MARYON WILSON, Bart.**, London, November 17, 1891.

SIR,—I have much pleasure in stating that the two "A" Rams you supplied and fixed for me at Searles, on my Sussex estate, have proved a great success, especially when the small supply of driving water is considered, as with a supply of 7 gallons per minute only, they have daily thrown 3000 gallons to a height of 96 feet, and through a service of pipes over a mile in length; and testing them recently (with plenty of driving power) found they lifted 7000 gallons per day.

The economy effected by their use is considerable, as they have entirely superseded a steam pump.

S. M. MARYON WILSON.

From **HENRY MORTON, Esq.**, Agent to the Most Honourable the Marquess of Ripon, K.G., Ripon, April 12, 1886.

DEAR SIR,—The Patent Ram, with $\frac{1}{2}$ mile of service pipe, a large galvanised tank, and other fittings, which you fixed for the Marquess of Ripon, for the conveyance of water from Hutton Moor Springs to Blows Hall and Copt Hewick Hall, are highly satisfactory to all concerned, both as an engineering success and the intrinsic merits of the materials supplied. About 6000 gallons of water per day are forced into the tank at Blows Hall, nearly a mile distant, and 127 feet above the Ram, the overflow falling into a 20,000 gallon underground tank, from which it gravitates through the 4-inch main 800 yards long, with a fall of 70 feet, to the service-cocks and fire-plugs at Copt Hewick Hall, where, in case of fire, two or three powerful jets of water can be thrown on to the roof of the Hall.

I consider your method of carrying out the work is everything that could be desired, and, whilst the waste-power water from the Ram is less than you specified, the quantity elevated is just what you guaranteed.

I am, dear Sir, yours very truly,

HENRY MORTON.

From **T. H. SIDEBOTTOM, Esq.**, Etherow House, Hadfield, February 22, 1883.

Induced by the good report of my cousin, Mr. J. A. Sidebottom, as to the working of the Hydraulic Ram he had from you, I ordered the one you fixed here a year ago, which I am pleased to say has worked well night and day. Yet the two Rams you fixed at Snow's Hill Manor, Gloucestershire, for my brothers and myself, are, I think, a still more remarkable example of your success. We had a Ram fixed by a well-known firm, which proved a miserable failure, and which your Rams displaced. They are forcing the water through three-quarters of a mile of delivery-pipe, a little in excess of the quantity you guaranteed, to an elevation of 340 feet, and without the slightest hitch to the time of the last report from our tenant.

From **Mr. HENRY ROBINSON**, Engineer to the Stockport District Waterworks Company, September 8, 1883.

DEAR SIR,—I can now report well of the two Hydraulic Rams we have fixed to your instructions for the supply of Disley village; 40,000 gallons per day was the quantity you promised they would force to a height of 68 feet, but, on testing them, I am convinced that 50,000 gallons is not the limit of their power, whilst the quantity of waste water used in driving them is not equal to half the capacity of the 8-inch pipe by which they are fed, and I am inclined to the belief that a more simple and efficient pump cannot be found.

JOHN BLAKE, PATENT RAM WORKS, ACCRINGTON, LANCASHIRE.

The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2741.

No. 341.—VOL. XIV. {THIRD SERIES.}

SATURDAY, JULY 8, 1893.

{Regt. as a Newspaper. {PRICE 3d.
WITH SUPPLEMENT. {POST-FREE, 3d.

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"GARDENERS' CHRONICLE."

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CINERARIAS, same Price; also DOUBLE WHITE PRIMULAS, 6d. each. Package and Carriage free for Cash with Order.—JOHN STEVENS, The Nurseries, Coventry.

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ROEMER'S SUPERB PRIZE PANSIES.
The finest strain of Pansies in the World. Introducing and Grower of all the leading Novelties.
CATALOGUE, free on application.
FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

ORCHIDS.—New and rare species, a special feature. Catalogue forwarded post-free on application.
SEEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich, London, S.E.

100,000 FREESIA REF. ALBA.—Pure white, sweet-scented. Easy to grow, grand for cutting, 18s. to 26s. per 1000, 3s. 6d. per 100, carriage paid; 5000 Amaryllis in sorts, fine large bulbs, sure to please, 10s. per dozen. Money returned if not approved. 5000 Nerines, in three sorts, 30s. per 100, 4s. per dozen; 10,000 Pancratiums, in all the best sorts, from 25s. per 100, 4s. per dozen.
J. JAMES, New Malden, Surrey.

WANTED (in EXCHANGE for OTHER ORCHIDS), large and small Specimens of CYPRI-PEDIUM INSIGNE. Sizes and all particulars to—
F. SANDER AND CO., St. Albans.

For Present Sowing.
SUTTON'S PERFECTION PRIMROSE.—A splendid strain, selected from the largest and brightest coloured flowers of the finest form. Major-General Chichester, Avenue End, says:—"The Primrose seed you sent me has been most successful, and the plants are much admired."—
Price of seed 2s. 6d. and 1s. per packet, post-free.

SUTTON'S SEEDS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

CARNATIONS FROM SEED.—Seed of my own saving and hybridising, producing 75 per cent. of Double Flowers, equal to the finest-named sorts, but with greater vigour of growth and abundance of flowers. 25 seeds, 1s.; 100 seeds, 3s.; 500 seeds, 12s. 6d. Carnation Marguerita, flowering first season, 1s. per packet, post-free.
THOS. BUTCHER, Seed Merchant, Croydon.

40,000 CELERY, Clayworth Pride Pink, all transplanted, and extra stout, not drawn, 6s. per 1000. 50,000 Spring Broccoli, Cauliflower, Brussels Sprouts, Asparagus, Kale, Early and Ox Cabbage Plants, all 5s. per 1000. Thousand-head Cabbage, 4s. per 1000, all strong stout plants. Cash with order. (Name paper.)
G. YORKE, Plantist, Retford.

TO SAVE MONEY place your orders now.—
ROMAN HYACINTHS, first size, 10s. 6d. per 100; Poeticus ornatus, early pheasant eye, 3s. 9d. per 100; Campanelle Jonquils, 3s. per 100, for not less than 100. Trade Price on application.—**WALSHAW AND SON**, Scarborough.

TRADE.—CHRYSANTHEMUM, White
Madame Desgranges in bud. Good stuff, in 24's, per dozen, 9s. 6d. CYPERUS ALTERNIFOLIUS in thumbs, 8s. 6d. per 100. Packing free.
E. L. JONES, Clayton Nursery, Peckham, S.E.

ORCHIDS.—Many rare and choice Cattleyas Cypripediums, Dendrobiums, Odontoglossums, &c. always in stock. Inspection invited. Please write for LIST.
W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate London, N.

To the Trade.
RAPESEED and AGRICULTURAL WHITE MUSTARD.
H. AND F. SHARPE have to offer fine samples of **RAPESEED** and **WHITE MUSTARD**, suitable for Field Culture. Special quotations and samples on application.
SEED GROWING ESTABLISHMENT, WISBECH.

"KILLMRIGHT,"
For Destruction of all Insect Pests and Mildew.
THE STOTT DISTRIBUTOR CO. (Ltd.),
Barton House, Manchester.

HORTICULTURAL SHADINGS,
NETTINGS, TIFFANY, WADDINGS,
COTTON WOOL for Packing Flowers, CANVAS, TWINES, &c., manufactured and supplied wholesale by
JOSEPH COOKSON, 21, New Cannon Street, Manchester.

LAWN MOWERS.—The New Patent "EXCELSIOR" has the largest sale in the world, and is pronounced by all Gardeners to be the very best for saving labour. The Patent "NEW MODEL" is guaranteed to be the lightest working Mower ever made. Can be had of all Ironmongers and Seedsmen. Price Lists post-free from the Manufacturers, CHADBORN AND COLDWELL MANUFACTURING CO., 223, Upper Thames Street, London, E.C.
The Largest Makers of Lawn Mowers in the World.

J. WEEKS & CO., Horticultural Builders
to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom.
London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey.
Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

Thursday Next.

VALUABLE IMPORTED AND ESTABLISHED ORCHIDS, PALM SEEDS, &c.

MR. J. C. STEVENS will **SELL** by **AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY NEXT**, July 13, at half-past 12 o'clock precisely, an importation of **CYPRIPEDIUM SPECIES** (probably new), just received direct, in fine condition, without the least Reserve. Also a Collection of **ESTABLISHED ORCHIDS**, many in **FLOWER** and **BUD**. Also 20,000 fresh **SEEDS** of **KENTIA BELMOREANA**, 20,000 **FREESIA REFRACTA ALBA**, 2000 **Pearl** and **African TUBEROSES**, **GLADIOLI**, **NERINES**, **GARDEN BARROWS** and **SEATS**, &c.

On view morning of Sale, and Catalogues had.

Tuesday Next.

An Importation of 2000 **ODONTOGLOSSUM ALEXANDRE**, of the finest **Carderian** type. Every plant in good health, just commencing their growths, a number already rooting freely. They will be sold in boxes to prevent injury to the growths and roots. Also, 50 lots of well-grown **ESTABLISHED ORCHIDS**, **ORCHIDS** in **FLOWER**, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by **AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **TUESDAY**, **NEXT**, July 11, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Friday Next.

Important Consignment of PALM SEEDS.

32,000 **KENTIA BELMOREANA**.141,500 „ **FOSTERIANA**.8,000 „ **CANTERBURYANA**.273,000 **ARAUCARIA EXCELSA**.270 Clumps of **TODEA MOOREANA**.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by **AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY** **NEXT**, July 14, at half-past 12 o'clock.

Friday Next.

THE GILLTOWN COLLECTION OF **ORCHIDS** and **STOVE PLANTS**, by order of Major Borrowes, who is giving up their cultivation, comprising **LELIA ANCEPS**, **DAWSONII** type, several plants; **CATLEYA TRIANE**, in variety; **C. GIGAS**, fine varieties; **C. PERCIVALIANA**, **CÆLOGYNE CRISPATA LEMONIANA**, **CYPRIPEDIUM CAUDATUM**, **C. VILLOSUM**, **C. SPIRÆANUM**, and others; **DENDROBIUMS**, **COOL-HOUSE ORCHIDS**, also **STOVE PLANTS**, viz., **Anthurium Wardii**, **A. atrosanguineum**, **A. Rothschildianum**, **Paneratium**, **Caladiums**, &c.

Also 200 lots of the best pacho type of **ODONTOGLOSSUM ALEXANDRE**, by order of Messrs. Pitcher & Manda, together with 200 semi-established **CATLEYA TRIANE** and others; also **ORCHIDS** in **FLOWER**.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by **AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY** **NEXT**, July 14, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

WANTED, ONE or TWO ACRES of **LAND**, with **GREENHOUSES** and **COTTAGE** preferred, for **Nursery**. Full particulars.

J. R., 6, Palace Road, New Southgate.

FOR SALE, A SMALL NURSERY (chiefly **Glass**) and **JOBGING BUSINESS** in good Neighbourhood, with good and improving connection. Would suit **Beginner**. For full particulars apply in first place to—

H., Mr. G. Tuxford, 8, The Green, Mortlake, Surrey.

FOR SALE, A Bargain, in consequence of a death, the **LEASE** and **GOODWILL** of a **SMALL NURSERY**, established fifty years, comprising four **Greenhouses**, heated with **Hot Water**, and an **Eight-roomed House**, which could be let off at the whole rent.

Apply at 35, Grove Lane, Camberwell, S.E.

FOR SALE.—Capital NURSERY, situated in main thoroughfare, three minutes from Station, and 5 miles from Covent Garden, containing about 200 feet-run of **Glass**, heated by **hot water**; and about $\frac{1}{2}$ Acres of **Land**, well stocked, and in working order. **Low Rent**. Price as it stands, £175.—W., 41, Wellington Street, Strand, W.C.

NURSERY for SALE, or to be **LET**, near **Blackheath**, S.E., in working order. **Land**, 442 feet by 150 feet (more or less), at low ground rent. Contains seven **Glass Houses**, about 100 feet to 123 feet long, heated by three **Boilers**; three **Cold Frames**, about 100 feet long; **Planting Ground**, &c. **Stock** at valuation, if desired.—Apply to **THOMAS PEACOCK**, Warwick Square, London, E.C.

Island of Jersey.

Renowned for its Warm Climate and Early Produce.

TO BE SOLD, as a Going Concern, GENTLEMAN'S RESIDENCE,

Farm House and **Buildings**, **Gardeners' Cottages**, about 20 acres of rich soil, two **Vineries**, numerous **Glasshouses** (spans and lean-to's), **Forcing-houses**, **Pits** with **Hot-water Pipes**, good **Well** of **Water**, with **H.P. Engine**, **Belting**, **Shafting**, &c., complete for pumping water, together with the

VALUABLE STOCK

of **Bulbs**, **Ferns**, **Roses**, **Carnations**, **Lilies**, **Stephanotis**, **Tomatoes**, **Potatoes**, &c.; two **Horses**, **Van**, **Carts**, **Harness**, and **Implements** of **Trade**. **Lease** five years; **rent** only £150 per annum; no rates and taxes. **Price** for **Stock**, **Lease**, &c., £1,250. No law costs. The **Potato** crop on the land alone realised £300 this year. The above offers to an energetic man an exceptional chance of acquiring a small fortune in a few years.

Address, G. S. HENGISTBURY, Brentford, London, W.

Photos can be seen.

TO BE SOLD, a MARKET NURSERY; 420 feet run of **Glasshouses**, and about 70 feet of heated frames on two acres of land close to station, convenient for London or the North.

S. W. DANBY, Leagrave, near Luton, Beds.

FOR SALE.—A good FLOWER, VEGETABLE, and FARM SEED BUSINESS, West of England.—Apply, B., care of Messrs. Hurst & Son, 152, Houndsditch, London, E.C.

TO NURSERYMEN.—LEASE and **GOODWILL** of a capital Nursery Ground for **SALE**, a bargain, covering an area of two acres, adjoining Station in a high-class neighbourhood, North of London. Owner retiring in consequence of ill health. Six **Greenhouses** on ground. **Lease** 21 years. **Rent**, £75.

Apply to Messrs. **HARMAN BROS.**, Auctioneers, 75, Aldermanbury, Guildhall, E.C.

FLORISTS and GARDENERS.—A genuine OLD-ESTABLISHED BUSINESS. Standing Contracts from £100 to £150 per annum. Just out of **High Road**, **Kilburn**. **TO BE SOLD**, through ill health. Comfortable **House** and about a quarter acre of **Ground**, taking about £20 to £25 per week, with a good scope for improvement. **Price** £800, to include capital **House** and **Cart**. **Tools**, **Stable Utensils**, **Greenhouses**, **Frames**, **Forcing-pits**, **Stock**, **Goodwill**. **Fourteen years' lease**, at only £50 per annum. **Stabling** close by at £25 per annum, let off at 6s. per week.

Further particulars of **ERNEST OWERS**, Auctioneer, West Hampstead (Met.) Station.

The Watersend Nursery, Ewell, near Dover.

To **NURSERYMEN**, **MARKET GARDENERS**, and **OTHERS**.

FOR SALE, with **Immediate Possession**, **FREEHOLD PROPERTY**, comprising $\frac{1}{4}$ acres of **Fertile Land**, in good cultivation, with capital **Residence**, **Coach-house**, **Stabling**, five large **Greenhouses**, &c., within five minutes walk of **Kearsney Junction Station**, **L. C. & D. Railway**. Apply to—

Messrs. **WORSFOLD & HAYWARD**, Estate Agents, Dover.

FOR SALE, as a Going Concern, the EARLSWOOD NURSERIES, formerly the property of **Wm. Wells**. These Nurseries are situated about mid-way between **London** and **Brighton**, on the **Main London & Brighton Railway** (adjoining **Karlwood Station**), in the immediate neighbourhood of **Redhill** and **Earlswood Common**, and in one of the healthiest parts of **Surrey**. A very convenient eight-roomed **House**, and nine **Greenhouses** and **Forcing-houses**, standing on an acre of **Freehold Land**. They have one of the best Collections of **Chrysanthemums** in **England**, for which **ten Medals** and two **Diplomas of Honour** were awarded last autumn.

The **Houses** are carrying splendid crops of **Tomatoes** and other **Plants** for **Cut Flowers**, &c., and the **Business** has an **Old-established Connection**. **Present owner** is willing to continue if required.

Full particulars on application to **ROBERT WARNER**, Chartered Accountant, 300, Winchester House, London, E.C.

TO LET.—A first-class FLORIST'S BUSINESS, in a fashionable **Watering-place**. **Immediate possession**. **Stock** and **Fixtures** about £200. **Bona-fide**. **Exceptional opportunity**.

FLORIST, 2, Weston View, Parkend Road, Gloucester.

City of Peterborough.

To **NURSERYMEN**, **FLORISTS**, **SEEDSMEN**, and **OTHERS**.

TO BE LET, with Immediate or Michaelmas Possession, the well-known, old-established **Peterborough BUSINESS**, comprising a **NURSERY FARM** of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in **Pasture Land**, with good **House** and **Premises**, **Greenhouse**, **Pits**, &c., adjoining the **Town**. Also, a superior **SEED SHOP** and **STORE**, in a first class central position; and a **FLOWER-STAND** on the **Great Northern Railway Station**. The whole **Business** has for many years been carried on by **Mr. John House**, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, **FOX AND VERGETTE**, Estate Agents, Peterborough.

FOR SALE.—A splendid COLLECTION of **CACTI**, in good health. What offers?—**GARDENER**, **Mount Pleasant**, **Bishop Auckland**, **Durham**.

TRADE.—CLEMATIS JACKMANNI, strong plants, 8s. per dozen. **Cyperis**, **Aralias**, **Adiantum**, **Cuneatum** in 48's, 6s. per dozen. **S. HARBER**, Florist, Tettonhall, Wolverhampton.

SPLENDID LOT of well-matured **BULBS** of **NARCISSUS PRINCEPS** for forcing, price 7s. 6d. per 100; reduction on a quantity. Also **POETICUS**, 3s. 6d. per 100; **P. ORNATUS**, 4s. 6d. per 100; **LEEDSI**, 5s. 6d. per 100; fine mixtures for planting out, 1s. 6d. per 100; **STELLA**, 3s. 6d. per 100.

A. GRANT, Bulwick Gardens, Wansford.

STRAWBERRIES.—All the best varieties for **Forcing**, including **Noble**, **Vicomtesse**, **J. Ruskin**, **La Grosse Sucrée**, **Auguste Nicaise**, **President**, **British Queen**, and the new **ROYAL SOVEREIGN** (First-class Certificates, **Royal Horticultural Society** and **Earl's Court**), are now being layered in small pots for **Forcing**, at reasonable prices, and early orders are solicited to secure good plants. **Preliminary Priced LIST** for 1893-4 of all the best new and standard sorts now ready.

THOMAS LAXTON, Seed and Novelty Grower, Bedford.

BARR'S BULBS.—AUTUMN and WINTER-FLOWERING.—LISTS NOW READY of Beautiful **Crocus** species, **Autumn** and **Winter-flowering**, **Autumn Meadow Saffrons**, **Cyclamen**, **Guernsey** and **Belladonna Lilies**, **White Roman Hyacinths**, and other **Bulbs** for **Early Planting**.

BARR'S DAFFODIL CATALOGUE ready in August.

BARR'S GENERAL BULB CATALOGUE ready Sept. 1.

BARR AND SON, King Street, Covent Garden, London, W.C.

EXHIBITIONS.

NEWCASTLE-ON-TYNE SUMMER FLOWER SHOW, annexed to the Great Northumberland Agricultural Show, **JULY 20, 21, and 22, 1893**. Entries close **July 13**. For Schedules apply to **J. I. GILLESPIE, Jun**, Secretary. **Cross House Chambers**.

TRENTHAM and HANFORD HORTICULTURAL SOCIETY will hold their **SIXTH ANNUAL SHOW**, in **Trentham Gardens**, **JULY 20, 1893**. Prizes to the amount of £350 will be given. **Group** of **Plants**, 1st, £30 10s.; 2nd, £20; 3rd, £13; 4th, £9. **45 Roses**, 1st, £12 6s.; 2nd, £5; 3rd, £1. **36 Roses**, 1st, £5 and **National Society Gold Medal**; 2nd, £3; 3rd, £2. **Collection of Fruit** (9 dishes), 1st, £10; 2nd, £5; 3rd, £3. **4 bunches of Grapes**, 1st, £5; 2nd, £3; 3rd, £2. Schedules on application to—

JOHN TAYLOR, Hon. Sec., Trentham.

SALTERHEBBLE and DISTRICT (HALIFAX) ROSE SHOW.—THURSDAY, July 27. Schedules on application to the Secretary—**4, Savile Park Street, Halifax**. **JNO. E. BROOKS**.

NORTHAMPTONSHIRE HORTICULTURAL SOCIETY'S GREAT SUMMER SHOW.—Delapark, Northampton, **August 7 and 8**. £250 IN PRIZES.

For **Best Twelve Plants**, £15, £10, £5, £2 10s. **Central Group** for **Conservatory Decoration**, £3, £5, £2 10s. **Collection of Fruit** (eight varieties), £5, £3, £1 10s. **Twenty-four Roses**, £2, £1 10s., £1. **Collection of Vegetables** (twelve varieties), selected, £3, £2, £1. Entries close **July 28**. Schedules and full particulars from—**Northampton, July 1, 1893**. **W. B. TROUP**, Secretary.

SHROPSHIRE SOCIETY. Schedules for the **FLORAL FÊTE, SHREWSBURY** **August 23 and 24, 1893**, are now ready.

CASH PRIZES are offered in the Society's Schedule for 1893, amounting to nearly **SEVEN HUNDRED and TWENTY POUNDS**. Schedules sent post-free on application to—**Messrs. ADNITT and NAUNTON**, Hon. Secs., Shrewsbury.

LEEDS PAXTON SOCIETY'S CHRYSANTHEMUM SHOW.

TOWN HALL, LEEDS, TUESDAY and WEDNESDAY, November 7 and 8, 1893

For **Entry Forms** and **Schedules** apply to the **Hon. Secretary**, **W. HOLBROOK**, St. Ann's Villas, Headingley, Leeds.

FOR ORCHIDS and GARDENERS to **Grow Them**, apply to **SANDER'S**, St. Albans. The finest stock of **Orchids** in the **World**.—30 minutes from **St. Pancras**.

Plants Shipped to all Parts.

WATSON and SCULL, 90, Lower Thames Street, London, E.C., give special attention to the reception and forwarding of **Plants** and **Botanical Specimens** to and from all parts of the **World**. Be particular, and have them consigned to our **Care**, and save **Expense** and **Delay**. **Dealers** in **Virgin Cork**, **Raffia**, **Bamboo Canes**, **Garden Sticks**, **Palm Seeds**, &c.

FERNS! FERNS!!—Trade.—Greenhouse and Stove, 25 saleable sorts, in 2½-in. pots, 12s. per 100; 10 best **market**, sorts, in 48's, 6s. per doz.; stores, 6s. per 100. **Large Adiantum cuneatum**, value in fronds, 6s. and 8s. per doz. **Cyperus**, **Aralias**, **Grevilleas**, in 48's, good value, 6s. per dozen. **Palmis**, **Ficus**, & **Dracaenas**, 1s. each. **Hydrangeas**, **Pelargoniums**, **Marguerites**, 9d. each; in 48's, 1s. each. **P. tremula** and **A. cuneatum**, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—**J. SMITH**, London **Fern Nurseries**, Loughborough Junction, London, S.W.

BULBS.—Our special offer of **Daffodils**, and other **Bulbs** for early planting, is now ready. **Lilium candidum**, 10s. and 12s. per 100; **Lilium Harrisii**, 6s. to 10s. 6d. per dozen; **Roman Hyacinths**, 12s. 6d. and 16s. per 100, very scarce; **Narcissus** (paper-white), 5s. per 100; **Narcissus Double Roman**, 6s. per 100; **Gladiolus Colvili** (The Bride), lovely for cutting, 2s. 6d. per 100; **Iris hispanica** (the poor man's Orchid), finest mixed, 1s. 6d. per 100. Every article the best procurable.

J. R. PEARSON and SONS, Chilwell Nurseries, Notts.

Important to Mushroom Growers.

CUTHBERT'S SPÉCIALITÉ MUSHROOM SPAWN. Always alike; most productive. Hundreds of testimonials. Per bushel, 5s.

R. AND G. CUTHBERT, Seed, Bulb, and Plant Merchants, Southgate, N. Established 1797.

ALL GOODS DELIVERED FREE

on board, London, Antwerp, Rotterdam. £ s. d.
LILium HARRISII, 5-7 in. circ., per 1000 bulbs. 6 5 0
" " 7-9 in. " " " 11 0 0
" " 9-11 in. " " " 22 10 0
" " 11-13 in. " " " 8 7 6
AURATUM, 7-9 in. " " " 11 0 0
TUBEROSES, Pearl, select 4-5½ in. " " 1 10 0
" " seconds, 3-4 in. " " 1 2 6

Prices for **GLADIOLUS**, &c., on application.

F. W. O. SCHMITZ and CO., Jersey City, N.J., U.S.A.

To the Trade.

IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to **Albert Nurseries**, **Peckham Rye**, S.E.; or **Fiert**, **Hants**. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order.

E. D. SHUTTLEWORTH and CO., LTD.

Awarded **Silver-gilt Flora Medal** by the **Royal Horticultural Society**; also **Gold**, **Silver-gilt**, **Silver**, and **Bronze Medals**, **Prizes**, and **Certificates** at other **First-class Shows**. Our specialty—really good stuff grown for the **Trade**.

PEARSONS' CHEMICAL MANURE.

This Manure has now been before the public for five years, and has, from its intrinsic merits, almost without advertising, forced its way into the front rank. Extensive trials during above period have convinced us, that for efficiency and cheapness, there is nothing in the market to touch it; we having employed it with the fullest success upon Vines and other Fruit Trees, Pelargoniums, Fuchsias, Chrysanthemums, and almost all kinds of Greenhouse Plants. This opinion is supported by all the gardeners who have tried it, all being enthusiastic in its praise.

Per ton, £16; per cwt., 20s.; $\frac{1}{2}$ cwt., 12s.; 28 lb., 7s. 14 lb., 4s.; 7 lb., 2s. 6d. Sample tins, 1s. 3d.

Half-cwt. and upwards sent Carriage Paid to any Station in England, Scotland, or Wales.

Circular, containing further details, instructions, and testimonials, free on application.

J. R. PEARSON & SONS,
CHILWELL, NOTTS.

To Nurserymen, Gardeners, &c.

WANTED, the above to try SPENCER'S NEW FERTILISER, there being no acids or chemicals used in the manufacturing of this Fertiliser. Prize growers of hardwood plants and root crops will find this the only thing wanting, it being the most genuine and powerful Force yet introduced. Can be used in powder or dissolved in water—a special advantage. Sample cwt. bag sent to any part, price on application. Analyst report with each parcel. Apply, I. SPENCER, 54, Spring Street, Hull, Yorkshire.

C. BEESON'S MANURE, composed of blood and bone. The best Fertiliser for all purposes. Sold in tins, 1s., 2s. 6d., and 5s. 6d.; also in air-tight bags, $\frac{1}{2}$ cwt., 6s.; 1 cwt., 10s. Full directions for use sent with each tin and bag. 1 cwt. and above sent carriage paid; cash with order. C. BEESON, Bone Mills, St. Neot's, Hunts.

BONES! BONES!! BONES!!! Any size from dust to 1 inch. Dissolved Bone Compound, for Top-dressing. All at 10s. per cwt.; less quantity, 14d. per lb. Carriage paid on 1 cwt. Terms, Cash with Order. Special quotations for large Buyers. R. S. WILES AND CO., Bone Crushers, St. Albans.

CONCENTRATED MANURE. GLOBE FERTILISER.

When using this Fertiliser for Flowers, Fruits, and Vegetables, results are marvellous. Plants grown in the open air are equal in Bloom and Beauty to those grown in hothouses. Sold by Seedsmen, 1d. and 2d. Packets; 1s. 6d., 2s. 6d., 5s., and 10s. in Bags, or from the Sole Manufacturers, Carriage Paid. Cash with Order.

GLOBE MILL COMPANY, Stratford Market, London, E.

PATENT SILICATE MANURE.

Dress Your Vines and Tomatos with it now.

FOR

TOMATOS IN THE OPEN AIR,
Increases Size and Colour.

"Rose Villa Nursery, York, Sept. 27, 1892.

"Apparently a good Manure for the price charged.

(Signed),
"J. BACKHOUSE AND SON."

PRICES IN SACKS, AT WORKS—

10s. per Cwt.; £2 per $\frac{1}{2}$ -Ton; £3 15s. per $\frac{1}{4}$ -Ton
£7 per Ton.

ADDRESS—THE CHEMICAL WORKS,
HEMEL HEMPSTEAD, HERTS.



FOSTITE

The only existing remedy that CURES and PREVENTS Mildew, Oidium, Black Rot, and other Cryptogamic Diseases of the Potato, Tomato, Beetroot, Vegetables, Vine, Roses and other Flowers, Fruit Trees, Mould in Hops, &c.

FOSTITE raises the Vegetation, destroys Caterpillars, Fleas, Leaf Lice, Slugs, and all other Vermin on Plants.

Effective Distributors also sold.

A child can perform the powdering.

Prospectus free on application.

Sole Shipper and Manufacturer—

JEAN SOUHEUR,
ANTWERP (Belgium).

Reliable Buying Agents wanted everywhere.



ALBERT'S HIGHLY CONCENTRATED HORTICULTURAL MANURE.

A Chemically Pure Plant Food.

UNPARALLELED FOR ITS RAPID ACTION AND FRUCTIFYING PROPERTIES.

BEST and ONLY RELIABLE COMPLETE FERTILISER for all VEGETABLES, FRUIT TREES, VINES, FLOWERS, LAWNS, &c.

UNPRECEDENTED RESULTS obtained by its use.

For Prices and Descriptive Pamphlet, apply to—

H. & E. ALBERT,
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Responsible Agents wanted.

GARDENS INCOMPLETE

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THE "STOTT" PATENT DISTRIBUTOR,

IMPROVED GARDEN ENGINES,

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THE BEST INSECTICIDE:—

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F E E D M R I G H T.

FROM SEEDSMEN, NURSERYMEN, AND

THE "STOTT" DISTRIBUTOR CO., Ltd.,
MANCHESTER.

TOMATO DISEASE.

SAVE YOUR CROPS BY USING

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Sold in Cans, with full directions for use:—

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Publishing Office and Office for Advertisements,
41, WELLINGTON STREET, STRAND, W.C.

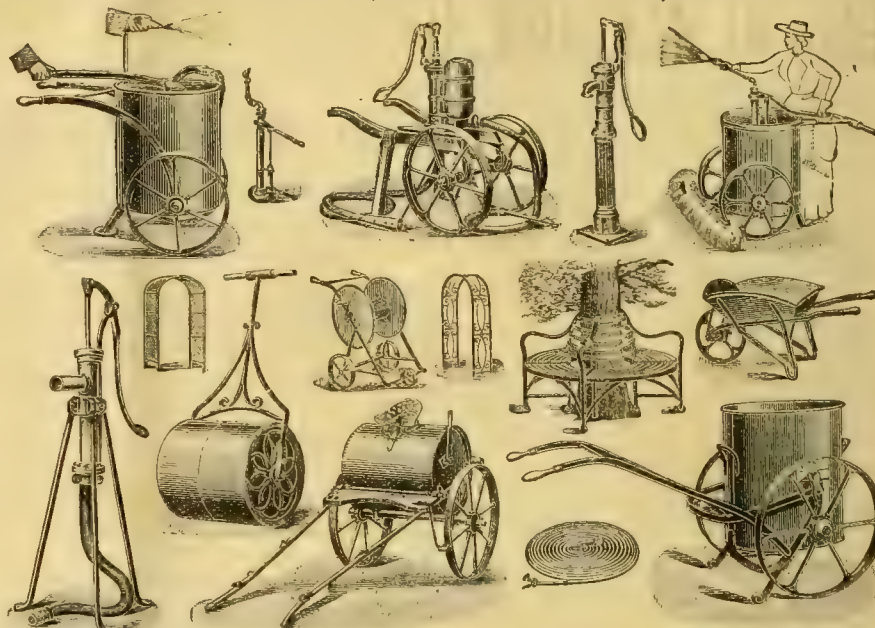
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Send for Illustrated Catalogue, free on application.

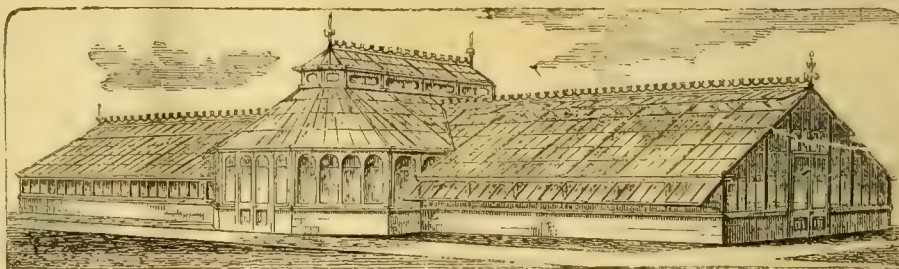


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Five 1st Prize Medals recently awarded in open competition.



Five 1st Prize Medals recently awarded in open competition.

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Vinerias, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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Plans, Estimates, and Catalogues Free. Customers waited on in any part of the Kingdom.

Our Maxim is and always has been—

MODERATE CHARGES. FIRST-CLASS WORK. THE BEST MATERIALS.

The "CLIMAX" WEED KILLER	INSECTICIDE	SUMMER SHADING	BLIGHT PREVENTOR
<p>Kills all Weeds on Garden Walks, Carriage Drives, &c., &c. Brightens the Gravel. One application will keep the Walks clear of Weeds for a whole season. Acknowledged by all who have tried it to be the most effective Weed Killer in the World. Compare the prices and using strength with others.</p> <p>ONE GALLON MAKES 51 GALLONS FOR USE</p> <p>PRICES.</p> <p>1 gallon, 3/- (tins included); 5 gallons, 2/9 per gall; 10 gallons, 2/6 per gall; 20 gallons, 2/3 per gall; 40 gallons, 2/- per gall. Carriage paid on 5 gallons and upwards.</p>	<p>NON-POISONOUS.</p> <p>The only Insecticide that improves and brightens the foliage while at the same time it is certain death to all insects.</p> <p>ONE PINT MAKES SIX GALLONS FOR USE</p> <p>PRICES.</p> <p>In tins: 4-pints, 1/3; pints, 1/9; quarts, 3/-; 4-gallon, 5/-; 1 gallon, 9/-; 6 and 10 gallon drums, 8/- per gallon. Carriage paid.</p>	<p>Convenient, inexpensive, and easily applied, lasting, and yet easily removed by rubbing at the end of the summer.</p> <p>PRICES.</p> <p>In packets containing 8oz., 6d.; 16oz., 1/- (postage 8d. extra); and in 7lb tins, 5/- each.</p>	<p>The most effective remedy for Blight or Fungus on Tomatoes, &c. Will not injure the Plants or Fruit.</p> <p>PRICES.</p> <p>In packets, 8oz., 6d.; 16oz., 1/- (postage 8d. extra); and in 7lb tins, 5/- each.</p> <p>NO TOMATO GROWER SHOULD BE WITHOUT IT.</p> <p>Its use will save pounds worth of Fruit.</p>
<p>COMPLETE SATISFACTION GUARANTEED TO USERS OF THE "CLIMAX" PREPARATIONS.</p> <p>PREPARED BY THE BOUNDARY CHEMICAL CO. LIMITED, LIVERPOOL.</p>			

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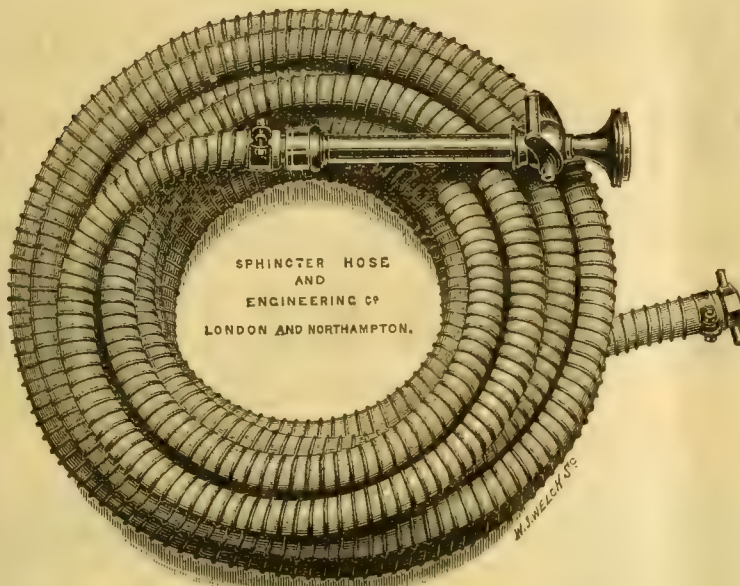
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10 Recent and Highest Awards at Principal Exhibitions.

CAUTION.—No Medal or Exhibition Award has ever been secured by any Firm except this Company for Sphincter Grip Hose, exclusively and distinctively.

Beware of Worthless Imitations and Foreign Importations, of which there are many, and of the goods supplied by any firm or firms making misleading statements. All this Company's Hose made from best Para Rubber, and English materials and labour only, to pass English Government Tests; this last feature in itself a guarantee of quality.

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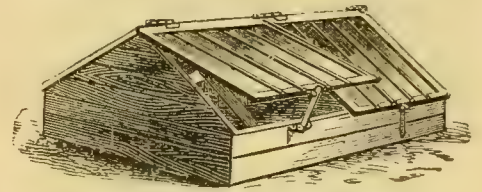
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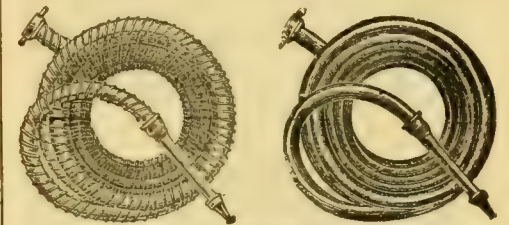
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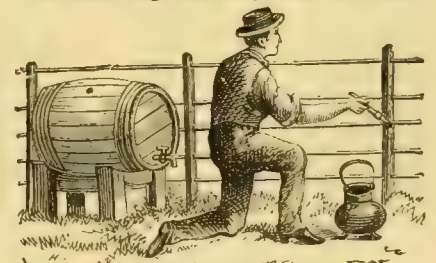
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The Excelsior Wire-armoured Hose secures a PERFECT grip, will not uncoil when cut at any part, stands enormous pressure, and wears for years.		Uninkable smooth surface Hose, will not crack, is made of pure rubber and canvas. Quality guaranteed.	
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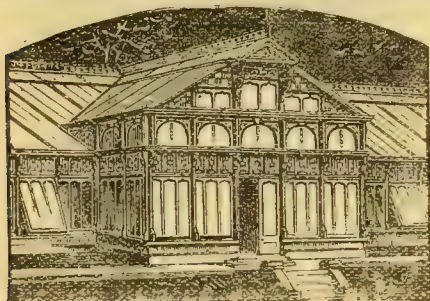
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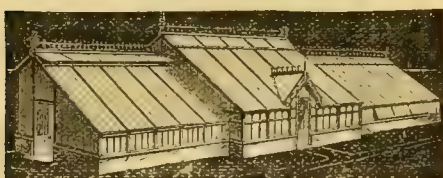
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Surveys made in any part of the Country.
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GREENHOUSES IN ALL STYLES.



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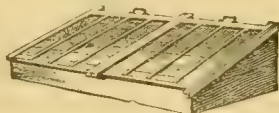
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And will be pleased to receive Orders for Immediate Delivery.

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NON-KINKABLE Red-Grey Hose.

In many cases preferable to
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SPHINCTER GRIP HOSE.

Other Makers awarded
Bronze Medal only.

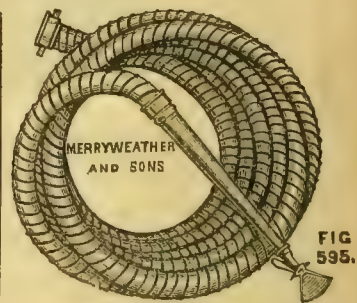


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SPHINCTER GRIP Armoured Hose.

Made by Merryweathers, the original
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*Important Reduction
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Quality maintained.*

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MERRYWEATHER AND SONS continue to guarantee all their High-class Garden Hoses to pass the severe British Government Tests.

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Have much pleasure in offering a splendid lot of SEMI-ESTABLISHED PLANTS, many in sheath, of their unrivalled

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Also, a GRAND STOCK OF MAGNIFICENT PLANTS, just arrived in marvellous condition, of

LINDEN'S ORIGINAL CATTLEYA WAROCQUEANA (labiata autumnalis),
which has produced the most brilliant varieties, including the glorious strain figured in *Lindenia*, and those chosen for *Reichenbachia*, &c.

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PRICE ON APPLICATION.

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The Finest Variety of Cabbage in Cultivation.

It is early, short-legged, and compact, grows rapidly to the weight of 10 to 15 lb., and is of the most delicious Marrow flavour. Should be in every Garden. Sow now. Seed, our true stock, with cultural directions, per ounce, 1s. 6d., post free.

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The most superb variety in cultivation; of fine globular form, with golden yellow skin; often grows to the weight of 2 to 3 lb. each, and of a mild, delicate flavour. Splendid for exhibition. Sow now. Seed, with cultural directions, per ounce, 2s., post-free.

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NOTHING is too small.
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THE TRADE SUPPLIED.

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PECKHAM RYE, LONDON, S.E.,
and **FLEET, HANTS.**

SOW NOW FOR SPRING FLOWERING.

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SILENE PENDULA COMPACTA.
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Per packet, 6d., 1s., & 1s. 6d., post-free, or in larger quantities. By making sowings of above now, beautiful displays may be obtained next spring. For all other Flower and Vegetable Seeds see CATALOGUE, sent post-free, on application.

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Shepperson's Novelties and Specialties.
PRIMULAS.—PRIMULAS.
The following splendid new varieties, mixed, Purity, alba magnifica, rubra, violacea, Chiswick Red, New Scarlet, and Bull's Premier, only 1s. 6d. per dozen; 10s. per 100, Carriage Free.

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Bull's unrivalled strain for large flowers and splendid colours, 1s. 6d. per dozen; 10s. per 100, Carriage Free.

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Lamb's Celebrated Giganteum Strain, the finest strain in England, 1-yr. old plants, only 2s. per dozen, Carriage Free.

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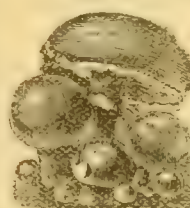
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THE Gardeners' Chronicle.

SATURDAY, JULY 8, 1893.

VICTORIA REGIA.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE great Water Lily of the Amazon still holds first place among the giants of the vegetable world which have been introduced into gardens. Other giants come and go; the Titanic Amorphophallus flowered once at Kew, died two years after, and is now no more except in its home, the swamps of Sumatra; big Wellingtonias, Eucalyptus, Palms, and other giant trees we know only from pictures, and the big Rafflesia from wax models; but the Victoria remains with us after nearly fifty years' acquaintance, and it can be grown to the same dimensions in a glasshouse in Europe as it attains in the tropics under the most favourable of natural conditions. In England it may be termed an expensive plant, as it requires a specially-constructed house and large tank, with a tropical temperature maintained at not less than 70°, and in some seasons at 80°; but it is worth the cost of its cultivation. The Botanic Garden of Kew without the Victoria would be shorn of as much interest as the Zoo would be without an elephant or a hippopotamus. The large leaves resting on the water, the beautiful fragrant flowers, and the exceptionally rapid development of the plant from a seed into full size within a period of about four months, these are characters which invest the Victoria with a special interest for lovers of plants. There are only two gardens in London in which the Victoria can be seen, viz., Kew, and the Botanical Garden at Regent's Park. Mr. Abraham Dixon, of Cherkley Court, Leatherhead, is perhaps the only amateur in this country who cultivates it. It used to be grown in the botanical gardens at Oxford, Sheffield and Birmingham. In my opinion, no public garden with any pretensions to an indoor collection of plants ought to be without a Victoria as a summer attraction. The largest tank I know of is in the Zoological Botanical Garden at Rotterdam, where three plants are grown, and where the leaves are so large and strong that three children from about ten to fourteen years of age have been supported by one leaf. It is also exceptionally well grown in the Royal Botanical Garden at Glasnevin.

The seeds of Victoria are kept in water always in a temperature of about 60°. They are sown in February in pans of soil placed in water kept at a temperature of 85° to 90°. As soon as the plants are large enough to handle, they are planted singly in pots in a richly-manured soil, and the water is kept at the same high temperature. In April the large tank is prepared. About six cart-loads of loam and cow-manure are placed in a pit in the middle of the tank, which is then filled with water, and heated to 80°. The plant is then placed in the soil at a depth of about one foot below the water. The house in which the tank is placed should be kept well ventilated, and top air left on all night in mild weather. By the end of June the plant should be nearly full size, and it will flower

soon after. Seeds are matured by plants cultivated at Kew. Some time ago we heard of a purple-flowered *Victoria* which had been discovered in South Brazil, and was called *V. argentinensis*, but on inquiry it turns out to be nothing more than a form of *V. regia* with a deeper tinge of crimson on the petals than usual. There is only one species of *Victoria*, and it is now cultivated or naturalised in most tropical countries. Its near ally *Euryale ferox*, a native of India, and remarkable for the hooked spines on the upper surface of its large leaves, and for its small purplish flowers, is grown at Kew in the same tank as the *Victoria*.

The structure of the leaf of *Victoria* is a remarkable instance of adaptation to circumstances. The under-side is clothed with strong spines, which protect the leaves from aquatic animals; and to protect

tection is afforded to it by spines on the upper-surface as well as below. *W. W.* [Our illustration is from a sketch taken at Kew by the late Mr. W. H. Fitch. On one of the leaves are shown, for the sake of contrast, the flowers of the large Australian blue Water Lily, *Nymphaea gigantea*, large indeed, but small in comparison with the *Victoria*. Ed.]

NEW OR NOTEWORTHY PLANTS.

CATTELEYA WARSCIEWICZII SANDERÆ.

At the meeting of the Orchid Committee of the Royal Horticultural Society, on June 6, Messrs. F. Sander & Co., of St. Albans, received an Award of Merit for the richly-coloured *Cattleya Warscewiczii*

of it yet known are in the Tring Park collection. Two points seem to connect *C. W. Rothschildiana* with the *C. W. Sanderæ*, viz., the dark purple on the exterior of the side lobes of the labellum, and its sweet odour. There can be no doubt that we have in this a distinct form of *C. Warscewiczii*, superior to any previous importations of the species. *J. O'B.*

LUSIA AMESIANA AND L. VOLUCRIS.

The two singularly interesting Orchids, of which we herewith give illustrations, were exhibited by Sir Trevor Lawrence, Bart., at the meeting of the Orchid Committee of the Royal Horticultural Society on June 20, when they each received a Botanical Certificate, and in our report we commented on the interesting structure of the flowers and their evident



FIG. 8.—*LUSIA AMESIANA*.

Sepals and petals whitish citron-yellow, streaked and speckled with purple-brown outside; labellum whitish-yellow ground, with purple-maroon spots.

FIG. 9.—*LUSIA VOLUCRIS*.

Sepals and petals cream-white; labellum intense purple-brown.

the upper surface, the margin is turned up all round, forming a rim several inches high, the outside of which presents a spine-clothed barrier to any swimming animals which might otherwise land on the leaf. The leaf is, therefore, a large round tray or shallow dish. Last year we tried the effect of pouring a quantity of water into one of these dishes, and although the leaf was intact, and the rim perfect, the water mysteriously escaped from the leaf as fast as it was poured into it. On closely examining it, we found the whole leaf was perforated with innumerable pinholes, no doubt intended to prevent the leaves from being practically submerged through filling with rain. The leaves when young are folded involutely, and are protected by the spines of the under-surface. The stalks of both leaves and flowers are thickly clothed with sharp spines. To prevent the leaves from crowding, the stalks continue to elongate long after the blade has matured. In *Euryale*, the leaf, which is nearly as large as that of the *Victoria*, is rimless, but pro-

Sanderæ. But little did they think that the next one to flower, and which comes from the collection of Hamar Bass, Esq., Byrkley Lodge, Burton-on-Trent, and from the skilful hands of the gardener, Mr. J. Hamilton, would so markedly eclipse the original. The Hamar Bass variety I consider the richest in colour of any known *Cattleya*—the *C. Hardyana*, to which it approaches nearest, not excepted—and the flower is large and of fine form. The broad sepals and petals are of a bright light shade of purple; the varying tints of the dark velvety crimson-purple of the lip it is impossible to describe, for rose, mauve, crimson, purple, and maroon seem blended in it. There are two small yellow patches in the centre of the lip, and some rich purple lines at the base. Out of this importation flowered the magnificent *C. Warscewiczii Rothschildiana*, which is distinguished by the large labellum being entirely of a rich purplish-crimson, and without the light patches seen in every other form, which renders it a distinct variety about which there can be no dispute. The only two plants

arrangement for facilitating fertilisation by insect aid. The petals of both species are honey-yellow, the labellum of *L. volucris* is brownish-purple, that of *L. Amesiana* being spotted with reddish-brown. Reference to our illustration will show in *L. volucris*, whose erected horn-like petals give the flowers such a singular appearance, that as the flowers attain maturity the labellum approaches the stem of the plant (which somewhat resembles the labellum in colour), so that insects ascending involuntarily pass over the lip and around or over the column, and thus the fertilisation of some of the flowers is assured. *L. Amesiana* is an introduction of Messrs. F. Sander & Co., and the plant exhibited by Sir Trevor Lawrence is the first to flower in England. Other species of *Lusia* are to be found in the fine and interesting collection at Burford, one of the oldest, as well as one of the prettiest being *L. Psyche*, which we gave an illustration of in 1865, and which we now reproduce.

The *Lusias* are very easy to cultivate, any warm or intermediate-house suiting them well.

ANTHRACNOSE OF THE VINE.

IN his sectional address before the American Association for the Advancement of Science, in 1887, Professor Farlow said:—"In his treatise on the fungi which attack the species of *Vitis*, published in 1879, Pirota enumerates 104 species of parasites. Between ten and twenty of these are fungi not found on *Vitis* alone; but this number is more than counterbalanced by species peculiar to *Vitis*, which have been described since 1879. It may be objected that some of the forms called species by Pirota are probably merely stages of some of the other species enumerated. Admitting that this is possible, and even probable, if we deduct half, or even two-thirds, which is liberal to the last degree, we still have thirty to fifty species of fungi, at the lowest estimate, which are peculiar to six species of *Vitis*, the number included in Pirota's observations. I have little doubt that the real number of species of fungi peculiar to the genus *Vitis* is much larger than the estimate I have just given. If the relative number of species known to occur on *Vitis* is greater than that of those known most on other genera, it is due rather to the fact that, from their importance to horticulture, they have been more carefully studied than because other genera are less frequented by special fungi." However annoying and destructive Vine diseases may be, they are not of that general and national importance to this country as they are in countries over which large tracts of Vines are cultivated for the sake of their produce for manufacturing purposes. In such countries as France, Italy, California, Australia, &c., the loss that is caused annually by diseases of the Vine must be enormous, and consequently the popular interest in their causes and remedies far greater than with us.

Nevertheless, although our national interest is less than in other countries, our individual interest is considerable in all that relates to Vine culture. It must be admitted that, in all plant diseases, as in all animal diseases, it is essential to successful remedy, that, first of all, the symptoms should be carefully studied, and a true diagnosis obtained of the character of the disease. We must first of all determine the specific disease, and then it will be easier to discover the cause, and propound a remedy. To this end it is desirable that information should be as widely diffused as possible, and as exhaustive as possible, of the varied phases of disease in important economic plants. No other apology need be urged for continual recurrence to the subject in such a journal as this. "Knowledge is power" is true emphatically in this case, as it is in many others, and nothing else will supply its place.

These remarks introduce us to one of the Vine diseases which had its origin in Europe, spreading thence to the New World and Australia, scattering destruction, and sparing not, and yet leaving our own islands free. At one time known as "Charbon" or "Brenner," it settled at last into "Anthracnose," and, under the latter name, is one of the standing Vine diseases of the United States. It is caused by a minute fungus, belonging to a destructive genus, which contains parasites incidental to many cultivated fruits. All the green parts of the Vine are subject to its attacks, from spring to autumn, and present the following appearances, which may afford a clue to its detection. On the shoots it first shows itself in small brown spots slightly depressed in the centre, with a slightly raised darker border; as these spots enlarge, the centre becomes more depressed, and of a greyish colour. The bark is at length destroyed, and the woody tissue beneath presents a scorched appearance. On the leaves its effects are similar, and when the disease is virulent, both stems and leaves succumb. The severity of the disease has, however, been chiefly manifest on the fruit. There is at first a small spot on the berry, with a greyish centre, and dark brown border. These spots enlarge, maintaining a rounded outline, and intermediate between the grey central portion and the brown border there is developed a bright red band. Under the action of the parasite

the berries wither and dry, being reduced apparently to mere skin and seeds.

The particular fungus which produces these results is *Glæosporium ampelophagum*, the structure of which must be revealed by the use of the microscope. There is very little mycelium, which is found beneath the cuticle, and at length little cells or cavities, with no determinate outer wall, make their appearance; from the lower portion of these cells arise numerous short delicate threads, each bearing a spore at its summit. All trace of these threads soon disappear, and the cells are filled to repletion with the minute spores, which are apparently involved in, and held together by a kind of mucilage. Then the outer cuticle is ruptured, and the spores ooze out at the opening, and lie upon the surface like a crust, which is readily dissolved and floated away by moisture. Each spore is an oblong body (5 to $6 \times 2\frac{1}{2}$ to 3μ), transparent and colourless, rounded at the ends, and sometimes contracted at the middle, and generally containing two spots,



FIG. 10.—ANTHRACNOSE OF THE VINE.

or nuclei. These spores are spread by dew or rain, to other and healthy spots, where De Bary demonstrated that they are capable of producing, within eight days, diseased and discoloured spots, like the original ones from whence the spores were derived. Professor Burrill states that "the disease can be readily transferred artificially from an affected to a healthy berry. It is only necessary to wet with water a diseased spot, and after stirring with a little brush, remove some of the water to a healthy fruit, where it may stand as a little drop. If this is done when the air is saturated with moisture, failure to communicate the disease rarely happens."* Germination takes place quite rapidly, and a germ-thread is formed, which penetrates the cuticle, so that beneath the surface the vegetative growth of a new pustule is commenced. Some idea of the size of these spores may be conceived when it is remembered that it would take four thousand five hundred of them, placed end to end, to extend one inch. Hitherto, there is no evidence that the disease has been found in Great Britain, although it has long been known in France, Germany, Italy, and Austria.

Proced. Amer. Pom. Soc., 1885, p. 49.

It had not made its appearance in the United States until 1883, and its advent in Australia has only been determined about twelve months. Hitherto it has not been reported from the Cape.

In the United States, the reporter to the Commissioner of Agriculture states that "Anthracnose prevails most in wet seasons, and in low situations, or upon poorly-drained land. Too high manuring, especially with fresh stable-dung, seems to favour its development." Keeping in view that preventing the deposition of rain or dew upon the foliage or fruit would be security against the distribution of the disease, it has been recommended that, wherever it can be done, inclosing the half-grown bunches of Grapes in paper bags would be a useful protection from infection.

In some parts of Europe there is a practice of bathing or washing the Vines in early spring, before the buds have commenced to expand, with a strong solution, containing 50 per cent. of sulphate of iron, which is applied with an ordinary mop, or a large sponge. When the young shoots have attained a length of 5 or 6 inches, they receive a good dusting with flowers-of-sulphur, whether the disease has appeared or not. If the disease then appears, sulphur is again used, with an addition of one-third or one-half its bulk of powdered lime. If this should be ineffectual, the succeeding dustings are composed entirely of finely-pulverised lime.

It only remains to be observed, as concerning the technical aspect of the subject, that some doubt has been expressed whether the fungus described by Prof. A. De Bary under the name of *Sphaceloma ampelinum*, having spores only half the size (*viz.*, $2\frac{1}{2}$ to $3 \times 1 \mu$), is really the same species, although it resembles it entirely in external aspect and results. We can only add that most viticulturists and mycologists now consider that there is only one species which possesses the characteristic features of the fungus of Anthracnose, which possesses, as far as recent experience goes, the larger-sized spores. We cannot attempt to reconcile the difference of dimensions, except to suggest that the smaller size may have been an error of measurement, rather than that the fungus itself should so soon have become extinct, or even so speedily evolved a higher development. *M. C. Cooke.*

DENDROBIUM DALHOUSIEIANUM AND ALLIED SPECIES.

THIS large-growing species is seldom seen in such good form as it ought to be, but it is such a distinct and handsome Orchid when well-grown and profusely flowered, that no collection should be without it. I have grown this class of *Dendrobium* for a quarter of a century, and should not like to be without them. They never fail us either when wanted for exhibition or other purposes. I had one plant of *D. Dalhousieianum* this season that carried upwards of thirty spikes of flowers, all open at one time. It is rather curious that, as far as I am aware, no Orchid-grower in England has been able to save seed with germinating powers from this species. I have tried to cross it with other *Dendrobiums*, and to all appearance the flowers fertilised showed by their early collapse that the operation had been effective; but the capsules did not swell, and died off in a week or more. Probably the treatment afforded them in our hothouses was not conducive to the development of seed as well as flowers.

When the flowers pass away, the plants should be placed in one of the warmest houses, and where there is a very moist atmosphere maintained. This type of *Dendrobium* requires a very long time to make the season's growth; even with all the heat we can give them, the growths are sometimes not made up by November. A very thin shade for a few hours at midday is all that is needed, and when in growth give plenty of rather warm rain-water to the roots; and after the house is shut up in the afternoon, the blinds should be removed, and the temperature by sunheat may range between 90° and 100° . The tops of the growing stems should not be far removed from the hothouse

roof, and if syringing does not keep them free from green-fly and thrips, fumigation must be afforded. After the season of growth, a decided season of rest, in a minimum temperature of 50° to 55°, with comparative dryness at the roots, will cause them to flower freely the following season. This applies to most of the *Dendrobiums*, even *D. Wardianum*, one of the freest to flower of any of them, will not do so unless rest comes after growth has been made in a high temperature and moist atmosphere. I remember on one occasion being much taken with the splendid-looking growths on some recently-imported plants of *D. Wardianum*; they were stout, and some of them about 3 feet long. I saw the plants were crowded closely together, and had made their growths at some distance from the glass, trained to sticks in an upright position. I bought half-a-dozen plants, and tested their flowering against our own plants, which had made their growth in baskets and shallow pans suspended from the roof-glass, and although the growths on ours were not nearly so long, they produced quite three times as many flowers. An amateur recently complained to me that his *Dendrobiums* did not flower freely; I found he obtained good growths, but kept the plants in a growing condition when they ought to have been at rest. *D. Dalhousieianum* requires to have its growths when in course of formation close to the glass; the tips within 3 inches of it; and gradually tie them down as they come into immediate contact with it. There is an excellent account of this species, with coloured plate, in Paxton's *Magazine of Botany*. It flowered at Chatsworth in 1844, and at about the same time at Messrs. Loddiges' nursery, Hackney, the great Orchid emporium in those days. It was recommended to be grown on blocks with sphagnum moss over the roots; but we find it does best, with plenty of pot-room, in peat and sphagnum about equal parts.

D. moschatum and its variety *D. cupreum* or *D. Calceolaria* of Hooker, belong to the same type as the above, and require very similar treatment. *D. moschatum* was first figured in the *Magazine of Botany* in 1836, and again Messrs. Loddiges claim to have been the first to flower it. The tall stems (6 feet in length sometimes) militate against this species coming into general cultivation, and, indeed, I do not think so highly of it as of *D. Dalhousieianum*; but when well managed, a flowering plant has an excellent effect in the centre of the middle table of our Cattleya-house. The flowers are certainly very fugacious, but I have kept a plant in flower for two weeks when it was required for an exhibition by placing it in a cool part of the greenhouse, where it was well shaded. This cool treatment when the plants are in flower does not injure any of the *Dendrobiums*, and when they are required for a special purpose, they may be kept back in this manner. I have had *D. Wardianum* flowering in good condition in June in the greenhouse. I may add, that the flowers keep all the better when the plants are in a comparatively dry state at the roots; a dry atmosphere is also very essential, nor should the plants be placed in a current of air. *J. Douglas*.

GROWTH AND CULTURE OF AZALEA INDICA.

(Continued from vol. xiii., p. 712.)

In the present article we have to consider the results obtained during the second and third years of growth of the *Azalea* plants.

In the month of April of the second year, the greater number of the young plants were covered with flowers; these flowers were found to contain about 6 per cent. of dry substance, and 2.8 per cent. of nitrogen. M. Truffaut states that he was much surprised to find that the flowers of *Azalea* contained 44.3 per cent. of sugar in their composition, and that 30.5 per cent. of this was cane-sugar, whereas previously it had always been considered of a glucose nature.

For the second year of culture the average of plants to the square yard was 157, and these were

found to contain in their different parts the following constituents:—

Parts of Plant.	Dry substance.	In the dry substance.	
		Nitrogen.	Mineral matter (ash).
In the Leaves...	Grammes. 1293	Grammes. 24.04	Grammes. 33.43
" Stems...	1007	11.27	42.30
" Roots...	993	9.53	52.63
Total ...	3293	44.84	128.36

It is of interest to notice that during the second year of growth of the *Azalea*, as was observed in that of the first year, the maximum of nitrogen is found in the leaves. While, however, in the first year the quantity of nitrogen contained in the roots was greater than that in the stems, the contrary was found to be the case during the second year of growth.

The mineral substances absorbed by the *Azalea* from the soil during its second year were as follows:—

Mineral Matter.	In Leaves.	In Stems.	In Roots.	In Total Plant.
Lime ...	6.31	9.18	1.12	16.61
Potash ...	2.96	6.00	4.36	13.32
Phosphoric acid ...	2.29	2.43	1.68	6.40
Iron oxide ...	0.57	0.72	0.94	2.24
Silica ...	15.37	11.50	41.05	67.93

These results prove that the Versailles leaf-mould provides even in the second year a sufficient amount of nitrogen for the requirements of the *Azalea* plant, although the Ghent mould places at the disposal of the plant a greater excess of this element. In regard to mineral substances, the two moulds furnish in the second year the following proportions:—

Constituents.	Ghent Mould	Maurepas Mould.
	Grammes.	Grammes.
Lime ...	110.11	55.68
Phosphoric acid ...	17.61	12.58
Potash ...	25.00	31.26

Each of these moulds provide the plants with a sufficiency of mineral food, but the Ghent soil gives much the larger quantity of lime and phosphoric acid; and it is important to note that the plants utilise more food during the second year's growth than during the first.

The author concludes, therefore, that, as during the second year's growth of the *Azalea*, the assimilation of plant-food is more rapid, it is necessary, for the purpose of bringing up the French moulds to the standard of the Belgian, that an application be made of phosphate of lime, with a smaller dressing of nitrate of soda.

It was found that at the end of the second period the plants had made twice as much dry-substance of roots as at the end of the third period in an equal area of soil, consequently the assimilation of food was facilitated, and explains the cause of the greater vegetative powers of the *Azaleas* during the second year of their culture.

THIRD YEAR OF GROWTH.

In the month of May of the third year, the *Azaleas* are planted in a bed of leaf-mould about forty plants to the square yard, this being the last change of soil to which they are submitted before their consignment for sale in the following September.

The amount of plant-growth produced during the third year is shown by the following results:—

Quantities in Grammes.

Parts of Plant.	Dry Substance.	Nitrogen in dry.	Mineral matter (ash).
In the Leaves...	1052	19.57	39.63
" Stems...	576	6.45	24.19
" Roots...	801	7.68	42.43
Total ...	2429	33.70	106.25

The mineral matter, on being submitted to analysis, gave the following constituents:—

Mineral Substances.	In Leaves.	In Stems.	In Roots.	Total.
Lime ...	7.30	5.25	0.90	13.54
Potash ...	3.51	3.33	3.51	10.35
Phosphoric acid ...	2.72	1.39	1.35	5.46
Iron oxide ...	0.61	0.41	0.72	1.74
Silica ...	18.39	0.70	33.19	52.28

These results show that during the last twenty-seven months of their culture, the *Azaleas* find in the leaf-mould in which they are grown a sufficient quantity both of nitrogen and of mineral substances to supply their wants, the Ghent mould as before giving the greater excess. The soluble plant-food is much less drawn upon for nutrition than during the second year.

The general conclusions of the investigation may be briefly summarised as follows:—

1. The leaf moulds, both of Maurepas and of Ghent, are sufficiently rich in mineral constituents, and that the nitrification of the organic nitrogen is active enough to supply all that is wanted by the *Azaleas*.

2. Ghent leaf-mould always furnishes the plants with a greater quantity of assimilative nitrogen, of phosphoric acid, and of lime.

3. It is during the second year of culture, that *Azaleas* derive from the soil the maximum of nitrogenous and mineral constituents.

4. *Azaleas* abstract from the soil the elements following in order of prominence—silica, nitrogen, lime, potash, phosphoric acid, and iron oxide.

5. In order to imitate in France, as nearly as possible, the Belgian horticulturists, who obtain such excellent results with *Azaleas*, it is necessary to add to the leaf-moulds obtained from the environs of Paris a certain quantity of phosphoric acid and of lime.

After the experiments made at Versailles in 1892, a manurial application was given to a two-years-old *Azalea* plant, planted in Maurepas leaf-mould at the rate of 155 grains of phosphate of lime and 300 grains of nitrate of soda on each square yard, which produced a very sensible effect, causing the plant to grow with exceptional vigour. The leaves became larger, and of a deeper green colour. Two prunings were able to be performed instead of one.

For several years it has been observed at Versailles that a mixture of mould and of dried blood applied as a top-dressing, produced an analogous effect upon *Azalea* plants, the colour being more pronounced, and the vigour greater. *J. J. Willis*.

(To be continued.)

NURSERY NOTES.

COOMBE WOOD JOTTINGS.

GIVEN a sultry afternoon, just previous to the late welcome rains, the hot sandy acclivities of Messrs. Veitch & Sons' nursery, Coombe Wood, did not seem to offer the best of inducements for an inspection of the varied vegetation that covered them. A very slight glance, on getting into the nursery, showed that if water was badly required by the stock, and the drought had stopped the transplantation, there was nothing whatever that showed suffering which the recent rains had not already alleviated. It was remarkable that no flagging of bush or tree was observable, but honeydew abounded on some of the deciduous trees, and growth was arrested for the time.

Flowering shrubs, the real object of our visit, were but scantily revealed, and those which were seen, if well blossomed, were lacking in the tints one is accustomed to see in normal seasons. The New Zealand Broom, *Nothospartium Carmichaelia*, with light mauve-coloured flowers, was noted in several examples; and alongside of it grew a plant, 4 feet in height, of *Eulalia japonica*, with leaves narrow, and semi-pendent, and in colour white and green.

A good subject as a solitary plant for a small lawn, the centre of a bed of flowering plants, or for filling a large vase in the open air or cool winter garden. Some *Genista tinctoria* gave grateful masses of a bright yellow tint; it is one of the latest blooming of leguminous shrubs of that colour. *Rhus Cotinus* var. *purpurea* differs from the ordinary form in the pinkish colour of its inflorescence, and it flowers whilst still young and of small size, whereas the type is not so precocious. *Clerodendron trichotum* was gone out of bloom, but it had been good. *Deutzia parviflora*, with leaves rough to the touch and double white flowers, is a very desirable shrub. *Cerasus serotinus* flowered unusually early, and had set fruits abundantly. This is a very fine ornamental tree. Trees and shrubs with coloured leaves in some instances show up well among the neighbouring green-leaved subjects. Of the former *Cornus Spathi*, an introduction of H. Späth, nurseryman, Berlin, is a good plant, the light yellow variegation being distinct and enduring. *Acer macranthum*, with young shoots of scarlet colour, as regards the rind, is one of the finest; the leaves are large and green. *A. Reitenbachi* and *A. Schwedleri* are two fine varieties, of large growth. *A. pseudo-platanus* (Sycamore) *purpurea*, so called from the fine purple colour on the lower side of the leaf, is a fine tree. The golden-leaved Alder and *Halimodendron argenteum*

perhaps, than any other Lime except that of *T. euchlora*, and it has a white felt on the lower side. The tree is truly pyramidal in form, and its leaves remain on the tree longer than those of any other species. *T. euchlora* is a good grower, and also keeps its foliage till late in the year. The bright green foliage of *Planera Kaki*, or what we may call from its appearance the Japan Elm, afforded a cheerful contrast with the dusty soil and the evergreens around. It is quite hardy, and a good grower. The collection of American and Japanese *Acers* is alone worth a journey at this season or in the autumn to behold. We remarked a fine distinct-looking Bamboo with black stem—an imported piece, which would form a capital plant for a group on a lawn, whether it grows as tall or not in this country.

ORCHID NOTES AND GLEANINGS.

CATTLEYA HARDYANA ×, STATTER'S FORM.

A MAGNIFICENT *Cattleya*, with white perianth-segments, the lip frilled, golden-yellow, and finely spotted in the throat, with the front lobe amethyst-purple. It is probably a natural hybrid between *C. gigas* and *C. aurea*. *Lindenia*, t. 373.

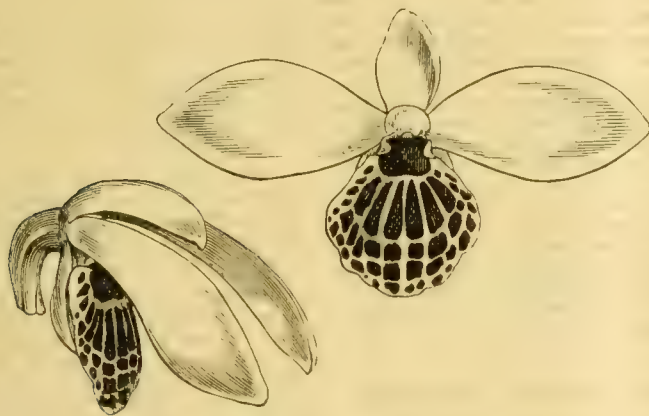


FIG. 11.—*LUISIA PSYCHE*. (SEE P. 32.)

are both of them worthy of general planting, doing well near water. *Castanea vesca*, with white variegation, is a desirable lawn tree, the markings of the leaf being clearly defined, and remaining till the fall. *C. v. pumila* is a shrubby variety.

Of purely green-leaved trees which are in presentable condition this season, and worthy of being made use of in gardens to a greater extent than at present, we may mention the following—always premising that in better soil than that of Coombe Wood is for plants not exactly peat-loving, they will succeed even better. *Fraxinus Mariesi*, a Japanese flowering Ash with graceful habit and big leaves; *Styrax obassia*, another large-leaved half-tree; *Acer argutum* and *A. parsonsii*, otherwise *A. japonica vitiifolia*, light green foliage of pleasing form; *A. carpinifolius*, a very distinct-looking tree; *Pavia rubra*, red flowers; *Æsculus macrostachya*, a shrub growing to a height of 6 feet, and usually broader than high, profusely covered with erect spikes of white blooms; *Æ. Hippocastanum Briottii*, with flowers larger than those of *R. H. rubicunda*. A fine plant, distinct, and of good port, is the Chestnut-leaved Beech; as is also *Gleditsia triacanthos macrocarpa*. *Koeleria paniculata* is a dwarf tree, with panicles of yellow blossoms, that remains comparatively unknown in gardens. It is quite hardy anywhere in these islands, is not particular as to soil, and stands drought without apparently suffering. *Tilia americana alba* is another subject which drought has little effect upon, the trees at Coombe having made fine foliage and long shoots. The foliage is larger,

LÆLIA OWENIE ×.

A supposed hybrid between *L. Perrini* and *L. elegans*. Flowers rich magenta-purple; lip with a white throat, front lobe rich magenta. *Lindenia*, t. 374.

CATTLEYA AMETHYSTOGLOSSA VAR. ROSEA.

Differs from the type in having the flowers suffused with rose. *Lindenia*, t. 375.

CATTLEYA MOSSIE VAR. MENDELI. *Lindenia*, t. 376.

PIERRE POIVRE (1719—1786).

(Continued from p. 8.)

PIERRE POIVRE was able to bring fine-rooted seedlings of Nutmeg trees (*Myristica aromatica*) and a large number of Nutmegs (seeds) fit for sowing, of which Buffon and de Jussieu were able to pronounce the good quality. He was unable to procure any plants of the Clove trees without actually proceeding to the Moluccas, because the Cloves were not sold in a fit state for germination. In spite of the essential services rendered to the French Company by Poivre, he found that, owing to internal dissensions between opposing interests in that Company, his projects for the naturalisation of spices did not meet with the support which he expected. Nevertheless, with pertinacious zeal, Poivre obtained from M. Bouvet de Lozier, who was in temporary charge of the Isle of France, a small vessel of 160 tons, in which he might proceed to the Moluccas and

collect the valuable spice trees which were there cultivated.

In 1754, he embarked on board his small ship, the *Colombe*, as it was appropriately named, after the dove which Noah set adrift in the vast ocean of the Deluge to seek for the precious Olive-branch. This wretched little vessel, ill-equipped, and feebly-manned, only reached Manilla ready to sink, and wanting in all necessities. Poivre, on his arrival, found the Philippine Islands in a state of uproar, the Spanish Government being engaged in serious quarrels with the native chiefs, and the King of Yolo a prisoner in the hands of the Spanish authorities. Although two of his officers deserted the *Colombe*, Poivre, after careening and repairing that vessel, re-embarked and proceeded on his voyage to the spice islands, in the midst of seas infested with pirates, which were wont to boldly attack large and heavily-armed ships. Probably, the very insignificance and poverty of his craft ensured its safety.

On reaching Timor, Poivre made friends with the native king and Portuguese governor of that island, and they procured for him several rooted seedlings of Nutmegs, and a quantity of Nutmegs fit for planting, besides some berries of the Clove-tree (*Caryophyllus aromaticus*), ripe and in a good state for sowing, but which were found too old to germinate. Returning safely to the Isle of France, and having delivered his freight of Nutmegs to the Legislative Council of the Island, he found to his grief that his friend, M. Bouvet de Lozier, was no longer acting as Governor, having been replaced by Colonel René Magon, Sieur de la Villebague, one of the Directors of the French Company, and accordingly he obtained leave to return to Europe, where his reputation had preceded him, and on reaching France he was accorded a liberal gratuity by the Controller-general. Poivre now established himself near Lyons, in a country house, where he devoted himself to study, and to the cultivation of rare exotics from all quarters of the world. He had, since 1754, been a correspondent of the Academy of Sciences; and the savant Jussieu regarded his letters as one of the valuable records of the Academy. He was now received as a member of the Academy at Lyons, where he read his "Observations on the manners and arts of the peoples of Africa and Asia." These were subsequently printed under the title of *Voyages of a Philosopher*.

While he was making preparations for his marriage, Poivre received pressing invitations from the Government to return to the Isle of France as Intendant Ordonnateur of the Colony, and with his wife he accompanied Colonel Dumas, the Governor to Port Louis in 1767. He found the islands had fallen into a state of decay, and he worked energetically to stimulate agriculture and horticulture. His address to the colonists is still extant. He showed much activity in introducing domestic animals and cattle from the Cape, Madagascar, and India, improved the fortifications, and succeeded in making the islands thoroughly self-supporting; so much so, in fact, that when war was imminent, and an expedition of 10,000 men was despatched to the colony, the Minister de Choiseul wrote to Poivre in respect to it:—"I know well that the troops are deficient of every necessary, but you are there, and we rely on your management." Poivre showed himself thoroughly equal to the occasion, and everything needful was provided and ready for the men on their arrival. *S. Pasfield Oliver, Captain late Royal Artillery, Anglesey, Gosport.*

(To be continued.)

MOVEMENTS OF THE LEAVES OF THE SENSITIVE PLANT.

M. GASTON BONNIER has lately made an important contribution to the study of the movements of the Sensitive Plant, and has given to the world the results that he has obtained while working in the Biological Laboratory at Fontainebleau, of which he is the director.

The numerous authors who have gone deeply into the study of the mechanism of this plant are at

variance concerning the influence atmospheric depressions are able to exercise on its movements. Dutrochet, for instance, says that when a vacuum is produced round the Sensitive Plant, the common petiole or leaf-stalk straightens out a little, while the folioles or leaflets behave as they do at night-time. Sachs, on the contrary, contends that the common petiole lowers itself a little; while M. Rabsch says that the folioles alone perform any movement.

It is a well-known fact, that if one blows gently on the leaf of a Sensitive Plant, the folioles will straighten themselves. If one blows a little harder, the petioles will draw together; and if, again, one blows still harder, the whole leaf will bend right over. When the Sensitive Plant is submitted to the action of the air-pump, and a more or less strong current of air produced, this current, independently of the depression of the atmosphere, can produce one or other of the effects mentioned above. M. Gaston Bonnier says that all these movements are in inverse proportion to those which result from the depression itself.

By manipulating the air-pump with more or less rapidity, M. Bonnier has been able to reproduce in the same plant the different movements described by the authors cited above. It will be seen that none of these descriptions correspond exactly to the effects produced by the depression alone. If a Sensitive Plant is placed in a conservatory at a temperature of 26° C., on a stand connected with the air-pump, and covered over with a bell-glass, an observer standing a little way off will see the following movements, if he have the aid of the telescope of the cathetometer:—As the pump is worked, the common petiole is raised to a position that it never attains in its normal state of wakefulness. The secondary petioles separate themselves gently from each other, and so do the opposite folioles. As M. Bonnier says, the leaves are in an exaggerated state of wakefulness, and he draws the following conclusions:—

1. A difference in the pressure round an intact Sensitive Plant immediately produces movements in the leaves which are in inverse proportion to the ordinary movements of the plant.

2. That there is a pressure above which no movements can be observed. It corresponds to the maximum point to which the leaf can raise itself.

M. Bonnier has also made some researches on the effect of the pressure in the interior of the tissues, and on the relation between this pressure and the different movements of the leaves. To measure the pressure, a peculiar kind of manometer is required; and as M. Bonnier had a number of Sensitive Plants at his disposal, he was able to arrive at conclusive results. His first proposal was to find out if a difference of pressure could be observed in the gland at the base of the pinnæ, or in the stem when the leaves were touched; and if this change took place, how it was produced!

Two Sensitive Plants, each furnished with a manometer, were chosen, as their variations of pressure at different hours of the day appeared much the same. It was found that during the ten minutes which followed after the leaves had been made to lower themselves by touching them, the pressure indicated by the manometer placed at the base gland was always less than the pressure observed in the same manometer during the ten minutes which preceded, or the ten minutes which followed. The conclusion arrived at was, that when the leaves of a Sensitive Plant are touched, the pressure is lowered in the gland, and that the pressure rises when the leaves return to their normal condition.
H. C. F.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

The chief operation during the next three months is watering the plants, some requiring copious watering, whilst others just sufficient to keep the

pseudobulbs plump. There are some which must be kept quite dry at the roots. After watering come damping and syringing, a point in accordance with the conditions of prevailing weather, and affording as much ventilation as is safe, it is not easy to make mistakes whilst the weather remains so warm as at present. All Orchids, which have numerous aerial roots, need considerable dampness in the house whilst new growths are being made. I am always satisfied with a Cattleya if it have plenty of roots, and these run over the sides of pots, this being a sure sign that others inside are making progress. Again, aerial roots, such as those possessed by Vandas, Aerides, some of the Oncidiums, Phalaenopsis, derive nutriment from the atmosphere during the next few months, and I make it a practice when damping down the houses in the evening to use some sort of liquid manure, and in my case it is that from the cowshed, and, failing that, a sprinkling of guano or of root, and sometimes fish potash-manure. It will be readily understood that these things cannot always be used, the smell being disliked by one's employer and his family. Calanthe Veitchii and C. vestita plants that are in full growth should be afforded plenty of moisture at the roots, and occasionally some weak manure-water. These plants do not like syringing, but they should be grown in a hot moist house. Plants of Dendrobium chrysanthum, D. c. album, and D. Statterianum, whose flower-buds are now growing fast, should be watered freely till the flowering is past, and then kept rather dry till growth begins anew, when the warmer part of the Dendrobium-house will be a suitable place for them. Miltonia Roezlii now having finished flowering, the plants may be potted or top-dressed. Annual potting is not advisable, but the operation should be done every alternate year. At the repotting, the compost is washed from the roots, and the plants dipped in a mixture of Fir-tree oil, washing them carefully, and then sousing them in clean water, and leaving them to drain for a time. The plants are then shifted into pots of various sizes, half filling the pots with clean crocks. The compost should consist of one-half good peat and one-half sphagnum moss, with some clean crocks well mixed with these. The sphagnum moss should be living. The dipping afforded the M. Roezlii is the only one the plants get in the year, and it is enough to rid them of yellow thrips. Odontoglossum Rossi, O. Cervantesii, O. cordatum, and O. maculatum may now be repotted, and kept on the shady side of a house till growth begins, when they should be washed in the manner above described.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

THE RASPBERRY.—Remove early after the crop of serviceable fruit is past, the canes which have fruited so that the young ones may grow vigorously; and cut away weak canes and brood if not required at a later date for forming new plantations. If stakes are used, which I still believe to be the best method of supporting Raspberry stems—select four of the best and least damaged canes, tying them somewhat loosely to the stakes. This applies to the summer-bearing varieties, as Prince of Wales, Eastolf, Red Antwerp, Baumforth's Seedling, &c., whilst the double-bearing kinds of which the new Superlative promises to be an acquisition, must be kept netted over where birds are troublesome. Without endeavouring in some way to prolong the Raspberry and red Currant season, it is this year likely to be a very short one. Red Currants offer little difficulty in keeping in good condition, yet how worthless they are by themselves, either in tarts or as dessert fruit! Should dry weather continue, water copiously, add more mulching too, and encourage new plantations to make good canes, which the dry weather has prevented them doing.

STONE FRUITS.—So long as the weather continues so very warm, the breastwood which has pushed forth since the trees were last trimmed should be left to afford shade to the fruits of Peaches, Nectarines, and Apricots, many of the earlier varieties being more liable to be injured in the skin by strong direct sunshine than the midseason and late varieties. After the fruit of Waterloo, Amsten June, and Alexander Peaches are gathered, afford the trees a heavy root-watering and syringing, and if red-spider be present on the foliage, rather than heavily syringe it, afford a light dousing, dust over with flowers-of-sulphur by means of a distributor, or mix the sulphur with water and syringe it on the foliage. In either case it must be left on the leaves for four or five days before it is syringed off; the trees may be kept clean afterwards

by syringing them three times a week for the next two months. Heavily-cropped late varieties of Peaches, Nectarines, and Plums should receive when being watered one-sixth part of liquid manure. Copious root-waterings form the best preventative against the blue aphid on Plum trees, and this year the insect is less troublesome than usual, at least in these gardens, by reason of the necessary heavy root-waterings. The season of that fine sweet Cherry, Bigarreau Napoleon, may be much prolonged by affording the trees an extra covering of fish-netting as a shading from the sun.

WASPS.—Much annoyance and labour may be saved later on by having all wasp nests destroyed early. To effect this, gas-tar may be poured into the holes leading to the nests. When the latter is higher than the entrance, the hole may be stopped with tow dipped in the same, and a piece of turf put over all, and stamped firmly into place. To make doubly sure, make a hole directly over the comb with a crowbar, and pour tar into it.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

CABBAGES.—A sowing of Cabbage seed should be made in all parts of the country, except the southern shires. It is the practice to sow the seed on a border from which some crop has been recently taken, but better results are obtained if a spot in an open quarter be selected. Moreover, the moisture in a border is extracted by the roots of fruit trees, so that frequent waterings become necessary. The ground should be well-prepared, and drills having been drawn at 6 inches apart, the seed should be sown very thinly, it being better to occupy a bigger bit of ground, and have strong plants, than to crowd them. When germinated, water the land freely, and if crowding is likely to happen, prick out the plants while still small. A small sowing of Red Cabbage should also be made for furnishing these for autumn planting.

SHALLOTS.—These should be lifted and spread out in an open shed, afterwards choosing the best and plumpest bulbs as sets for next season, which store away in a cool airy place; the others can be stored cool for use.

PARSLEY.—A sowing may be made at this season in an open spot, the plants to be transplanted to some sheltered place towards the end of the month of August, where they can be protected in winter. Plants from seed sown now will grow much faster during the autumn and early winter than those raised from spring-sown seed. If afforded plenty of room they will grow more freely when the winter is over, and will not flower so soon.

POTATOS.—Early varieties are now ready for lifting in south country gardens. The tubers for seed should be selected when the crop is dug up, spreading them out to become green, and storing them afterwards in a light airy place. The usable tubers should be exposed to light but for a very short period of time before storing them. Clear the ground of every bit of haulm, which burn, preparing the land at once, for Turnips or Onions, Lettuce, Winter Spinach, &c.

TURNIPS.—Where the ground is rich it is yet too soon to sow the winter crop, but in the northern parts of the country a good breadth may now be sown. It is well-known that Turnips are best when freshly drawn from the ground, but it is well to make provision for a recurrence of a winter like that of 1892–93. Thin those Turnip crops that are sufficiently forward, and keep them growing by copious waterings.

SPINACH.—There is not much demand for Spinach at this season, but when vegetables become less abundant, it will again be needed in the kitchen, and sowings should be made to keep up a small supply, thinning these early, to prevent spindling. Liquid manure may be employed freely to stimulate the plants.

SALADS.—Make sowings of Endive, and transplant any which are sufficiently large. Make sowings of the Brown Bath and Hicks' Hardy White Cos Lettuce, these varieties doing better in the autumn months than tenderer ones, especially if much rain should fall at that season. Radishes sow on a north or other cool border, also Mustard and Cress in a similar place. Attend to watering all salad plants whilst dry weather continues.

THE APIARY.

By EXPERT.

SHALLOW FRAMES.—The shallow frame, 5½ inches deep, is now largely used for the production of extracted honey, and possesses several advantages over the standard frame when used for the same purpose. Bees take to a super of shallow frames more readily in spring than they do to one containing frames of standard size, on account of the hive not being cooled to so great an extent. They are also able, for the same reason, to completely seal over the cells sooner when filled with honey so that these frames are ready for the extractor at an earlier date. Not being so weighty as standard frames would be when filled, they can be taken away from the hive bodily, and carried to the extracting room, after the bees have first been got rid of by the use of the "super clearer." They are also easier to uncup than standard frames, as the combs are built out, and frused more evenly and regularly. About the only drawback to these frames coming into general use is that another set of apparatus must be added to the list, complicating the machinery, so to speak. It should be the aim of beekeepers, if the industry is to be made a profitable one, to do with as few appliances as possible. Before deciding on the use of shallow frames, therefore, it must be borne in mind that they can only be kept for the particular purpose of extracting, and cannot, like the standard frame, be utilised for breeding purposes in the body of the hive at any time. Two shallow body-boxes 6 inches deep, will be required to each hive, in which to work them.

EXTRACTING HONEY.—Before commencing the operation of extracting honey, everything should be got in readiness. Two uncapping knives should be provided, one of which can remain in the hot water, and be ready for use by the time the other is too cold to work with. In order to work well, they should be made as sharp as possible. To keep the water in which the knives are heated at an uniform temperature, a small paraffin-oil stove, such a make as one known as the "Beatrice" being the handiest thing to use. A strainer, to catch the cappings, can be made by tying a piece of muslin over a wide-mouthed earthenware jar, a strip of board being fastened over, on which to rest the frame while slicing off the cappings, being necessary. To prevent the combs getting broken or damaged when in the extractor, they should be placed close up to the wires of the cage, and in turning the handle, the speed should be slow at first, gradually increasing to the full extent. As an additional precaution, it is advisable to turn the combs when about half the honey on one side has been extracted, as it is the weight of the honey on the other that causes the comb to be forced through the wires of the cage.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

ORCHARD-HOUSES which are filled with a variety of fruits require careful management at this season, as some fruits are ripening while others are still green. If trees with ripening fruit can be removed to another structure so as to have abundance of dry air admitted at all times, the difficulty will be overcome. But trees in pots, rooting through into the soil, or planted out in beds, have to remain stationary, and the individual plants must be dealt with, so far as possible, separately. If the black aphid appears, keep it in check by repeated applications of insecticide; but when fumigation can be put in practice, it is more effectual. Gishurst Compound-soap sprayed on the affected parts, and followed by dustings with tobacco-powder while the foliage is damp, will effect this object; but ripe and ripening fruit must be duly considered. Peaches retain the colouring of almost all of the insect destroyers. "Killmright" I have seen used without discolouring fine flowers; at Dundee, a friend showed me *Odontoglossum* flowers which had been syringed with this insecticide. They showed no bad effects whatever from the liquid, but cleanliness and proper use of water are the most important items of management in orchard-houses at this season. Old Mushroom-bed materials form a cleanly mulching which can be used where half-rotted farm-yard manure would rightly be objected to. Stop gross shoots, to keep the trees evenly balanced.

PINERY.—The heat of the sun will now generally keep the temperature high enough for Pine-apples, and fire-heat need be but sparingly used for some weeks to come. In few districts (especially in the North) can the fires be allowed to go entirely out,

sudden changes to dull and damp weather rendering their use indispensable, especially where fruits are swelling. More air may now be admitted to plants in every stage during July than at any other season, and by these means the plants may be induced to grow strongly, with stiff brittle leaves, and stout stems or root-stalks, which are tolerably certain to throw up fine fruit. A close high temperature to growing plants should be avoided, the weak resulting succulent growth defeating the object in view. Plants for fruiting early next year should at this time be well forward, and their pots well filled with roots, and ready to throw up fruit in August. All suckers which are of good size (none should be small when such can be avoided) should be potted into 7-inch pots—a useful size for those of good substance. Afford them a brisk bottom-heat, and some amount of shade from bright sun till the roots have pushed freely into the new soil. Keep every part of the structure moist, but do not let water get into the hearts of the plants. Fruiters should be kept at about 70° to 75° top-heat at night, with a rise to 90° or 95° by day at shutting-up time. The warmth for the young stock should not rise above 70° at night and 85° or so at shutting up.

VINES.—The period when the berries of Lady Downes' seedling Grape scald has arrived, and dryness, accompanied by air night and day, afford the only means we know of for warding off the evil. To this end, the heating apparatus should be kept warm during the night, and a chink of air left on. There is an idea that spotting of Grapes and scalding are the same. [Spotting is due to a fungus, and the conditions which favour the growth of the fungus are those which produce the spot. Ed.] While I have Duke of Buccleuch Grape in fine healthy condition, with no spots on the berries, a Vine of Golden Queen in a Muscat-house is much scalded, but a little more air, and less moisture, accompanied with heat in the pipes, stopped the further mischief to the Queen. The Vines of the Duke of Buccleuch are freely ventilated, and well watered during the period the berries were swelling, but when ripening begins, all were kept dry at the root, no surface dribbling at any time allowed, a damp, cold surface being conducive to the spotting of the Duke.

MELONS.—Those lately planted should be kept warm and moist till growth is free, then ventilated liberally, and an even bottom-heat maintained. When the plants are grown in pots, the temperature of the house or pit will keep the soil at the proper warmth. My plants grown on stages in pineries meet requirement very well, and this season crops which have been grown as indicated have been very abundant. The shoots should be stopped in due time, and when fruits show, the required number on a plant should be set at about the same time and in the forenoon.

CUCUMBERS.—Plants in full bearing should be well supplied with moisture at the roots, and the fruit thinned in due time. Avoid slow growth, and a cool, damp soil; and, on the other hand, want of water.

PEACHES AND NECTARINES.—The trees which are expected (during September and October) to ripen fruit under glass can scarcely be kept back this season. The ventilators should be kept open night and day. Leave no shoots but those required, and syringe freely.

PLANTS UNDER GLASS.

By BAILEY WADDS, Gardener, Birdsall Gardens, York.

ROSES.—During the present month plantations of Teas and other kinds of Roses should be made, and vacancies filled up. For this purpose strong plants which are growing in pots are best, and these do far better than winter or spring-planted ones, if attention be duly given to watering them in dry weather, and keeping them clean. The shoots obtained from these will afford good blooms the following spring, especially the varieties as Lamarque, Madame Caroline Kuster, The Bride, Maréchal Niel, Madame Falcot, Madame Lambard, William Allan Richardson, Francisca Kruger, Catherine Mermet, Réve d'Or, and Ma Capucine—the latter very useful in the bud as a button-hole Rose. Continue to water copiously Rose borders, and do what is possible to keep red-spider in check. Roses under clear glass have needed a shading of "summer cloud" or other light material. Here they grow well and flower abundantly under Hartley's patent rough glass. Pay attention to those growing in pots, which should now be plunged

in coal-ashes outside, supplied with manure-water, and freely syringed. Give the pots a turn often, to keep the roots from growing through.

FREEZIAS in pots may now be shaken out, and repotted into a mixture of good loam and leaf-mould, with manure and sand added. The bulbs should be sized, selecting those of one size for a pot, so as to have fine flower spikes of the same strength in one pot. The best size of pot is a 48, and one dozen bulbs may be put in each. They should be well-drained, the soil made firm when filled in, and the bulbs placed about a quarter-of-an-inch below the surface. After potting, place them in a cool greenhouse or pit, and keep the soil moist, but not wet. Freesias may be pushed on in heat as required. A few imported bulbs should be added to the stock every year.

LILIUM AURATUM, and all Lilies of the lancifolium section coming now into bloom, may be afforded liquid manure, and a small amount of shade, as they do not like too much sun on the roots. Those which have flowered should have old blooms removed, and the pots plunged out-of-doors, and water afforded till the bulbs are matured, when they may be repotted, and covered with about 1 foot of coal ashes, if early bloom is looked for. *Lilium Harrisii* for early flowering may be potted as soon as possible, and covered in the same way till the bulbs are well started.

THE FLOWER GARDEN.

By T. H. CRASP.

LAVENDER.—This plant, so much prized for its agreeable fragrance, may be easily propagated at this season by cuttings made of young shoots put into porous, sandy mould, under a hand-light, placed at the foot of an east or west wall. The handlight should be shaded when the sun shines on it, and the soil watered to prevent it getting dry. Twice a week the top should be taken off for a quarter of an hour. The cuttings soon make roots, and must then get more air, and soon afterwards full exposure. They may be planted out in the autumn or spring.

CAMPANULA PYRAMIDALIS.—Seeds of this beautiful old-fashioned bell-flower, useful in the herbaceous border as well as for pot-culture, should be sown in the open ground, or in pots or pans if preferred, using a rather rich sandy loam. Pots and pans, &c., should be placed in a cold frame, kept close, and shaded till the seed germinates, then affording air in an increasing volume. When large enough to be readily handled, pot off the seedlings singly, and stand them in a place away from the sun out-of-doors, where they may remain if plunged in coal-ashes, and afforded some light protection during the winter. When April arrives, plant them out in the open ground. Seedlings raised in the open ground may be pricked off into pans, and treated similarly, or pricked off into beds on warm borders, if slugs are not troublesome, affording slight protection from frost.

CONIFERS.—Seeds may be sown at this season. The more common species may be sown in the open ground in shallow drills, and the choicer ones in pans or large pots of sandy loam in a cold frame. Previous to sowing it is a good plan to immerse the seeds in water for a day or two.

ROSES.—Briars planted last winter for Rose stocks may be budded this month, should have all the small shoots removed, leaving from one to three of the strongest and best placed for budding upon. Aphid still infests the shoots of Roses, and ought to be destroyed by means of a wash of Tobacco-water and soft-soap. Cuttings of Roses grown under glass root in a gentle bottom-heat very freely at the present time, and every cutting which can be procured should be put in at once, for it is hardly possible to be overstocked with these.

BEDDING PLANTS will require constant attention in the matter of watering should the dry weather continue. Remove decayed blooms and foliage, as when a showery time does come, work in this department will greatly increase, lawns requiring more frequent mowings, and walks rolling and weeding. The season of blooming of Iceland Poppies, Canterbury Bells, &c., will be prolonged if the seed-vessels are removed when the blooms decay. The present time is suitable for selecting the varieties of these plants, and *Godetias*, *Clarkias*, *Antirrhinums* as seed-bearers.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

- TUESDAY, JULY 11 } Royal Horticultural Society, at Chiswick.
 WEDNESDAY, JULY 12 } Royal Botanic Society: Musical Promenade.
 SATURDAY, JULY 15 } Royal Botanic Society.

SHOWS.

- TUESDAY, JULY 11 } Wolverhampton Horticultural Society's Great Show (three days).
 National Carnation Society, Show in connection with the Royal Horticultural Society, at Chiswick.
 Harleston Rose Show.
 Wimbledon.
 WEDNESDAY, JULY 12 } Royal Caledonian Horticultural Society (two days).
 Rose Shows at Tunbridge Wells and at Earl's Court.
 THURSDAY, JULY 13 } Provincial Show of the National Rose Society, in connection with the Show of the Horticultural Society, Workshop, Notts.
 Rose Shows at the People's Palace (two days); and at Woodbridge, Suffolk.
 FRIDAY, JULY 14 } Helensburgh Horticultural.
 SATURDAY, JULY 15 } New Brighton Horticultural Society and Rose Show.

SALES.

- TUESDAY, JULY 11 } 2000 Odon'oglossum Alexandræ, at Protheroe & Morris' Rooms.
 FRIDAY, JULY 14 } The Giltown Collection of Established Orchids; also Palm Seeds, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°·3.

The fortunate visitor to the two best exhibitions of the Rose, under the auspices of the National Rose Society, that held on June 20, at the Drill Hall, James Street, Westminster, and the other at the Crystal Palace, on July 1, will have witnessed the two best metropolitan shows of the flower for the current season.

At the former, the exhibits were limited to Tea and Noisette Roses, and when the drought—which had then lasted for three months—is considered, it will be admitted that the display was of considerable merit, regarding the quality, size, colour, and finish of the blooms, and the size of the show as a whole.

To say that the blooms have not been surpassed would be a debatable statement, for 1893 has failed to be an ideal Rose year, the rain-drops and heavy dew-drops, that seem to bring out all the beauties of the flower, whilst they do really invigorate the plants and impart increased substance, and, we may assert, perfume to those flowers which possess this most desirable merit, have been absent over the greater part of the South, and a parched soil and our clumsy contrivances for affording moisture offer little compensation.

To suppose, even, that the watering-can and a mulch of manure! laid on thickly over the roots of our Roses is sufficient, is to immeasurably under-rate Nature's doings. Still, the rosarians have, in spite of the unkindly elements, done wonderfully well, and, as we have said, the Teas and Noisettes were beautiful in the middle of a rainless June; whilst at the Crystal Palace, Teas and H.P.'s were quite as good as could be expected. The exhibition was, as a whole, below its usual dimensions, owing to the inability of exhibitors to put up presentable stands of bloom, and perhaps to show such large numbers as in normal seasons.

The South countrymen had the mortification of seeing the best prizes go to the Northern and the Midland shires, whence came undoubtedly the finest and the freshest blooms; and amongst the prizes that went northward was the National Rose Society's Challenge Trophy, which fell to Messrs. HARKNESS & SON, of Bedale. The stands of this prize-winner were richer in hybrid

perpetuals than Teas or Noisettes, and in Roses of dark tints than light ones. The fine bloom of Horace Vernet in this exhibit obtained a Silver Medal. That almost new Rose of rich rose colour and grand shape when at its best, Mrs. John Laing, was likewise excellent, as were Alfred Colomb, Madame H. Jamain, Duc de Rohan, Ulrich Brunner, and Dupuy Jamain.

The next best man was Mr. B. R. CANT, who secured besides the 2nd place for seventy-two blooms, a Silver Medal for The Bride—the choicest Tea Rose shown.

The highest awards for forty-eight triplets went to Bedale, but that for as many single blooms and twenty-four singles to the Midlands.

One of the much-coveted honours—the Challenge Trophy for Amateurs, for the finest forty-eight blooms, shown in single trusses—was captured by Mr. LINDSELL of Hitchin.

Essex and Suffolk were fortunate in coming to the front in some smaller classes, beating the redoubtable Mr. SLAUGHTER from Sussex; but then Sussex has suffered lamentably from drought, and in greater degree than the eastern counties.

Speaking generally, the amateur contests were confined to residents south of the Humber, hence few prizes went North in the minor classes.

Mr. PRINCE, that strong exhibitor of Teas, was not present, and Mr. MATTOCK had to be satisfied with a third place; and Gloucestershire, another Rose centre, showed few Roses.

The Tea Roses in the large class were well shown by Mr. B. R. CANT, Mr. F. CANT, and Messrs. D. & W. CROLOFF far-away Dundee, among the traders; and by Messrs. the Rev. A. FOSTER-MELLIAR, O. G. ORPEN, H. V. MACHIN, Rev. H. BERNERS, JAS. PARKER, CONWAY JONES, A. TATE, Rev. J. H. PEMBERTON, and E. MAWLEY, amongst amateurs. The latter reside in a strip of the country running east and west from the German Ocean to the Severn, of less than 100 miles wide.

The sun's heat and the dryness of the air have told heavily on the blossoms of Teas and Noisettes, and in scarcely an instance were the blooms of the customary size, or with the looked-for thick substance in the petals. Some varieties seemed to have suffered less than others. These are Maréchal Niel, Edith Gifford, Comtesse de Nadaillac, Madame Lambard, Caroline Kuster, Madame Bravy, Souvenir d'Elise Vardon, and Marie Van Houtte, the cream of the Tea Roses.

Amongst new varieties, mention may here be made of that fine H.P. Mrs. R. G. Sharman-Crawford, a flower large, good in form, of a clear rose tint, rather deeper in the centre, and possessing some fragrance. Marchioness of Londonderry is of ivory-white, large, with stout petals, and fragrant. The striped rosy-purple Rose, Merrie England, has some promise, but there is the fact that it is striped against it. Helen Keller, pink in hue, and of fine shape, is a beautiful novelty, only we have already so many of this tint.

Of less new varieties, it was noted that Gustave Piganeau is finding favour with rose growers. It is an excellent, large bloom, not unlike Paul Neyron, and likely to take a high place on the exhibition table. The colour is light crimson, and it is spoken of as a Rose of floriferous habit, excellent for beds. Charles Gater is a fine crimson-coloured hybrid perpetual. Mrs. Paul (Bourbon), Duke of Fife, Paul's Early Blush, Marie Magat, Waban, were of fair quality. This by no means exhausts our list, but they are the best of the novelties shown.

As regards the summer bloom of south-country Roses, we have seen them at their best

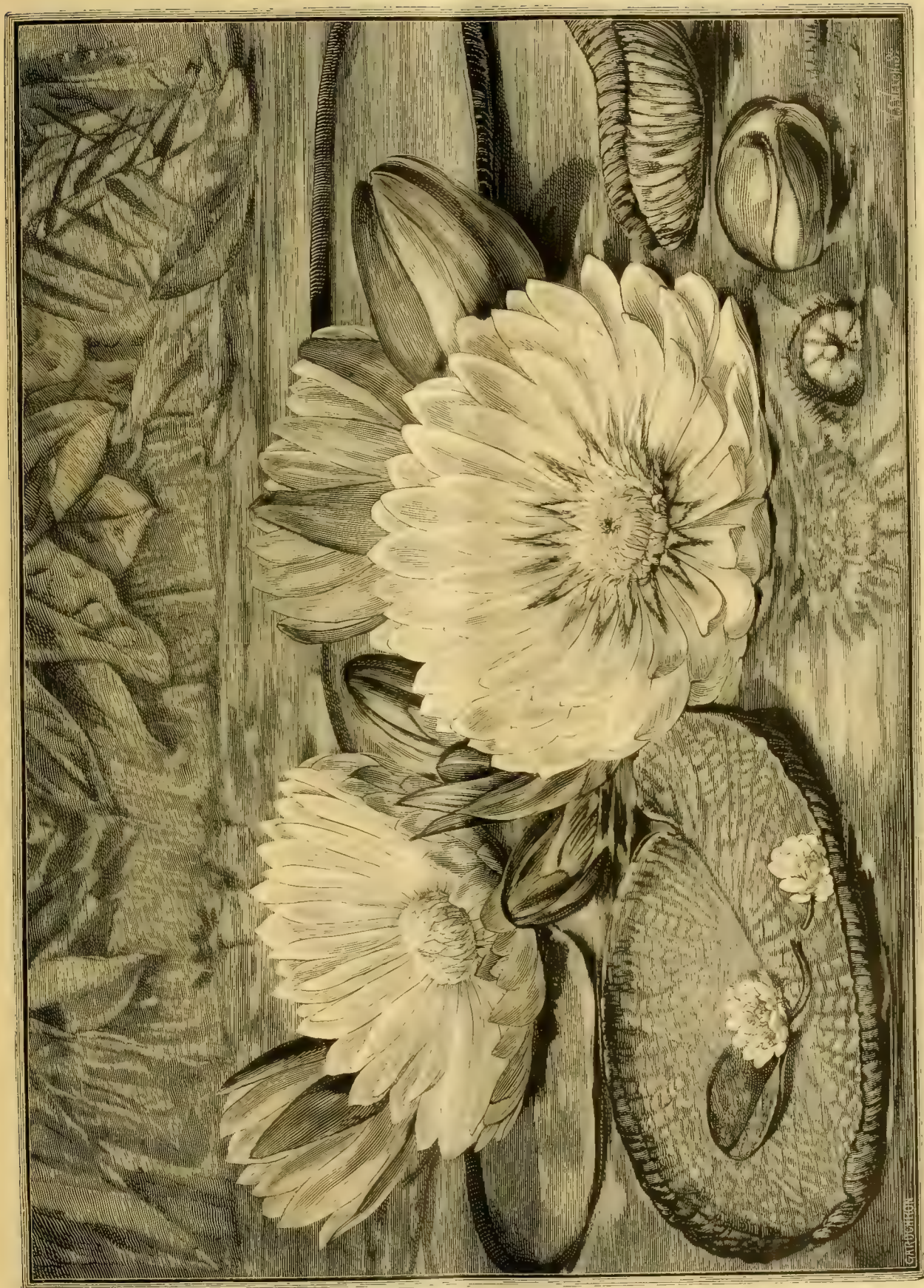
for this season, although cooler weather and heavy rains would maintain the plants in fair bloom for some time longer, and the renewal of exhausted mulches would tend to the same result.

It was remarked at the late show that dark-coloured varieties were exceedingly rich in colour, and did not appear to have suffered as dark flowers generally do from "burning;" perhaps the cultivators had taken especial care of them.

We ought to glean some useful lessons with regard to late *versus* early pruning this season, and doubtless it will be found that early pruning unduly hastened blooming, whilst late pruning has enabled good flowers to be secured at about the present time; but we are not good at prophecy nowadays, and many will say—had we but known!

THE WHITE ROSE OF YORK, says the *Plant-love and Garden-craft of Shakespeare*, has never been satisfactorily identified. It was clearly a cultivated Rose, and by some is supposed to have been only the wild White Rose (*R. arvensis*), grown in a garden. But it is very likely to have been the *Rosa alba*, which was a favourite in English gardens in Shakespeare's time, and was very probably introduced long before his time, for it is the double variety of the wild White Rose, and GERARDE says of it:—"The double White Rose doth grow wilde in many hedges of Lancashire in great abundance, even as Briers do with us in these southerly parts, especially in a place of the country called Leyland, and in a place called Roughford, not far from Latham." It was, therefore, not a new gardener's plant in his time, as has been often stated. I have little doubt that this is the White Rose of York; it is not the *R. alba* of Dr. LINDLEY's monograph, but the double variety of the British *R. arvensis*. The White Rose has a very ancient interest for Englishmen, for "long before the brawl in the Temple Gardens, the flower has been connected with one of the most ancient names of our island. The elder PLINY, in discussing the etymology of the word Albion, suggests that the land may have been so named from the White Roses which abounded in it—'Albion insula sic dicta ab albis rupibus, quas mare alluit, vel ob rosas albas quibus abundat.' Whatever we may think of the etymological skill displayed in the suggestion . . . we look with almost a new pleasure on the Roses of our own hedgerows, when regarding them as descended in a straight line from the '*rosas albas*' of those far-off summers." *Quarterly Review*, vol. cxiv.

FLORAL DECORATIONS AT ST. JAMES'S PALACE.—In view of the marriage of His Royal Highness the Duke of YORK and Princess MAY, the chapel, corridors, staircases, and other parts of the interesting but rather depressing-looking palace, were rendered beautiful with a profusion of flowering and foliage plants. These came in chief part from the royal gardens at Frogmore, and to Mr. OWEN THOMAS, the Queen's gardener, the credit for the exceedingly pretty decoration was due. The chief feature of the Chapel Royal was the tasteful drapery of the two square pillars of the window, consisting of white and crimson Roses in panels. The window was flanked with tall Bamboos, which arched over it. The recess under the window was furnished with cut flowers in tall glasses, and just above the altar an emblem was devised in white York Roses on a carpet of moss. The best bit of decoration, and also the most extensive, was that of the staircase leading to the chapel. The recess or well at the side of the stairs was entirely filled with a mass of flowering plants, Palms, Ferns, Crotons, Alocasias, Caladiums, &c., the whole forming, as it were, an avalanche of beautiful things. Conspicuous were *Clethra alnifolia*, *Marguerites*—white and yellow, *Fuchsias*, *Heliotropes*, *Carnations*, many *Hydrangea hortensis* and *H. paniculata*, *Lilium longiflorum*



VICTORIA REGIA, ROYAL GARDENS, KEW.

Harrisii, Gloxinias, Ericas, and Francoa ramosa (Bridal Wreath). Conspicuous in one corner was a fine bloom of the white variety of Nelumbium speciosum, the greatest rarity in the whole display, and of which we give an illustration, fig. 12. The colonnade was beautified by twining garlands of white and red Roses round the pillars, and suspending festoons from each pillar to the opposite wall, and baskets of Orchids from the ceiling over the festoons. Some of the windows looking east over the low roofs of the shelters in the courtyard were filled with Hydrangeas, Palms, Pelargoniums, Caladiums, Carnations, &c., with excellent effect. Immense quantities of Roses, Lilies, Stephanotis, Tuberoses, Carnations, and Gladioli were employed in the various decorations. A white Provence Rose, with a calyx almost like that of a Moss Rose, and a delicate perfume, did duty for the Rose of York, and Mr. OWEN THOMAS might well have said:—

"Then will I raise aloft the milk-white Rose,
With whose sweet smell the air shall be perfumed."

Perfumed the air certainly was, and even the London streets were redolent of Roses. What the Rose of York may have been, may be best gleaned from the quotation from Canon ELLACOMBE'S *Plant-lore of Shakespeare*, given above.

THE BRIDAL BOUQUETS.—The royal bride's and bridesmaids' bouquets were comprised of the following flowers:—H.S.H. the Princess VICTORIA MAY of Teck, the bride, carried a shower bouquet, in which the predominant flower was the old white Provence Rose, the white Carnation The Bride, Odontoglossums, Cattleyas, Orange-blossom, Myrtle and Lilies of the Valley (at this time of year scarce and very rare), interspersed with choice Ferns and delicate foliage. There were ten bridesmaids' bouquets comprised of similar flowers shaded with a pretty Cattleya Mendeli of mauve colour. H.R.H. the Princess of WALES and her daughter also carried bouquets, which were principally arranged with York Roses, white Carnations and the choicest Orchids that could be procured. T.R.H. the Prince of WALES and the Duke of York wore Gardenias in their coats. In all there were fourteen bouquets carried by as many royal princesses, a unique and unprecedented occurrence in the history of royal marriages.

BUCKINGHAM PALACE has not for many years been made to assume such a gorgeous appearance. At every turn one made, we were confronted by a galaxy of the choicest flowers. The most predominating variety of Rose was the old white Provence Rose. The Royal Banquet on Wednesday was served in the state dining-room. Here was displayed the magnificent gold plate interspersed with choice exotics. The Wedding Breakfast was served in the state dining-room, a series of round tables having been arranged in the centre of the room, and buffets on either side. At the back of these was displayed the magnificent service of gold plate. To accommodate the numerous guests invited by HER MAJESTY to the Royal Wedding, the spacious ball-room was set apart as an impromptu breakfast-room. Here some 400 to 600 guests were provided with breakfast. This room was, like the spacious state dining-room, most elaborately decorated with choice exotics; and as the state dining-room opens into the ball-room, or, as on this special occasion, it may be called, "Her Majesty's specially invited guests' breakfast-room," the effect of the combined elaborate floral display can be more easily imagined than realised. The whole of the floral decorations, including the wedding bouquets, were by Royal command entrusted to WILLS & SEGAR, of Onslow Crescent, South Kensington, who have for an unbroken period of upwards of twenty-six years supplied the floral decorations at Buckingham Palace, and for nearly twenty years to their Royal Highnesses the Prince and Princess of WALES at Marlborough House.

NATIONAL CHRYSANTHEMUM SOCIETY.—A special meeting of the General Committee and also of the Floral Committee will take place at the

Royal Aquarium, Westminster, on Friday, July 21, at 6 o'clock in the evening, to examine some frozen blooms of Chrysanthemums sent from Sydney (Australia), for the opinion of the National Chrysanthemum Society; and the transaction of general business. Members of the Society not being members of the general or floral committees are invited to attend at 7 o'clock to inspect the frozen blooms. The annual outing will take place on Monday, July 17, and those participating will assemble at Paddington Station at 8.10 A.M.; the train leaving Paddington for those playing in the cricket match, and such friends as wish to accompany the players, at 8.20. Those going by the second train should assemble at Paddington Station at 10.50 A.M.; the train leaving at 11 o'clock. Trains leave High Wycombe at 8 o'clock and 9.10 A.M. Arrangements have been concluded for a match of cricket to take place between members of the Aylesbury Floral and Horticultural Society and of the National Chrysanthemum Society; also to view the State Rooms of the Abbey, to look over the grounds and gardens, and to inspect the chairmaking factory of Mr. W. BIRCH, Denmark Street, near the Abbey. The charge for the day, inclusive of railway journey to and from Paddington Station, and dinner and tea on the grounds, will be 8s. 6d. Ladies are specially invited. During the afternoon, Mr. F. W. MILES, the proprietor of the Red Lion Hotel, will convey visitors to Hughenden Manor.

NATIONAL ROSE SHOW AT WORKSOP.—We are desired by Mr. J. SNOW WHALE to make the following known to our readers:—"I shall esteem it a favour if you will allow me to make the following communication to intending exhibitors through your columns:—To the train leaving King's Cross at 10.40 P.M. of July 12, the Great Northern Railway Company has kindly consented to attach a special van for Rose-boxes. This train will take up at Hitchen. It will be met at Worksop, where it arrives at 2.18 A.M., and the boxes can, if exhibitors so wish, go direct to the show-ground and be placed in charge of a night watchman. The next train out of King's Cross is 5.15 A.M. (morning of July 13). This, Mr. COCKSHOTT, the Superintendent of the line, tells me is one of the heaviest and fastest trains of the day, and on that account it will not be practicable to attach to it an extra van. Mr. COCKSHOTT will, however, make arrangements for conveyance of exhibitors' boxes by this train, if I can give him some idea of the number of boxes, and from what stations they will require to be conveyed. The train will take up at Retford at 8.20, and reach Worksop at 8.31 A.M. There is another train from Retford at 8.23, reaching Worksop at 8.40 A.M., and exhibitors joining the M. S. and L. system at Retford (especially those bringing much cargo) will find more accommodation by it than by the express. From Sheffield, exhibitors will find a van for their boxes on the train leaving at 7.15 A.M., and I am asking the Midland Company to make due provision on the train leaving Nottingham at 6 A.M., and Mansfield at 7 A.M. I shall be much obliged if exhibitors intending to make use of the 5.15 A.M. train will at once let Mr. GEORGE BAXTER (our Hon. Secretary, 69, Bridge Street, Worksop) or myself know as near as may be what they will bring with them, and where they will join the trains, so that I may be able to reply to Mr. COCKSHOTT'S inquiries. No doubt, so far as the Railway Company is concerned, the 10.40 P.M. train is best. It will be a help to the local committee to know the number of boxes they will have to meet by the other trains, but this is of less consequence."

GARDENERS' ORPHAN FUND.—The Committee met at the Horticultural Club, on the 30th ult., but no business transacted was of a formal character. There was a good attendance of members.

INTERNATIONAL BOTANICAL CONGRESS.—An International Botanical Congress will be held at Madison, Wis., U.S.A., beginning August 23, 1893, and continuing three or more days. All botanists are eligible to membership, and are earnestly

requested to attend the sessions, so far as possible. A membership fee of two dollars will be required. The purpose of the Congress is the presentation and discussion of botanical questions of general interest relating to the advancement of the science. It is expected that the International Standing Committee on Nomenclature, appointed last year at the Genoa Congress, will present its first report at this time. Papers embodying research will not be received, but such papers, whether by American or foreign botanists, may be presented before the Botanical Section or the Botanical Club of the American Association for the Advancement of Science, which holds its annual meeting preceding that of the Congress (August 17 to 24).

EMIGRATION.—We have received the following for publication from the Emigrants' Information Office, 31, Broadway, Westminster, S.W.:—

"Emigrants to Canada should start at once; there is a good demand for farm hands during the next two or three months, but after September the demand falls off. Government Agents now travel with Emigrants on trains going from Quebec to places west of Lake Superior, in order to give them advice and protection en route.

"Work in New South Wales, especially in towns, continues to be very scarce. The Government have reduced the salaries and numbers of their employes; wages have also been reduced in collieries and other private establishments. The best openings are for men who are experienced in fruit-growing, in the drying and packing of fruits for export, in the management of irrigated and unirrigated orchards, in wine-making, and in the manufacture and packing of butter and cheese. Domestic servants continue to be in steady demand throughout the colony. The towns of Victoria, and especially Melbourne, are full of men seeking work, and no working-man should go there at present. Several strikes have occurred, and salaries and wages, both in the public service and in private establishments, have been reduced all round. With the object of providing employment, and drawing men away from the overcrowded towns, the Government have thrown open more land for settlement, and have taken steps to initiate village settlements, to construct two or three country railways, and to assist the formation of Labour Colonies. In South Australia the demand for labour is very small, and has been badly affected by the depression in the mining industry, and the low price of wheat and wool. In Queensland the depression at Brisbane, Ipswich, Townsville, and other places still continues. The only demand for any kind of labour is for domestic servants, to whom the Queensland Government gives free passages from this country.

"In Western Australia the chief demand is for female domestic servants, who are offered free passages, for farm-labourers, and labourers on the Midland and other railways and public works under construction; the building trade is dull. In Tasmania, there is considerable depression in all trades at Hobart. Plenty of good labour is to be had in the Island at 5s. a day. New Zealand is in a prosperous condition, and offers many advantages to settlers. In Cape Colony a Labour Commission is now enquiring into the alleged scarcity of farm and other labour, and as to the advisability of encouraging the introduction of European emigrants. Trade has been bad at Kimberley, but at Cape Town the construction of the new sewerage works will provide work for many. In British Bechuanaland the railway is now being extended from Vryburg to Mafeking. In Natal there is no special demand for labour. New land regulations have been issued under which cultivation is no longer made a condition of occupation by purchasers of Crown Lands. Agricultural farmers and their families are now given assisted passages to the Colony on certain conditions.

"Official information has been received, that an Agent has been sent from Brazil to induce two thousand Scotch emigrants to go to the State of San Paulo in that country. In view of the suffering and loss of life, which have been occasioned by previous schemes of this nature, all persons are again most strongly warned not to go to this or any other part of Brazil."

A BIG OUTING.—The employés of Messrs. SMITH & Co., St. John's Nurseries, Worcester, had their 19th annual excursion on Monday the 19th ult. Llandudno was the place chosen for this year's outing, and accompanied by their wives and friends, the whole party numbering 450, travelled by way of the Severn Valley in a special train.

UNIVERSITY OF OXFORD.—In the first public examination in mathematics, JAMES FRANK HUDSON, Jesus College, is placed in the first class in the honours school. The fortunate winner of this honour is the son of Mr. J. HUDSON, gardener to Messrs. ROTHSCHILD, Gunnersbury House, Acton, and a frequent contributor to these columns.

RED CURRANT.—Mr. E. J. LOWE sends us specimens of the finest variety we have yet seen. The bunches measure about 4 inches in length, or, only

counting the fruit-producing portion, $3\frac{1}{2}$ inches, the number of berries on each cluster varying in the specimens before us from 15 to 18. The largest berries measure fully half an inch in diameter, are not quite globose but slightly depressed at the top, and of a dark red crimson colour. The flavour is not so acid as that of some other varieties. Mr. Lowe tells us that this handsome variety was the result of a cross between Raby Castle and the Cherry Currant.

ROYAL BOTANIC SOCIETY: EVENING FETE.—The favourable weather attracted a numerous company to the gardens of the Royal Botanic Society on Wednesday evening, the occasion of its annual evening fete. The spectacle presented was as brilliant as in previous years, and as the illuminations were on a more magnificent scale, the evening could hardly fail to be one of great enjoyment. The table and other decorations were, for the most part, extremely good, and constituted a great feature. The magnificent collection of Roses from Messrs. WM. PAUL, Waltham Cross, and the herbaceous flowers from Messrs. CHEALS' nurseries at Crawley, and from Messrs. BARR & SON, of Covent Garden, added materially to the brightness of the exhibition.

MARKET GARDENING UNDER GLASS.

(Continued from vol. xiii., p. 714.)

MR. EDMUND ROCHFORD, CHESHUNT.

A PLACE at present consisting of some 10 acres of glass, and situate about half a mile nearer Cheshunt station than that of Mr. T. Rochford's noticed in vol. xiii., p. 714. We give the locality, but would advise any who are contemplating making a visit to be sure that they will be granted admittance, for it is pretty generally understood that visitors are not greatly desired in these market-supplying establishments. All time and attention are centred upon growing the most suitable kinds of fruit and flowers, to the highest degree of condition, and at the least possible cost, and to presenting them at the market in the same condition they are in when leaving the establishment. A visit to the packing-sheds quickly convinces one of the importance attached to this operation in the best managed gardens. They are packing Tomatos, and these are sorted out into two and often three qualities. If the consignment is composed of one variety only, they will be put up as three samples, but two qualities. Thus, all perfect fruits will be classed into two samples, and both of these may be called "bests," and the other will be composed of fruits that are ill-shapen, or have some little disqualification. They are packed into small round hampers, each containing 12 lb., and are covered over with paper, the colour of which varies with the samples, and is understood as well by the buyers as by the producers. There must be no such thing as "topping"—a word used in the trade to describe the practice of placing a few superior fruits on the top—or the reputation of the sender is soon lost. The same care and attention is given to the packing of everything sent away, and in this direction has been made as great progress from the old system of non-selection as that made in any branch of the trade.

The first house we entered with Mr. Rochford was one on the ridge-and-furrow system. It has nineteen divisions, each of which is 260 feet long and 28 feet wide. The whole of this immense house is planted with Vines; they are only about two years old, and are just bearing a few bunches as their first crop. The centre of each division is planted with Tomatos, fruiting in the most liberal manner possible. Other houses, consisting of sixteen divisions, contain Vines about six years old. Most of these were bearing capital crops, but particularly some houses. In these the bunches and berries were quite extra, and the crop such as one seldom sees. Of varieties there were but three represented, Black Alicante, Muscat of Alexandria, and Gros Colmar.

There are fifty-seven divisions, varying from

90 feet to 120 feet in length, devoted to Cucumbers. Many of them have borne a first crop, and after giving a few more fruits, will give place to a batch of young plants that are being prepared for the purpose. Adiantum Ferns are a large feature here; they are grown for supplying fronds chiefly, and not so much for the plant trade. About 7000 plants of Solanum capsicastrum are in 5-inch pots, and are already covered with blossom.

Indian Azaleas and a large stock of zonal Pelargoniums, variety Raspail, are kept for supplying cut flowers. Plants for window furnishing and general decoration are grown in large quantities for spring supply. In respect to the fruit, the output of Grapes this year will be about 28 or 30 tons, but as so many of the Vines are only just coming into bearing condition, it will in two years be equal to 70 tons. The supply of Tomatos last season was about 75 tons, and of Cucumbers in the season about 1200 dozen are sent away each week. The best systems of heating have been adopted, and of supplying an unlimited quantity of water to the establishment. In all there are 112 houses, beside several pits.

(To be continued.)



NOTICES OF BOOKS.

POULTRY FOR THE TABLE AND MARKET. By W. B. Tegetmeier, F.L.S. (Field office, Bream's Buildings, E.C.)

THAT this work has reached a second edition is in itself a proof of its practical utility. The author has improved it with additional chapters and illustrations, and it is altogether a book which every poultry-fancier should obtain.

THE BOOK OF CHOICE FERNS. Parts 17 and 18.*

The work nearing completion lacks nothing of its former excellence of detail, and when it is completed it will be a great boon to gardeners and plantemen. Part 17 continues the genus *Nothochlæna*, and deals with *Oleandra*, *Oncidium*, *OphioGLOSSUM*, *Osmunda*, and *Pellaea*. Part 18 finishes *Pellaea*, *Platynerium*, and *Platyzoma*, and gets well on with the large and somewhat troublesome genus *Polypodium*. Part 17 gives fine coloured illustrations of *Lomaria discolor bipinnatifida*, *Hymenophyllum pulcherrimum*, and a view of the central avenue of the conservatory, Chatsworth. Part 18 gives a coloured plate of *Polypodium glaucophyllum*, and fine full-page illustrations of *Nephrodium lepidum* and *Lygodium japonicum*, and in both numbers, as in the preceding, the principal species are well illustrated throughout.

FLORISTS' FLOWERS.

GERANIUM MACRORRHIZUM.

I HAVE had for two or three years a plant of this species that was in flower all May. It thrives equally well in the mixed border or on the rockery; is only a few inches high, with a circumference of 4 feet, and very floriferous. The flowers are a dark rose-red, two or three on a stem; leaves palmate, with the fingers widely spread. The habit is not herbaceous, but shrubby. I recommend the plant to the favourable notice of any amateur

* *The Book of Choice Ferns for the Garden, Conservatory, and Stove.* (London: L. Upcott Gill.)

who may find it in a catalogue. It flourishes at a time when flowers in the mixed border are scarce. I believe I had it from Mr. Thompson of Ipswich. C. Wolley Dod, Edge Hall, Malpas.

CYCLOPS PINK.

It surprises me to find, judging from the visitors to my garden, that the Cyclops Pink is so little known. It is not a florist's flower, being strictly single, but it is novel, distinct, and ornamental. In substance it seems intermediate between single Pink (*Dianthus plumarius*) and Carnation (*D. caryophyllus*). The flowers are round and large, 2 inches across, with the petals a little indented, of various shades of purplish-pink, and a large eye of deep purple, from which, I suppose, it takes its name. The flowers grow on stiff stalks, less than a foot high, and whilst in this garden double Pinks and Carnations, if they flower at all, invariably burst and tumble about in great untidiness, this single flower is neat, whether growing or cut. The flowering lasts through June and July, and though apt to run into forbidden colours, a selection may be made to avoid this fault, as the plant grows easily, either from seed or cuttings. Mr. W. Thompson of Ipswich introduced it to me, either by seed or seedlings, three or four years ago, and I know nothing more of its history. Some of the single garden forms, or hybrids of *D. plumarius*, with long fringed edges and dark eyes, seem to lead up to this variety, which in size and substance far surpasses anything I have before seen in single Pinks. C. Wolley Dodd.

LATHYRUS ROTUNDIFOLIUS.

Suffer me to put in a plea for the more extended cultivation of that showy perennial *Pea* *Lathyrus rotundifolius*. It needs to be planted in good soil in an open position, and then when assisted by a spring mulching of manure, the plant grows into a large bush, and blossoms with remarkable freedom, its bright carmine flowers being very attractive. The plants rapidly increase in size, and adds annually to the abundance of its brilliant blossoms. Like most, if not all, the Everlasting Peas, brilliant sunshine operates to bleach its blossoms, but there is always a large surface of brilliant colour presented to view when the plant is at its best. Some years ago, I got a form of it under the name of *Lathyrus Drummondii*, which I take to have been a seminal variety of *L. rotundifolius*, but differing slightly in that the blossoms are rather deeper in colour, and it does not seed so freely. But of the great decorative value of either form there can be no doubt. R. D.

A TRAVELLER'S NOTES.

(Continued from vol. xiii., p. 570.)

MIYANOSHITA: May 2, 1892.—Since I left Yokohama, a week ago, it has rained every day except one. Not only has it rained every day, but in almost every instance, the entire day.

I first went to Kamakura, chiefly celebrated for its great bronze figure of Buddha, known as the Daibutsu, the interior of which is used as a temple. The figure is $49\frac{1}{2}$ feet high and 97 feet in circumference; but perhaps you may form a better idea of its size from the following dimensions (the whole is, of course, in proportion): circumference of thumb, 3 feet; length of eye, 4 feet, the eyes are said to be of pure gold. The figure is formed of sheets of bronze, cast separately, and welded together.

The Temple of Hachiman is also prettily situated near the same village, and approached through a fine avenue of Pines, which loses itself in two young groves of *Cryptomeria*. In front of the temple is a fine and historically famous Ginkgo nearly 20 feet in diameter; and not far distant on the banks of a Lotus-pond, are three Willows, stated by a guide-book to be nearly 700 years old.

Ilex integrifolia was flowering well in this part of the country, and so freely as to make it really pretty, large close bushes, some 20 feet high.

I clambered up the hill behind and found an *Iris* growing and flowering freely. I have since seen it in other places in far greater quantity.

Round this village and in the temples, Rhodæas, *Dendropanax japonicus*, Cherries, and Maples

(*palmatum*), are not uncommon. The temples alone have a few red Maples. Barley and Beans here, as in the whole Hakone district, are largely cultivated; the former looks magnificent. Rice is still backward.

At the next place I went to, I spent the night; it is a peninsula at low, an island at high water. On arriving, and going to the best native inn, we were informed the Empress was expected on the morrow, and we could not be taken in. We found quarters elsewhere, my first experience of eating and sleeping in Japanese style. Regarding the former,

Empress did not come. I went around the island—only a few hilly acres covered with an undergrowth chiefly of low Bamboo beneath Pines and Oaks. My next idea was to ascend Mount Ozama, 4100 feet. I got into an inn and waited one and a half days to go up the mountain, but when the third day opened with continued rain, it became clear I might wait for weeks, so I came away. The mountain is ascended by a series of steps, some three, four, or five every 50 yards or so, and is said to be a most fatiguing climb.

From Ozama I came here—a well-known health

flowering freely, and Violets were very common. The commonest plant of all was perhaps the one known as the Man's Bamboo, with short, stiff, slim, close stems some 3 to 4 feet in height. This covers the sides of many hills. *B. senanensis* is also met with. Around this district, known as the Hakone region, it is usual, in the early months of every year, to burn the low forest on the sides of the hills—many are, therefore, now bare, having as yet scarcely recovered. Near Lake Hakone is a fine avenue of *Cryptomeria japonica*, they must be over 100 feet high, the stems quite straight, and very



FIG. 12—THE WHITE FORM OF *NELUMBIUM SPECIOSUM*: USED IN THE WEDDING DECORATIONS AT ST. JAMES'S PALACE. (SEE P. 39)

I heartily support the opinion of Murray's new guide-book, "Many who view Japanese food hopefully from a distance have found their spirits sink and their tempers embittered when brought face to face with its unsatisfying actuality." Rice, fish, Bamboo and soup are good, and with a few things of one's own, one can do pretty well.

Sleeping accommodation is comfortable except the pillows, which are either of wood or of hard rammed straw. One sleeps on four, and under one padded quilt, and tries not to think who slept there before. These quilts are very warm and comfortable; but needless to say, the animal kingdom is largely represented.

Next day it rained the entire time, and the

resort—with sulphur springs and European hotels (managed by Japs). On the road we came through a magnificent avenue of Pines lining the old Toleaido route—the most frequented and famous road in the whole empire before the revolution of 1868 and the introduction of railways. About Miyanoshita, which itself is in a hilly district some 1400 feet above sea level, are several pretty walks to be made and mountains to be ascended—in fact, a flat walk is almost unobtainable. I have taken the two principal walks, one to Lake Hakone and back by the crater of Ojigoku, the other to the Temple of Saijōji.

The lake, a very pretty one surrounded by hills, is situated about 5 miles from here. On the road there, *Pyrus japonica*, only a few inches high, was

close together, seldom more than 6 feet between each tree, often closer. In order to return to Miyanoshita, I rowed across the lake, and noticed a pretty *Azalea* in flower on the banks. Its blooms are pale reddish-purple, perhaps rather washy, but they are produced freely, and when reflected in the water from the banks above are rather pretty. On approaching the crater of Ojigoku, or "big hell," the path is lined with *Pieris japonica*, usually about 20 feet high. It is growing in a very straggly ugly manner, its reddish-brown main stems being the most striking feature. I noticed a good deal of seed on these plants. The crater is a large open space, devoid of vegetation, and reeking of sulphur.

The Temple of Saijōji is perhaps a more interesting

excursion. One first ascends some 3000 feet to Myojin-ga-take, and then descends to 1400 feet, where the temple is situated, and has been there for nearly 500 years. Violets were flowering prettily all over the slope, and on and near the summit only were a dwarf Aster and a brown Adonis, both unknown to the guide and people in the village below. The Aster was rather small, perhaps an inch in diameter, and of the usual Aster blue. The Adonis was fair-sized, and the brown of a distinct pleasing shade. On nearing the temple we passed down a gorge, in which were great bushes of Aucuba vera, flowering freely, with branched panicles, growing in the shade of Cryptomerias, and with plenty of moisture they were wonderfully luxuriant. The temple is surrounded by a great grove composed of many hundreds of magnificent Cryptomeria japonica, with stems varying from 3 to 6 feet in diameter. It contains many buildings, staircases, and courtyards spread over a considerable area. In one of the courtyards is a nice clump of the black Bamboo, nearly 20 feet high; whilst growing around on every side in the wildest profusion, is the Iris described in the earlier part of this letter—thus flowering in quantity, it is singularly effective. *James H. Veitch.*

(To be continued.)

HOME CORRESPONDENCE.

EARWIGS.—I should think that if "C. C. B." (June 24, p. 754) were to strew a mixture of finely-sifted fresh-slacked lime and soot over his lawn, when damp, it would have the desired effect. Perhaps it would be better to do so at a time when the earwigs congregate thereon. I have never tried this remedy on earwigs, but I have on other garden pests with complete satisfaction. *H. W. Ward.*

A TULIP TREE IN A GARDEN.—Probably the finest specimen of a Tulip tree to be found in the United Kingdom is the one growing in the centre of the kitchen garden of The Hirsell, Lord Home's Berwickshire seat. Planted two hundred years ago, it has grown into a wide-spreading tree, a very conspicuous object in the view. Mr. Cairns, the gardener, put the tape 'round it at 2 feet up, and it girthed 23 feet. I question if it reaches a greater girth even in its native country, North America. The Liriodendron is beautiful at all seasons—in the spring when it puts forth its large bright green leaves, later on when it is covered with flowers, and in the autumn when the leaves become a bright yellowish colour. *Vagabond.*

THE DROUGHT, AND WATERING.—In reply to "D." p. 750 of *Gardeners' Chronicle*, June 24, I have used a fire-hose lately for watering as much as possible, and find it efficacious, the water used being in limited quantity was only available occasionally, and for a small part of the garden, but the benefit derived was immense, and greatly in excess of ordinary watering by means of watering-pots. The water was forced about 80 feet into the air, above the plot of ground to be watered, and descended like a heavy shower of rain, besides being warmed in its descent. The advantage of thoroughly soaking the whole of the land as far as the hose will reach is very great, the water being warmer than if supplied by means of a watering-pot, the air surrounding the plants cooled, and the plants refreshed for a considerable time if the watering is done of an evening. If we should get a succession of seasons like the present one, the water supply in many gardens will require putting in an efficient order. *W. H. Divers, Ketton Hall Gardens, Stamford.*

TROPEAEOLUM POLYPHYLLUM.—This plant deserves all that "Vagabond" says in its praise in the *Gardeners' Chronicle* of June 24, p. 750. It is certainly one of the most beautiful of our hardy flowers, and when well established, it grows and flowers profusely, and does not seem particular as to soil. I have seen it growing well on limestone and on clay; but if the plant at Scone bears "trefoil" leaves, it is very different to the one which I have always seen under this name. It fails to grow in some instances from the attacks of the small black slug and its relations, which seem to have an unflinching appetite for it when it first starts into growth, and I am not certain that the tuberous root is able to withstand severe frost, unless it is planted deeply or protected. As a British gardener, I would like to inform "Vagabond" that we do not deserve the slur he attempts to cast upon us, as I know of four places, within a short distance from Ketton, where the plant is well

grown; it is therefore not "neglected by every gardener except Mr. McKinnon. *W. H. Divers, Ketton Hall Gardens, Stamford.*

BONES AS DRAINAGE FOR CHRYSANTHEMUMS.—Mr. Dean's note on the above was of much interest to me, as I experienced the same thing with some large Crotons growing in pots that I had drained with bones in February last. The plants went on well for a fortnight after the re-potting, and then began to droop. Thinking the ball must be dry, a good soaking of water was afforded, but they became worse, and the leaves began to drop. On turning the plants out of the pots, the bones were observed to be quite decayed, and run together, a putrid mass, with an unbearable stench. Every root that had come in contact with or near the bones was dead. The plants were re-potted, and have not yet quite recovered their vigour. I may here say that these plants were drained with bones for years, in exactly the same manner as this year. On making a complaint to the seller, I was told they were extra strong, and that I must be a novice, and did not know the use of them, with which I quite agreed. I was pleased that the discovery was made early in the season, or all my Chrysanthemums would have been drained with these bones. *Hackwood.*

AZOLLA: A CORRECTION (p. 15).—Will you kindly allow me to say that careful examination and comparison with Strasburger's and Campbell's figures makes it almost certain that the species sent you is *Azolla filiculoides*, not *A. pinnata* or *caroliniana*. *Greenwood Pim.*

PROLIFEROUS TREFOIL.—Your notice of a prolific Strawberry induces me to send you a remarkable instance of a prolific Trefoil, in which all the forets are transformed into young shoots. It was growing in the heart of a Strawberry plant. The bed has been watered with manure-water. Perhaps a great check, and then a sudden stimulus, may in some part account for it. *Geo. Wall.* [A very good example of the substitution of leaves for flowers. This Clover, *T. repens*, is very subject to the change. *Ed.*]

FRUIT GROWING AT ONSLOW HALL.—The cultivation of fruits at the above place is being carried on with energy and intelligence, the information given by the county council lecturer having evidently afforded the gardener a decided stimulus in this direction. The Apple and Pear trees in the open quarters of the garden, bushes as well as pyramids, espaliers, and trained trees, have been partially lifted, the roots pruned as regards the larger ones, and some of the sandstone rock, which contained a large quantity of iron, was removed from about them, its place being taken by suitable kinds of soil. The trees bear evidence of the beneficial nature of the work done, the present season's growth looking of a healthy colour. The caterpillars have given infinite trouble this year, but having been kept under, the damage done is not great. The crops of Apples and Pears are good, and in many instances they have had to be thinned, as also the fruits on Plums and Apricots on wall trees. The paths over the roots next to the fruit wall were mulched with manure upon which burnt earth or refuse, of which a quantity was kept in an open shed ready for use. This is a valuable manure for fruit trees, a fact which the writer has proved for years past in Kent. This burnt earth, &c., was put over the mulchings of other fruit trees in the open quarters, the manurial constituents being carried to the roots by rain and artificial waterings. Splendid crops of White and Red Currants and Gooseberries (Red Warrington) were noted upon trees trained on a north wall, and much care was bestowed upon these fruits. I noted the following varieties of Apples showing promising crops: Ribston Pippin, Irish Peach, Gladstone, Waltham Abbey Seedling, Cox's Orange Pippin, Duchess of Oldenburg, Keswick Codling, Lord Suffield, Lord Grosvenor, Court of Wick, Tower of Glamsay, Northern Greening, Blenheim Orange Pippin, Margil, King of the Pippins, Golden Noble, Lord Derby, Warner's King, Grenadier, Wellington, Ecklinville Seedling, Lane's Prince Albert, and Bismarck. Pears in good bearing were Winter Nelis—a variety that is thought much of and found to do well here, Marie Louise, Jargonelle, Louise Bonne of Jersey, Duchess d'Angoulême, Doyenné du Comice, Josephine de Malines, Olivier de Sèrres, Beurré Diel, Williams' Bon Chrétien, Glout Morceau, and Catillac. Large supplies of soap-suds and farm-yard liquid manure find their way to the fruit trees. The Strawberries, which

were doing well out-of-doors, were Noble, President, Sir Harry, and Waterloo. This last, considered to be one of the best late varieties, was planted in large numbers upon a northern aspect. John Ruskin is condemned because of its liability to get mildewed. Mr. Backhouse, the head gardener at Onslow, is a ready worker for the development of hardy fruit cultivation, and the fruit trees under his care bear testimony to his determination to follow improved methods. *R. S.*

RAISING NEW VARIETIES OF CYPRIPEDIUMS.—I find that it takes about nine months to ripen the seeds of these plants from the date of fertilisation, and about the same length of time to germinate; and from one seed-pod I have had two plants, which flowered the second year, whilst others, out of the same pod flowered in the fourth year. From one lot of seed the plants and flowers will vary in size and colour, and some will be more robust than others. I have a large number of crosses, and my late employer, Major Marwood, who was a great lover of Orchids, gave me much encouragement in the matter of raising new varieties. Of these I may mention *Cypripedium Marwoodi* × *niveum*, as seed-bearer, crossed with *C. Harrisianum*. It has three flowers on one stem, and is in the way of *C. Aylingi*—the best I have ever seen. *C. Horneri* = *C. Spicerianum* the seed-bearer × *C. Harrisianum*, very good. *C. variety* = *C. Boxalli* seed-parent × *C. Lawrenceanum*, a very good large flower. Two of this cross have flowered. *C. variety* = *C. ciliolare* × *C. Spicerianum*, the seed-bearer. No. 5 seedling is a very good-looking plant, but it has not flowered; it was obtained by crossing *C. Curtisii* the seed-parent, with *C. Roezlii*. I have several others which I expect will flower this season. The *C. niveum* seed-parent was crossed with *C. Druryi*, and the seed resulting from this cross was sown in September last year. It is now germinating. I shall be glad to furnish further information on this subject if you would care to publish it. *H. Horner, Marwood Yard, Flowergate, Whitby.*

SOCIETIES.

NATIONAL ROSE, CRYSTAL PALACE.

Southern Section.

JULY 1.—The chief show in the South of the National Rose Society was held on Saturday, July 1, at the Crystal Palace, one-half of the nave being taken up with the tables of Roses and a few miscellaneous exhibits. Remarks on the show as a whole will be found on p. 38 of the present issue.

NURSEYMEN'S CLASSES.

It had been generally anticipated that, owing to Roses being so unusually early this season, the growers from the North would give a good account of themselves, and this proved to be the case, for whether in H.P.'s or Teas, the fine collections from Yorkshire were not to be beaten. The Challenge Trophy and 1st prize in the leading class for seventy-two distinct varieties was secured easily by Messrs. Harkness & Son, Bedale, Yorkshire. The stand was stronger in its H.P.'s than in its Teas and Noisettes; some of the former were really of first form, such, for instance as the bloom of Horace Vernet, which was awarded the Silver Medal for the best H.P. shown by a nurseryman, and the extremely beautiful "Mrs. John Laing"—a perfect bloom. The complete list of this exhibit was as follows:—Duke de Rohan, Baroness de Rothschild, Madame H. Jamain, Alfred Colomb, Souvenir de S. A. Prince, Duchess of Bedford (good), Countess of Oxford, Jean Ducher, Duke of Wellington, Prince Arthur, Francisca Kruger, Etienne Levet, La France, Crown Prince, Mr. Harkness, Edward Andry (very fine), Souvenir d'Elise Vardon, Camille Benardin, Merveille de Lyon, Violette Bouyer, Madame V. Verdier, Louis Van Houtte, Catherine Mermet, Le Havre, Merrie England, Ernest Metz, Earl of Dufferin (good), Gloire de Margottin, Comtesse de Nadaillac, Mons. E. Y. Teas, Ulrich Brunner, M. C. Kuster, Auguste Rigotard, Dupuy Jamain, Marie Verdier, Beauty of Waltham, Viscount Folkestone, Chas. Darwin, Madame G. Luizet, Madame E. Verdier, Horace Vernet, Mrs. John Laing, Boule d'Or, Victor Hugo, Harrison Weir, Etoile de Lyon, Fisher Holmes, Marquise de Castellane, General Jacqueminot, Princess Beatrice, Reynolds Hole, Lady Mary Fitzgerald, Margaret Bridet, A. K. Williams, Exposition de Brie, Madame C. Crapelet, Gustave Piga-

neau, Dr. Andry, Innocente Pirola, Sir R. Hill, Duke of Fife, Cleopatra, S.-M. Rodocanachi, Chas. Lefebvre, Comte de Raimbaud, Madame Bravy, Duchess de Morny, Bartholomew Joubert, and Comte de Serenye. The 2nd position was taken by Mr. Benj. R. Cant, of Colchester, whose exhibits were not up to his usual standard. The best were A. K. Williams, Charles Lefebvre, Louis Van Houtte, Alfred Colomb, Maurice Bernardin, Annie Wood, Sultan of Zanzibar, and The Bride. This latter also obtained the Silver Medal for the best Tea shown by a nurseryman. Mr. Frank Cant, also of Colchester, who took the 1st prize in this class last year, was 3rd.

In the class for forty-eight distinct single trusses, Mr. Henry Merryweather, Southwell, Notts, was 1st, with a very good lot, including fine specimens of Horace Vernet, Comte de Raimbaud, Sir R. Hill, Charles Lefebvre, La France, of 1889 (a very nice colour), The Bride, and Marie Baumann. 2nd, Messrs. G. & W. Burch, Peterborough, whose best blooms were Gustave Piganeau, Comtesse de Camondo, Niphetos, Marie Rady, Duchess of Bedford, Alfred Colomb, and Marchioness of Dufferin. Messrs. Perkins & Sons, Warwick Road, Coventry, were 3rd, and showed Lady Sheffield, Her Majesty, and Duke of Wellington, in good form.

Messrs. Harkness & Son were again 1st for forty-eight distinct varieties, three trusses of each, with a stand very superior to those which occupied 2nd and 3rd position. Sir R. Hill, Duchess de Morny, and Duchess of Bedford were especially noticeable. Mr. Frank Cant's Roses were a pretty lot, but much smaller; the best were Reynolds Hole, Duchess of Teck, Marie Baumann, Fisher Holmes, and Innocente Pirola. Mr. B. R. Cant was 3rd.

The 1st prize for twenty-four single trusses, distinct, went to Nottinghamshire, to Mr. W. H. Frettingham, Beeston. The Roses were very well coloured and of good size, particularly A. K. Williams, Lord Macaulay, Marie Baumann, Ferdinand de Lesseps, and Her Majesty. Mr. Jno. Mattock, of New Headington, Oxford, was 2nd in this class, showing good blooms of The Bride, Madame Cusin, Horace Vernet, Marie Baumann, Mrs. Jno. Laing (very large and good), Ulrich Brunner, &c. Messrs. D. Prior & Sons, Rose growers, Colchester, were 3rd.

For twenty-four distinct varieties, three trusses of each, Messrs. G. & W. H. Burch, Peterborough, competed successfully. Their best were Duke of Wellington, A. K. Williams, Horace Vernet, Alfred Colomb, Ulrich Brunner, Marie Baumann, and Comte de Raimbaud. The stand included several very weak blooms, particularly Madame Eugène Verdier and Xavier Olibo. Mr. W. H. Frettingham, of Beeston, had a stand containing exceptionally well-coloured blooms, and if it had not such large blooms as several in the 1st prize collection, the general quality appeared to us to be better than that; Mons. E. Y. Teas, Duke of Connaught, Her Majesty, Duchess of Bedford, Reynolds Hole, and Jean Lillivere (rarely seen shown), were the best. Mr. Geo. Mount, of Canterbury, was 3rd; his best were Annie Wood, Eugène Farst, and Camille Bernardin.

AMATEURS.

The redoubtable amateur, Mr. E. B. Lindsell, Bearton, Hitchin, who has been successful in the leading class for several years, again took 1st prize and the Challenge Trophy for the best forty-eight distinct single trusses. The varieties were—Duchess of Morny, Prince Camille, Camille Bernardin, Xavier Olibo, The Bride, A. K. Williams, Madame J. Desbois (weak), Dupuy Jamain, Catherine Mermet, Sir R. Hill, Caroline Kuster, Lady Sheffield, Louis Van Houtte, Etienne Levat, Reynolds Hole, Comte de Raimbaud, Souvenir d'un Ami, Merveille de Lyon, Countess of Oxford, Marie Van Houtte, Beauty of Waltham, Abel Carrière, La France, Gustave Piganeau, Ethel Brownlow, Chas. Lefebvre, Levenie Lamy, Her Majesty, J. S. Mill, Innocente Pirola, Alfred Colomb, Ulrich Brunner, François Michelin, Comtesse de Nadaillac, Rosieriste Jacobs, Madame E. Verdier, Earl of Dufferin, Maréchal Niel, Prince Arthur, Mrs. John Laing, Duke of Wellington, Madame Cusin, Dr. Sewell, Marie Verdier, Madame Hoste, Fisher Holmes, and Horace Vernet. 2nd, Rev. J. H. Pemberton, who had also a fine lot, but flowers smaller. Mr. Henry V. Machin, Gateford Hill, Workop, Notts, was 3rd.

The Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, was the best exhibitor of thirty-six distinct single trusses, and amongst a good collection the best were Alfred Colomb, Marie van Houtte, Ethel Brownlow, Souvenir d'Elise Vardon, E. Y. Teas,

Marie Verdier, Merveille de Lyon, and Le Havre. These were not quite so good as those in the 1st prize collection of the forty-eight varieties. Walter Drew, Esq., The Uplands, Ledbury, was almost equal to the 1st in this class; his stand included very good specimens of Marie Baumann, Her Majesty, A. K. Williams, La Rosière, and Louis van Houtte. The Rev. J. H. Pemberton was 3rd; his best were J. S. Mill, Charles Darwin, Le Havre, Her Majesty, and A. K. Williams.

The 1st prize for twenty-four distinct single trusses was secured by J. Gurney Fowler, Esq., Woodford, Essex, with an exceptionally well-coloured lot. The best were Le Havre, Duke of Connaught, Earl of Dufferin, and A. K. Williams. Colonel J. H. Pitt, Turkey Court, Maidstone, was 2nd; the blooms were large but too far developed. E. B. Lindsell, Esq., showed well again in the class for sixteen distinct varieties, three trusses of each; the best were Lady Sheffield, Horace Vernet, A. K. Williams, Duke of Wellington, Dupuy Jamain, Louis Van Houtte, Alfred Colomb, and Prince Arthur. Henry V. Machin, Esq., was 2nd; his blooms were not so large or good, but they were staged nicely, each flower being given plenty of room.

The next class was for twelve distinct varieties and three trusses of each, and here Walter Drew, Esq., showed fine and well-coloured blooms, but some of the petals appeared injured. The 2nd prize collection from Colonel J. H. Pitt, Turkey Court, Maidstone, was also commendable.

Walter Drew, Esq., had the best twelve single trusses of any H.P., showed very fine Mrs. Jno. Laing; the 2nd prize going to S. P. Budd, Esq., 8, Gay Street, Bath, who had Marie Baumann; and the 3rd to H. V. Machin, Esq., for La France.

NUMERICALLY LIMITED CLASSES.

The following five classes were open only to growers of fewer than 2000 plants of varieties in the National Rose Society's Catalogue of Exhibition Roses, including Teas and Noisettes.

The Rev. H. Berners, Harkstead Vicarage, Ipswich, took 1st in the leading class of this section for twenty-four distinct single trusses. The best were Marie Baumann, A. K. Williams, Reynolds Hole, The Bride, and Jean Souper. A. Slaughter, Esq., Steyning, Sussex, was 2nd, noticeable were Prince Arthur, Duchess of Bedford, Maréchal Niel, and Lord Macaulay. The 3rd prize went to W. C. Romaine, Esq., The Priory, Old Windsor.

For eighteen distinct, A. Whitton, Esq., Askens, Bedale, was 1st with a very good collection. Thos. Miller, Chas. Lefebvre, Countess of Rosebery, Dupuy Jamain, Duke of Wellington, Viscountess Folkestone, Marie Baumann were all fine blooms. James Parker, Esq., Oakfield, Hitchin, was a good 2nd, with smaller, but pretty, bright, and well-shaped blooms; Mr. E. Mawley, Rosebank, Berkhamstead, was 3rd.

For twelve distinct varieties, the 1st prize went to Jno. Ough, Esq., 7, Clifford Street, Hereford, who was the only competitor in this class.

The Rev. H. Berners was in the 1st place in the competition for eight distinct, three trusses of each; his Merveille de Lyon, Her Majesty, Camille Bernardin, were fairly good. A. Slaughter, Esq., Steyning, Essex, was 3rd.

For nine single trusses of any H.P., also the Rev. H. Berners was 1st, with large and pretty blooms of Merveille de Lyon; 2nd, W. C. Romaine, Esq., with Dr. Andry; and A. Whitton, Esq., was 3rd, with Merveille de Lyon.

The following four classes were open only to growers of fewer than 1000 plants, of varieties in the National Rose Society's catalogue. In this section, Osmond G. Orpen, Esq., West Bergholt, Colchester, took the 1st prize in the leading class, and also the *Gardeners' Magazine* Medal. The best of the twelve blooms were Alfred Colomb, Baroness Rothschild, Horace Vernet, Camille Bernardin, but some weak ones spoiled the appearance of the stand. C. J. Grahame, Esq., Coombe Road, Croydon, was 2nd, with very fresh and nice blooms, only inferior to the other collection in having no large blooms; the general quality was better. Jas. Parker, Esq., The Croft, Headington, Oxfordshire, was 3rd; and Dr. Tucker, Swanley Junction, Kent, 4th.

For nine distinct single trusses, the 1st position was taken by Conway Jones, Esq., Hucclecote, Gloucester; his best were Catherine Mermet, and Alfred Colomb. 2nd, M. Hodgson, Esq., Shirley Cottage, Croydon; and 3rd, Chas. E. Cuthwell, Esq., Chapel Croft, Dorking.

Jas. Parker, Esq., was 1st in the class for six

distinct Roses, three trusses of each. His Alfred Colomb, Earl of Dufferin, and Monsieur E. Y. Teas were very good. Miss Mellish, Hodsack Priory, Workop, was 2nd; and Dr. Tucker, Swanley, 3rd.

Dr. Tucker had the best six single trusses of any H. P., showing very fine blooms of Her Majesty. The 2nd position fell to James Parker, Esq., who also showed Her Majesty, but not more than one half the size, and M. Hodgson, Esq., was 3rd with Alfred Colomb.

The three following classes were open only to growers of fewer than five hundred:—

Mr. L. P. Trines, Hitchin, took 1st for nine distinct single trusses; the best were Her Majesty, Alfred Colomb, Etienne Levat, Duke of Wellington, Mrs. Jno. Laing. 2nd, Geo. Moules, Esq., Hitchin, who had good blooms, especially Marie Baumann and Camille Bernardin. Harcourt P. Landen, Esq., Shenfield, Brentwood, was 3rd.

W. D. Freshfield, Esq., Reigate, had the best six; Comtesse de Nadaillac, Duke of Teck, Mons. E. Y. Teas, and Jno. Bright were very good. The Rev. R. Buchanan, Herne Vicarage, Canterbury, was 2nd; and F. S. Francis, Esq., Crofton Hall, Orpington, was 3rd; his bloom of Alfred Colomb was a very fine specimen, and the exhibit generally appeared equal to that which gained the 2nd prize. 4th, Miss E. B. Denton, Orchard Court, Stevenage.

For four distinct varieties, three trusses of each, Mr. E. B. Denton, Orchard Court, Stevenage, was most successful; F. S. Francis, Esq., 2nd; and A. F. Grace, Esq., Chertsey Green House, Steyning, 3rd.

EXTRA CLASSES FOR AMATEURS.

Arthur Bryans, Esq., The Cottage, Fooks Cray, Kent, had the best six distinct single trusses, in a class open only to amateurs who have never won a prize at an exhibition of the National Rose Society, amongst which were good specimens of Alfred Colomb, Comtesse de Nadaillac, and Madame V. Verdier. 2nd, A. F. Grace, Esq.

For six distinct single trusses of Roses grown within 8 miles of Charing Cross, John Bateman, Esq., Rosevale, Archway Road, N., was 1st, who staged a fair lot, including a commendable bloom of Ulrich Brunner. 2nd, Rivers H. Langton, Esq., Raymead, Hendon, N.W.; and 3rd, Hugh White, Esq., Woodside Cottage, Highgate.

The following class was for six new Roses, distinct, single trusses, and here the Rev. J. H. Pemberton, was 1st, showing Elsie Fugier, Jeannie Dickson, Gustave Piganeau, Caroline Testout, Auguste Guinoiseau and Duchess of Fife. 2nd, John Bateman, Esq., Roseville.

TEAS AND NOISETTES.

The Teas were far below the usual standard of excellence. The drought and heavy rains had sadly marred the beauty of their flowers, and the competition was not so keen as on previous occasions. This portion of the exhibition, generally the more beautiful, was quite disappointing. Such well-known growers as Mr. Prince of Oxford were unable to compete through the fleeting character of the blooms.

NURSERYMEN.

The leading class in the Teas and Noisettes was arranged for twenty-four distinct varieties, single trusses, and the leading honour was secured by Mr. B. R. Cant of Colchester. Unfortunately, the blooms were not so good as usually staged in this section. The best were Ethel Brownlow, Souvenir d'Elise, Ernest Metz, Madame de Watteville, Catherine Mermet, Madame Cusin, Innocente Pirola, Francisca Kruger, and a very fine bloom of The Bride. Mr. Frank Cant was 2nd; his best were Niphetos, Ethel Brownlow, and Catherine Mermet. 3rd, Messrs. D. & W. Croll, Dundee.

Mr. Henry Merryweather, Southwell Nurseries, Notts, was 1st for eighteen distinct single trusses, and the blooms were better than those shown in the class above. They were Maréchal Niel, Niphetos, Princess of Wales, Perle des Jardins, Devonensis, Ethel Brownlow, Comtesse de Nadaillac, Anna Olivier, Ernest Metz, Etoile de Lyon, Souvenir de Annie Rubens, Souvenir d'Elise Vardon, The Bride, Francisca Kruger, Catherine Mermet, Madame S. Cochet. A good collection, but slightly smaller blooms, were shown by Messrs. D. Prior & Son, who were 2nd.

Another class was arranged for twelve distinct trusses of any Tea or Noisette, except Maréchal Niel, and in this the winners were Messrs. D. and W. Croll, Dundee, with pretty moderately good blooms of Rubens. Messrs. G. and W. H. Burch showed well-shaped, but small Innocente Pirola, and were

2nd. Messrs. R. Mack & Son, Catterick, Yorkshire, had *Souvenir d'Elise Vardon*.

In the class for eighteen distinct triplets, the first place was taken by Mr. B. R. Cant. The best of a moderately good collection were Catherine Mermet, Ethel Brownlow, *Souvenir d'Elise Vardon*, Comtesse de Nadaillac, *Maréchal Niel*, Madame de Watteville, and The Bride; 2nd, Mr. G. Mount, with fresher-looking blooms, but smaller, Niphotos, Innocente Pirola, The Bride, and Comtesse de Nadaillac, were the best. Mr. Frank Cant was only a short way behind, and very noticeable were his blooms of Madame Cusin, The Bride, Ernest Metz, and *Souvenir d'Elise Vardon*.

The Rev. A. Foster-Melliard, Ipswich, secured the Trophy for eighteen blooms, with a stand containing some of the best blooms in the show. It consisted of the following varieties:—*Maréchal Niel*, Ernest Metz, Ethel Brownlow, Madame Cusin, Hon. Edith Gifford, Innocente Pirola, Jean Ducher, *Souvenir d'un Ami*, Marie Van Houtte, Madame Hippolyte Jamain, Caroline Kuster, Comtesse de Nadaillac, Catherine Mermet, *Souvenir de S. A. Prince*, The Bride, Comtesse Panisse, Anne Olivier, *Souvenir d'Elise*. Mr. O. G. Orpen, Colchester, was 2nd.

AMATEURS.

Two classes were provided for twelve varieties, distinct, one for single trusses and the other for triplets. For the former, the Rev. H. A. Berners, Harkstead Rectory, Ipswich, was 1st, with a very fresh and even exhibit, the varieties comprising Ethel Brownlow, Francisca Kruger, Comtesse de Nadaillac, Marie Van Houtte, Madame Hoste, The Bride, Catherine Mermet, Madame Bravy, Madame Cusin, *Etoile de Lyon*, Jean Ducher, and Hon. Edith Gifford. Col. J. H. Pitt, Turkey Court, Maidstone, was 2nd, with fairly good blooms, the finest being *Souvenir de Thérèse Levet*, The Bride, and Marie Van Houtte. In the triplet class, the 1st prize, a piece of plate, was well won by the Rev. A. Foster Melliard, Broughton Rectory, Ipswich. The flowers were of good colour, not so lamentably washed out as in the majority of stands. They included *Maréchal Niel*, Hon. Edith Gifford, Comtesse de Nadaillac, Comtesse Panisse, Madame Lambard, Caroline Kuster, *Souvenir d'Elise Vardon*, Francisca Kruger, Ernest Metz, and Marie Van Houtte. H. V. Machin, Esq., Gateford Hill, Workop, was 2nd, but his blooms were unfortunately much damaged. We rather like them on the black velvet ground; it shows up the delicacy of colouring.

NUMERICALLY-LIMITED CLASSES.

Open to growers of fewer than five hundred plants of Teas and Noisettes in the National Rose Society's catalogue. In another class for twelve distinct, single trusses, the 1st prize, a piece of plate, was presented by the Rev. F. R. Burnside, and G. O. Orpen, Esq., West Bergholt, Colchester, was successful, with moderately good blooms for the season. They were Comtesse de Nadaillac, Madame de Watteville, *Maréchal Niel*, Innocente Pirola, Catherine Mermet, *Souvenir de S. A. Prince*, The Bride, Madame Hoste, *Souvenir d'un Ami*, Marie Van Houtte, Madame Lambard, and Francisca Kruger. The 2nd prize went to James Parker, Esq., The Croft, Headington, Oxfordshire, and were of very good colour, but a trifle coarse. Those, however, from Alfred Tate, Esq., Downside, Leatherhead, were, in our opinion, better. Conway Jones, Esq., Hucclecote, Glos., 4th.

In the class for nine distinct single trusses, the 1st prize went to the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, and the flowers were praiseworthy, the varieties comprising Caroline Kuster, Ernest Metz, Hon. Edith Gifford, Comtesse de Nadaillac, Jean Ducher, Mme. Bravy, Marie Van Houtte, and Mme. Hippolyte Jamain. Ed. Mawley, Esq., Rosebank, Berkhamsted, was 2nd, with creditable but small flowers. The *Gardeners' Magazine* Silver Medal was awarded to Mr. Pemberton in this class.

For six, distinct, three trusses of each, O. G. Orpen, Esq., was 1st, with very good blooms, fresh, and in true character, and consisting of Innocente Pirola, *Souvenir d'un Ami*, *Maréchal Niel*, Francisca Kruger, Mme. Bravy, and Marie Van Houtte. No blooms of special merit were to be seen in the 2nd prize stand from J. Parker, Esq.

An interesting class was for six distinct single trusses of any Tea Rose, and the variety *Maréchal Niel* was well shown by O. G. Orpen, Esq., who was placed 1st; the blooms were of very fine colour, and amongst the best in the exhibition. J. Parker, Esq., was 2nd, with The Bride; and Dr. Tucker, Swanley Junction, Kent, 3rd, with Hon. E. Gifford.

Open only to growers of fewer than 200 plants of Teas and Noisettes in the National Rose Society's catalogue. The 1st prize for nine, distinct, single trusses, was secured by Dr. Tucker, who had small but excellent blooms of Comtesse de Nadaillac, The Bride, Catherine Mermet, *Souvenir de Thérèse Levet*, Hon. Edith Gifford, Innocente Pirola, Rubens, and Marie Van Houtte; Miss Mellish, Hodsock Priory, Workop, was 2nd, but the flowers call for no particular comment; and W. D. Freshfield, Esq., The Wilderness, Reigate, 3rd.

The 1st prize for six, distinct, single trusses, went to Mr. A. Whittton, Askew, Bedale; the flowers very beautiful, large, and thoroughly well-grown. They comprised Madame Hoste, *Souvenir d'Elise Vardon*, Catherine Mermet, Rubens, Innocente Pirola, and *Souvenir de S. A. Prince*.

In the other stands nothing in particular called for mention, but we may record that F. S. Francis, Esq., Crofton Hall, Orpington, Kent, was 2nd; the Rev. J. R. Buchanan, Herne Vicarage, Canterbury, 3rd; and George Moules, Esq., Hitchin, 4th.

OPEN CLASSES.

This section was full of interest, and contained some of the finest flowers in the show. They made a great display of colour, and the competition was, as a rule, good. Unfortunately, the Teas were much spoilt by the weather. This was the case with the blooms of Madame Hoste, which won the 1st prize for Mr. B. R. Cant, Colchester, in the class for twelve single trusses of any yellow Rose. Messrs. D. & W. Croll, Dundee, were 2nd with Marie Van Houtte, very charming; and Mr. John Mattock, New Headington Nursery, Oxford, 3rd.

There were five entries for the same number of any white variety, and Merveille de Lyon was the principal exhibit; it was shown by Messrs. R. Mack & Son, Catterick, Yorks, in excellent style, full, but not coarse. Messrs. Harkness & Sons, 2nd; and Messrs. D. & W. Croll, 3rd. All the classes were for twelve blooms, distinct, single trusses, so we need not specify the number in each case. For any crimson Rose, except Marie Baumann or A. K. Williams, the English Fruit and Rose Company, Hereford, were 1st, with very fine blooms of Alfred Colomb; and Mr. George Mount, of Canterbury, was 2nd, with Fisher Holmes in good character; whilst Messrs. Paul & Son, Cheshunt, were 3rd, with Alfred Colomb. There were eight entries in this class.

A very fine class was that for the dark velvety crimson Roses, and the blooms of the variety Fisher Holmes, which won Messrs. Prior & Son, Colchester, the 1st prize, deserve praise for fullness and depth of tone, not large, but neat and pleasing. That lovely kind, Xavier Olibo, one of the sweetest of all this section, came from Mr. Frank Cant, who was 2nd; with Mr. George Mount 3rd, for Eugène Furst. *Maréchal Niel* was well represented. Twelve fine trusses were shown by Messrs. D. Prior & Son, and gained the 1st prize; they were conspicuous for colour, fullness, and finish. Those from Mr. G. Mount, who was 2nd, were also satisfactory, and O. G. Orpen, Esq., was 3rd. Some of the classes were reserved for twelve blooms of one variety (stated in schedule), and it is interesting to note how popular some kinds are than others. Thus there were ten entries in the class for that thoroughly useful variety Mrs. John Laing, but the flowers were not so fine in colour as usual; the hot sun had dimmed their lustre. The 1st prize box was from Mr. J. Mattock, whose flowers were very even, closely followed by Messrs. Harkness & Sons; the 3rd place being occupied by Messrs. G. and W. H. Birch. That old favourite, Marie Baumann, was shown by Mr. George Mount, who was 1st in this class, his twelve flowers amongst the best of this kind in the exhibition; whilst the Colchester growers were the other prize-winners, Mr. F. Cant 2nd, and Mr. B. R. Cant 3rd. We have seen A. K. Williams in far better character than on this occasion, but the dozen flowers from Mr. R. Mack were commendable, although they quickly lost colour through the heat. Those from Messrs. Perkins & Sons, Coventry, who were 2nd, were small; Mr. B. R. Cant, 3rd.

We were surprised to see only two entries in the class for twelve blooms of Niphotos, the best coming from Messrs. G. & W. H. Birch; they were fairly good, but much spoilt; Mr. G. Mount was 2nd. The variety, Her Majesty, was well represented, and there was good competition. The finest dozen blooms, quite typical of this H.P., came from Mr. B. R. Cant, but, unfortunately, sullied by the weather; Messrs. G. and W. H. Birch 2nd, and Mr. Geo. Mount 3rd. That delightful Tea-scented variety, Ernest Metz, was well shown by Mr. B. R. Cant, who had the best

twelve flowers, full, fresh, and solid; those from Mr. F. Cant, who was 2nd, being damaged. The previous grower, Mr. B. R. Cant, also had the most typical blooms of Ethel Brownlow, fresh, of good colour, and pleasing; Mr. Geo. Mount 2nd, and Mr. F. Cant 3rd.

We were pleased to see no fewer than eleven entries in the class for twelve blooms of any H.P. not named in the schedule. The best exhibit was Fisher Holmes, splendidly shown by Mr. F. Cant; whilst Mr. Geo. Mount was 2nd with the same variety, and Mr. B. R. Cant 3rd, with Alfred Colomb. One class was for six single trusses of Catherine Mermet, and The Bride, arranged alternately. The 1st prize went to Mr. George Mount, and Mr. B. R. Cant was 2nd.

A class was provided for single-flowered Roses, nine bunches, and Miss Mellish was 1st with such kinds as Paul's Single White, Rosa lucida, R. arvensis, and R. canina. Not the least interesting class was for twelve bunches of Roses, suitable for button-holes, and the 1st prize went to Mr. Mattock, who had delightful blooms for colour and fullness of Innocente Pirola, W. A. Richardson, l'Idéale, Comtesse de Nadaillac, Souv. de Paul Neyron, Niphotos, Madame Capucine, Catherine Mermet, Madame de Watteville, and The Bride. Messrs. Keynes, Williams & Co., Salisbury, 2nd; and H. V. Machin, Esq., 3rd.

GARDEN ROSES.

Nurserymen.—This was a very important and beautiful section of the show. The chief class was for thirty-six bunches, and the 1st prize was won by Messrs. Paul & Son, Cheshunt, who had very fine masses, comprising many charming, old-fashioned kinds. The above we are pleased to see again getting popular. The more conspicuous was the Noisette Gustave Regis, a delightful flower, especially in the bud, new, and very sweet; the Noisette Pierre Cochet, a free sweetly-scented, and beautiful bloom; Rosa rugosa, and its varieties, particularly Madame Georges Brunt, which has large paper-white flowers; the now popular l'Idéale, Rosa lucida, the Provins, Camoens (a very free and pretty kind), Aimée Vibert, and the semi-double crimson-flowered Reine Olga de Wurtemberg.

AMATEURS.

The Silver Cup, offered by Lord Penzance, for the best eighteen bunches, was well won by A. Tate, Esq., who had such fine old kinds as Bardon Job, Moschata nivea, White-crested Moss, the Polyantha class in variety, common China, Rosa macrantha, Homère, and the H.P. Gloire des Rosomanes, a semi-double carmine variety; the Rev. J. H. Pemberton was a good 2nd, but quite eclipsed by the splendid bunches from Mr. Tate; Mr. H. V. Machin 3rd, and Miss Mellish 4th.

Chas. E. Cuthell, Chapel Croft, Dorking, had the finest twelve bunches, consisting of the several forms of Rosa rugosa, Paul's Single White, Pink China, Rosa macrantha and R. lucida; O. G. Orpen, Esq., 2nd.

NEW ROSES.

This was the most important section of the exhibition, as one always looks to this annual show for the finest novelties. There were three Gold Medal Roses, and awarded to the following varieties:—Mrs. R. G. Sharman-Crawford, and Marchioness of Londonderry, both from Messrs. A. Dickson & Sons, Newtownards, co. Down, Ireland. The former is a hybrid perpetual variety, and from what we can see, is a splendid acquisition. It is, of course, difficult to judge of a new Rose from flowers only, as other points have to be considered, but the variety Mrs. R. G. Sharman-Crawford—too long a name, we may remark—is full of promise; the flower is large, finely-shaped, the petals broad, and shining rose in colour, deepening in the centre, whilst the fragrance is fairly pronounced. This is a great point. It is a bright telling colour on the exhibition-board. Marchioness of Londonderry was scarcely shown in proper character; it is a fine Rose, and raised by the firm in 1886, but not sent out until comparatively recently. It is a very large flower, the petals broad, stout, with the margin reflexed, and the colour is best described as ivory-white. It possesses also a sweet and powerful fragrance, and the plant is strong in growth, the leaves of a glossy green colour. Although reminding one of Merveille de Lyon, it is amply distinct, and a very handsome exhibition Rose. We may remark as of interest that this is the first time two Gold Medals have been awarded to the same exhibitor for new Roses on the same occasion.

It was inevitable that a Gold Medal would be

given to the beautiful Polyantha Rose, named *Crimson Rambler*, of Mr. Charles Turner, Slough. This variety is now well known. Its flowers are produced in great profusion, in dense clusters, each like a little rosette, and intense crimson in colour. A new seedling Rose was shown by Mr. Frank Cant, but the flowers are too much like those of *Bardon Job* to merit great attention; they are similar in shape and colour. Messrs. Harkness & Sons had two new Roses, one named *Merrie England*, and the other *Mrs. Harkness*, both hybrid perpetuals; the former is of the *Pride of Reigate* class, the flower large, rosy-purple, and striped; but we want few of this type. *Mrs. Harkness* is a promising light-coloured flower, which we hope to see again. Messrs. A. Dickson & Son had also a variety named *Helen Keller*, the flower rose in colour, full, and handsome.

There were several other classes for new Roses. One was for twelve single trusses, and the finest blooms were those from Messrs. Harkness & Sons, the variety being *Gustave Piganeau*, which has become one of the most popular exhibition Roses. Mr. F. Cant and Mr. B. R. Cant were 2nd and 3rd respectively with the same kind. The competition was good.

A special award was given to the flowers of *Mrs. R. D. Sharman-Crawford*, from Messrs. A. Dickson, twelve fine blooms being exhibited.

Another interesting class was for twelve new Roses, distinct, single trusses, but the flowers were not in very good character. The 1st prize went to Messrs. Paul & Son, who showed *Gustave Piganeau*, *Noisette Gustave Regis*, *Charles Gater*, a crimson H.P.; the *Bourbon Mrs. Paul*, a very fine Rose; H.P. *Duke of Fife*, not very promising as shown; *Paul's Early Blush*, H.P., the flowers pink in colour; H.P. *Marie Magat*, crimson; the *Tea, Waban*, which has been much discussed, but which seems disappointing; *Bruce Findlay*, *Dowager Duchess of Marlborough*, *Violet Queen*, and *Frère Marie Pierre*, all H.P.'s, but they were not in condition to judge of them with any degree of accuracy.

PREMIER BLOOMS.

That for the best H.P. exhibited by nurserymen was given to Messrs. Harkness & Sons, for a bloom of *Horace Vernet*, a good large flower, but colour not quite normal—purple-blue being rather highly developed.

For the best Tea, Mr. B. R. Cant was successful with a nice bloom of *The Bride*. The best H.P. from the amateurs was a large bloom of *Ulrich Brunner* from Mr. E. B. Lindsell; and the best Tea, a magnificent bloom of *Madame Cusin*, from the Rev. A. Foster-Melliar.

MISCELLANEOUS.

A fine group of *Begonia tuberosa* varieties, circular in form, was arranged by Messrs. J. Laing & Sons, Forest Hill, S.E. Among the *Begonias* were several novelties, as *Prince of Wales*, single-flowered, bright crimson; *Lottie Collins*, flesh-pink; *Princess May*, Earl Craven, double, dark crimson; *Duchess of Westminster*, carmine, with white centre as single flower. Other exhibits were the pretty *Saxifraga sarmentosa tricolor superba*, *Carex*, *Palms*, and other furnishing materials.

Messrs. H. Cannell & Sons, Swanley Junction, had a showy table of cut flowers, consisting of double and single-flowered varieties of *Begonia*, set up in triplets in glasses with a setting of *Adiantum*.

Messrs. J. Cheal & Sons, nurserymen, Lowfield, Crawley, had a triangular shield, covered with dark-coloured velvet, on which small bouquets of *Violas* in variety were arranged. With these they had a quantity of the best herbaceous perennials as cut flowers, consisting of *Chelone*, *Delphiniums*, *Enothera*, *Youngi*, *Phlox*, *Gaillardia*, *Sidalcea*, *Carnations*, *Hemerocallis*, *Lychnis*, *Telekia cordifolia*, &c.

Messrs. Paul & Son, nurserymen, Waltham Cross, had a big stand at one end of the exhibition space, which was lavishly set out with baskets and boxes of cut blooms of *Roses*, these being interspersed with plants of *Arundo Donax variegata*, coloured tree foliage, *Ferns*, &c. It was very well done.

CROYDON HORTICULTURAL.

JULY 5.—This annual exhibition was held in the grounds of Brickwood House, East Croydon. The weather was dull, and the exhibits, being under a tolerably thick canvas, were not seen quite so well as might be desired. The plants (both foliage and flowering) were extremely creditable, and the *Roses*, although not quite so numerous as usual,

were better than had been expected—on the whole, quite up to the usual average.

In the open class for nine stove and greenhouse plants, Mr. W. Hallam, gr. to J. Warren, Esq., *Handcross Park*, Crawley, was 1st. He had two very fine *Ixoras*, *I. coccinea* and *I. Williamsii*, several *Ericas*, and two good plants of *Statice profusa*. Mr. W. Carr, gr. to Mr. Stephenson Clarke, Croydon Lodge, was a very good 2nd, and might well have been awarded an even 1st.

In the class for nine ornamental foliage stove and greenhouse plants, Mr. J. Hallam was again 1st. His *Crotons*, *Palms*, *Asparagus*, and *Alocasia macrorrhiza variegata* were of first-rate merit. Mr. W. King, gr. to Philip Crowley, Esq., exhibited very well in this class.

Groups were shown in much variety, and in several classes. The 1st prize in that for a group of plants staged for effect on 100 square feet was gained by Mr. W. King, gr. to P. Crowley, Esq., with a very tastefully-arranged collection, including some good plants of *Odontoglossum vexillarium*.

For a group not exceeding 10 feet by 7 feet, the 1st prize went to Mr. Scott, gr. to J. Aste, Esq., *Ross Road*, South Norwood, the only exhibitor.

In the local class, Mr. W. Wooldridge, gr. to Mrs. Bassett, South Norwood Park, was 1st, for a group covering 7 feet by 6 feet; and W. J. Hart, Esq., was successful in the class for amateurs not employing a regular gardener.

The best *Caladiums* came from Mr. G. Simmonds, gr. to H. C. Mayhew, Esq., South Norwood Hill, and were very well shown.

Mr. Wm. Carr had the best six *Dracenas*, including a good piece of *D. Youngii*, and *D. amabilis*. This was a strong class, and there were several competitors.

Mr. F. Scott showed best in the class for six ornamental foliage stove and greenhouse plants; and Mr. Wm. Carr was 1st for any specimen plant in flower, with a large fine well-flowered plant of *Allamanda Hendersoni*. Mr. W. King had similar honour in the class for one specimen foliage plant, with a large plant of *Anthurium Warocqueanum*.

For six exotic Ferns, the 1st prize was exceedingly well won by Mr. Hallam; he had large plants of *Adiantum cardiophyllum*, *Microlepia hirta cristata*, *Davallia polyantha*, *Nephrolepis davallioides furcata*, and *Davallia Mooreana*; Mr. W. King was a good 2nd.

Begonias were exceptional in quantity and quality. The 1st prize for nine Tuberous *Begonias* was secured by Mr. J. Slater, gr. to Mrs. Hulse, Shepley House, Carshalton, who had first-rate plants, large, and well-flowered.

In the amateur section, Mr. G. Kirk, of Saxon Road, Croydon, was 1st for six plants.

Fuchsias were well shown by Mr. F. Scott, who was 1st for six plants.

In the amateurs' class, for nine Ferns, distinct, Mr. H. G. Frilley, gr. to F. Berns, Esq., Penanroy, Bramley Hill, was 1st, showing small but pretty, well-grown plants.

The best *Gloxinias* were from Mr. E. Perret, gr. to Mrs. Fuller, Dappa's Hill, who was 1st for six; and the 1st place for twelve was taken by Mr. J. Seaton. Mr. C. Simmonds was the exhibitor of the best six zonal *Pelargoniums*; and Mr. Wm. Carr of the best six *Selaginellas*, showing very well in this class, which included several competitors.

Orchids were not much in evidence, but Mr. H. C. Tilbey was awarded 1st prize for six, showing one good plant of *Aërides Lobbi*, and another of *Saccolabium præmorsum*.

Table plants were shown well by Mr. C. Lane, gr. to E. H. Coles, Esq., Burntwood, Caterham, who was 1st for twelve, showing pretty little plants of *Croton*, *Dracena*, *Palm*, *Aralia*, &c.

Mr. W. Carr took 1st for twenty-four varieties of cut flowers.

Table decorations were very fine, and tastefully arranged. The 1st place was taken by Miss C. Cooper, Sydenham Road Nursery, Croydon.

ROSES.

In the nurserymen's class for forty-eight, distinct, Messrs. Paul & Son, the Old Nurseries, Cheasant, were the only exhibitors; some good blooms, such as *E. Y. Teas*, *Comtesse de Nadaillac*, *Duc d'Orléans*, *Charles Gater*, and *Alfred Colomb*, were amongst them, but there were others that were rather weak. For twenty-four triplets, again, but one exhibitor turned up, although there had been several entries; Mr. Benj. R. Cant, however, had a creditable lot. For twenty-four singles, Mr. Geo.

Mount, Rose Nurseries, Canterbury, was 1st, with a very fair collection, including a good *Mrs. Laing*, creditable *A. K. Williams*, *Alfred Colomb*, &c.

Mr. Benjamin R. Cant, was 1st for eighteen Tea or Noisettes. A good bloom of *Luciole*, very fresh; *Catherine Mermet*, and some others made a pretty stand. Mr. G. Mount was 2nd.

Mr. G. Mount, with some excellent blooms of *Mrs. J. Laing*, took 1st for twelve blooms of hybrid perpetuals; and Messrs. Prior & Son, Colchester, with *Maréchal Niel*, took the leading place in the corresponding class for Tea or Noisettes.

Among amateurs the leading class for thirty-six distinct blooms gave 1st place to Mr. E. B. Lindsell, Bearton, Hitchin, but the collection was not nearly so strong as that shown by the same exhibitor at the Crystal Palace on the previous Saturday.

G. Christy, Esq., Buckhurst Lodge (gr., Mr. W. Blundell), was 1st for twenty-four, and staged a good collection, but the blooms were rather small, although even and fresh-looking. Mr. E. B. Lindsell was 2nd, having amongst some very good blooms several very weak ones, which disqualified him for 1st place. In this stand the best Tea shown by an amateur (*Madame de Watteville*) and the best H.P. (*Horace Vernet*) were included, and were awarded Medals.

E. B. Lindsell, Esq., was 1st for six distinct triplets, in this case showing very good large fresh blooms; and also 1st for twelve *Roses*, any variety, with *Comtesse de Nadaillac*.

Ed. Mawley, Esq., Rosebank, Berkhamsted, was 1st for twelve *Roses*, distinct, amongst growers of fewer than 2000 plants; *Alfred Colomb* and *A. K. Williams* were very good in this stand. Also 1st for twelve Tea or Noisettes, but the blooms were rather small. Mr. Alfred Slaughter, Steyning, was 1st for four *Roses* in triplets.

Among growers of fewer than 1000 plants, Mr. J. Bateman, Rose Vale, Archway Road, was 1st for nine *Roses*, distinct; and C. J. Grahame, Esq., Coombe Road, Croydon, was 2nd. Mr. Moules was 1st for six *Roses*, distinct, from growers of fewer than 500 plants, and had a very creditable lot, especially *Comte de Raimbault* and *Reynolds Hole*; and he was also 1st for six Teas or Noisettes.

C. J. Grahame, Esq., was 1st in a class for twelve distinct blooms in the local class; his *Mrs. John Laing* in this stand obtained the National Rose Society's Silver Medal for the best H.P., and also that offered by Messrs. John Laing & Son for the best bloom of *Mrs. John Laing*. The winner in this class obtains the Society's Challenge Cup offered to the local amateurs.

Mr. H. Shoemith, gr. to M. Hodgson, Esq., Shirley Cottage, was 1st in the local classes for six *Roses*; and J. De La Mare, Esq., St. Margaret's, Chichester Road, 1st for six Teas or Noisettes. Mr. J. Wright, gr. to the Corporation of Croydon, was 1st for six blooms of one variety.

A collection of cut blooms came from Mr. T. Durrant Young, Roselands Nurseries, Eastbourne; and from Messrs. J. Peed & Sons, West Norwood, who had a fine lot of *Mrs. John Laing*.

FRUIT.

For three bunches of White Grapes, Mr. W. Harvey, gr. to W. Tennant, Esq., was 1st, with ripe Muscat of Alexandria; and Mr. C. Blurton, gr. to H. Cosmo Bonser, Esq., Kingswood Warren, Epsom, was 1st, for an equal number of Black, showing good bunches of Black Hamburg, well-coloured.

Mr. G. W. Cummins, gr. to A. K. Smee, Esq., The Grange, Wallington, had the best Strawberries, showing only a fair dish of Waterloo.

The 1st prize for a collection of fruit of six dishes was taken by Mr. Wm. Carr, who had large *Stirling Castle* Peach, and good Black Hamburg Grapes.

The best Melon came from Mr. O. Jeal, gr. to Mr. Waterall, Waddon Lodge. Mr. W. Carr was again 1st for Cucumbers with a pair of Telegraph.

VEGETABLES.

Mr. C. Parrett obtained 1st for a collection of salads in the local class; and Mr. James Gibson, gr. to Mr. H. Berkeley James, The Oaks, Carshalton, 1st for a collection of vegetables with a very creditable exhibit.

MISCELLANEOUS.

In the large plant tent were a number of groups arranged for effect apart from those in the competitive classes. A group of *Begonias* facing the entrance at one end, was from Messrs. J. Laing & Son, Forest Hill. It was a fine showy collection of the best single and double varieties, with Ferns and

Asparagus, and edged with *Caladium argyrites*. But a little way removed was another group from the same firm, composed of *Caladiums*.

Begonias were also shown largely in a group put up by Mr. John R. Box, nurseryman, Croydon. It was very tastefully arranged, and included a good number of *Caladiums* as a relief; many of the varieties were of considerable merit. Mr. Thos. Butcher, South Norwood Nurseries, had a group of miscellaneous plants; and a similar lot, but arranged very differently, came from Mr. C. Chaff, Park Hill Nurseries, Croydon. A large group of plants and Orchids, put up by Messrs. B. S. Williams & Son, Upper Holloway, N., included some good stove plants, and a good piece of *Ada aurantiaca*, but it was not bright enough to show to advantage in so dark a tent.

Messrs. J. Peed & Sons, Roupell Park Nursery, West Norwood, put up a group of plants, including some very well-grown *Caladiums* in good varieties. A collection of bunches of *Violas*, *Border Carnations*, very fine *Gaillardias*, and sprays of ornamental foliage shrubs, were from Messrs. J. Cheal & Sons. Another collection of *Begonias* were shown by Mr. G. H. Cooper, Sydenham Road Nursery, Croydon.

A group of classes, arranged in a smaller tent, from cottagers, were very satisfactory; the vegetables and salads especially being of rare merit.

TORQUAY ROSE DAYS.

The annual Rose exhibition was held in the nurseries of Messrs. CURTIS, SANDFORD, & CO., of the Devon Roseries, who very kindly placed their large show-house at the disposal of the promoters, the Committee of the Local Gardeners' Relief Fund, besides opening the whole of their houses and grounds free to the public. Valuable prizes were offered by the firm, the Committee on the Relief Fund, and largely supplemented by the Torquay Horticultural Society. The principal prizes for Roses were taken by Mr. J. French, gr. to Moreton Sparks, Esq.; Mr. B. Richards, gr. to R. Mallock, Esq.; Mr. H. Dammereli, gr. to Lady Macgregor; Mr. J. Colwill, Newton Abbott, Mr. J. Stone, gr. to J. Kilson, Esq. Roses were very fair considering the long dry and hot season. The firm of Curtis, Sandford, & Co. staged eighteen boxes of very good blooms in great variety. Miscellaneous groups of plants brought a great many competitors, and very excellent collections were staged, all of great merit. The first prize was awarded to Mr. G. Medland, gr. to Moreton Sparks, Esq., whose group contained a variety of superb Orchids, and very tastefully and skilfully staged. Mr. Sloman, gr. to Captain Tucker, was a capital 2nd. For groups of plants, Orchids excluded, Mr. F. C. Ferris, gr. to J. Kimbe, Esq., was deservedly placed 1st, with a very fine collection. Messrs. Veitch, of Exeter, staged beautiful *Carnation Alpuri*, and other plants in great variety. Mr. Stansford, nurseryman of Torquay, staged a large collection of *Carnations* of splendid varieties. Messrs. Beach, of Kingswell, staged *Carnations*, *Begonias*, *Roses*, &c.

STANMORE HALL, MIDDLESEX.

The residence of W. K. D'Arcy, Esq., is one of the most important in the county, and its gardens since their reconstruction by Mr. Wm. Tidy, the gardener, are well worthy of it. Fruits and flowers are well grown, and in an extensive manner there, the fruits being perhaps of paramount importance. All the fruits under glass have given remarkable crops this year, and still there is abundance to follow. Peaches and Nectarines have been specially fine, the heavy crop of *Alexandra* being cleared. The Early Alfred, which is a great favourite here, is also finished, and each sort in succession is well in hand for keeping up the supply. One trained tree of Early Alfred bore 200 fruits of splendid quality; and among the Nectarines, which have behaved equally well, a tree of *Elruge* bore 150 fruits, which averaged, it is stated, 5 oz. The long ranges of vineries also are in grand condition, and well-cropped; the seemingly endless quantity of *Tomatos*, both in pots and out, in grand bearing, the best evidently being Stanmore Hall Surprise, raised by Mr. Tidy, and always used for general crop. Among other fruits under glass, the *Plums* are remarkable, and *Blackberry Wilson Jun.*, which it is intended to grow more extensively, is fine; while in the orangery are some very passable

Oranges, and in one of the stoves the Papaw (*Carica Papaya*) is in fruit.

The large conservatory is brilliant with *Pelargoniums*, *Fuchsias*, *Hymenocallis* (*Pancratium*) *macrostephana*, flowering *Cannas*, *Gladiolus Colvillei* alba, the hybrid *Streptocarpus* of Messrs. Jas. Veitch & Sons, *Taberooses*, &c., arranged with *Ferns* and foliage plants.

In the winter garden, whose lofty pillars are clad with *Tea Roses*, there is a fine show of bloom, the *Carnations*, *Roses*, *Heliotropes*, &c., giving off a delightful fragrance. Here the *Cacti* bloom profusely, one large plant of *C. speciosissimus* having over fifty fully-expanded flowers, and the lesser specimens of *C. crenatus* being well furnished with their fine cream-white blooms.

In the stove-houses, the large salver-shaped yellow flowers of the *Allamandas* and the white of the *Stephanotis*, together with the mauve-coloured panicles of the *Bougainvillea glabra*, all of which are trained to the roof, form a fine sight; and on the staging are *Dracenas*, *Crotons*, *Anthuriums*, &c., for indoor decoration, which is a branch of the gardener's art to which much attention has to be given here. In the other houses specially noteworthy are a fine batch of *Calanthes*, a grand lot of *Gloxinias*, some fine plants of the scarlet *Scutellaria Mocciniana*, a sturdy lot of *Kalosanthes* in bud, a good selection of *Begonias*, and, generally speaking, nice batches of most plants useful for cutting or for decoration.

From the terrace in front of the mansion, which stands on high ground, a grand view is obtained, the richly-coloured flowers in the geometrical garden, and the many fine beds of *Roses* and other flowers just beneath the eye, appearing the more brilliant in contrast with the green and more sober hues of the surrounding scenes, and the grey of the distant horizon. Near the mansion are three fine examples of *Copper* and *Purple Beeches*, some fine *Conifers* and other trees, and a quantity of judiciously-planted *Rhododendrons*, which have made a great display. The lawns and kitchen garden have suffered much from drought, the *Pea* crops being much affected. Nevertheless, two kinds, which are great favourites here, viz., *Veitch's Earliest of All* and *Duke of Albany* have been remarkably good, the latter still having a fine crop. These two varieties of *Peas* have withstood the drought better than any of the others, and seem to have been unaffected by it.

THE ROSERY.

AMERICAN ROSES.

A GREAT deal of "high faluting" has been written by the Americans concerning the contributions which they have made to our Rose gardens, and as in these days people are taken very much at their own estimate, a much higher position has been accorded to them in this respect than I think they have merited. Indeed, what we have received from thence has been almost altogether in the way of sports, and not seedling varieties. It may therefore be useful to notice those varieties which we have received from them, and to show what is the position they are entitled to occupy:—

Marshal P. Wilder.—We received glowing descriptions of its beauty, brilliancy of its colouring, habit, &c., but when it was grown here, it turned out to be so like *Alfred Colomb*, that when brought before the National Rose Society's Catalogue Committee, it was bracketed with that flower, and in their recent catalogue it disappeared altogether. Sometimes in the case of too-much-alike *Roses*, there is a certain dissimilarity in the foliage and style of growth which induces people to continue to grow them, notwithstanding the similarity of bloom. But every one knows the distinct character of the growth of *Alfred Colomb*, it being so upright, and the flower with its long footstalk being thrown considerably above the foliage. This is precisely what *Marshal P. Wilder* does.

American Beauty.—This came out with a great

flourish of trumpets, and we all expected to have got something valuable; but, alas! it was only a "wooden nutmeg," and very soon our experienced rosarians detected in it an old and worthless variety, *Madame Ferdinand Jamain*. It remained for a little while in our catalogues, but is now being gradually eliminated from them.

The Bride.—This is without doubt the most valuable Rose we have received from America. It was sent out in 1885, and immediately assumed the place it has ever since maintained; it is not a seedling, but a sport from that long-established favourite, *Catherine Mermet*, which was raised by Guillot in 1869. It is of precisely the same character as the flower from which it has sprung, and has frequently been exhibited with an equal number of *Catherine Mermet* in the stand—a stand which is much admired. It is very fixed, and I have never known an instance of its falling back to the original.

Sunset.—A sport from *Perle des Jardin*, combining all the excellencies and defects of that flower, but of a rich tawny orange colour; like its parent, it is very difficult to open in wet weather, and sometimes comes with a cleft centre. Such a season as that we are having now suits it admirably, and its bright flowers, somewhat of the colour of *Madame Falcot*, are very attractive.

The Puritan.—A good deal of excitement was occasioned some years ago by the reception of a stand of this flower, which had been packed and sent in an ice-chamber from America, and which arrived perfectly fresh; but the flower is valueless for us. It is white, confused in shape, with a number of small petals, and very full, making it almost hopeless to open in wet weather.

Waban.—This is another and more recent sport from *Catherine Mermet*; the colour is deep salmon-rose, retaining all the good form and build of the type; it has not, as yet, been much exhibited here, but doubtless we shall see a good deal of it this season.

The Queen.—This, which is another sport obtained by Messrs. Dingee and Conard, of West Pennsylvania, appears to have been fixed about the same time as *Souvenir de S. A. Prince*, both being sports from *Souvenir d'un Ami*, but of course preference was given by English rosarians to their home Rose, and consequently the American sport has almost gone out of cultivation over here. Besides these there are several of more recent origin of which I know nothing, but of which Mr. Geo. Paul writes:—"Beside these are *Bridesmaid*, a beautiful pink sport from *Catherine Mermet*; *Oakwood*, a pink H.P.; *J. B. Hayes*, *Bourbon climbing La France*, received this year; climbing *Perle des Jardin*, a really climbing form; *Golden Gate*, a Tea in the way of *Souvenir d'Elise*; *Pearl Rivers*, a tinted white China; *Ruby Gold* is *Jean Ducher* (but *Ketten* of *Luxembourg* says that it is another sport from *Catherine Mermet*); *Rainbow*, a striped rosy China, is distinct; *H. M. Stanley*, no good; *Pink Pearl* we have not seen." As far as I know, these are all the *Roses* we have received from America, and, excluding those of a later date mentioned by Mr. Geo. Paul, I think we might send them all back, except *The Bride*, and our Rose gardens be none the poorer. Consequently, the notion which seems to have seized some people's minds that we are much indebted to our American cousins, has little foundation. There does not seem to be any person who systematically hybridises and saves seed, as do some of the growers in our own country. *Wild Rose*.

ROSA RUGOSA.

It is a pleasure to find that such beautiful *Roses* as *R. rugosa* and its forms are shown in bunches at the exhibitions, a feature that secretaries would be wise to encourage. The classes for the single and old-fashioned types are a source of much interest to visitors, who do not, as a rule, know the merits of prize hybrid perpetual or tea-scented blooms. *R. rugosa*, the Japanese species, is a splendid garden shrub—for such we may call it. The growth is spreading, dense, and the leaves of a polished green

colour. When the soil is deep, the branches will grow over 4 feet in height, and the large, single, fragrant, rosy-purple flowers are produced until quite the autumn, the crimson fruits adding rich colour towards winter. It makes a good hedge, and is grown thus in Mr. G. F. Wilson's charming garden at Wisley, forming a good barrier to cattle, and gay with flowers and fruits through a large portion of the year. The variety alba is a lovely Rose, the flowers similar to those of the species, but of the purest white. There is also a double crimson and a kind named Madame Georges Bruant, which has large, double, paper-white flowers—a distinct and interesting hybrid. *R. rugosa*, raised from seed, varies in colour, and we may anticipate in the future many more hybrids of fine character. Comte d'Epresnil is a form of this class, the flowers semi-double, purplish in colour, and very sweet-scented. It is one of the most fragrant Roses in cultivation. A large bush of *R. rugosa* on the lawn is very handsome, and it is adapted for grouping. *V.*

GARDENERS AND GARDENING ON THE RIVIERA.

GARDENING on the Riviera is very different to our English style of gardening; and to a man arriving from the north, everything seems different, and, broadly speaking, he has to commence gardening afresh, or to more closely define it, he has to proceed very cautiously until he knows the climate and the different seasons.

The French *Jardiniers en chef*, as we will term them, are generally ordinary labourers who, through having spent most of their life in gardens, have risen to the honourable post of head gardener.

They know the climate; they can produce a good supply of the ordinary flowers of the Riviera; they can tell a *Phoenix canariensis* from a *Washingtonia liliifera*; and they will do almost anything that is required of them in the way of manual labour, from the using of a spade, to standing a whole hour bare-headed in a snow-storm whilst talking to you (more polite than prudent on their part).

As in England, a man that can use a spade and shovel, and works in a garden, is called a gardener. These men are cheap, and suit the purpose of the majority of proprietors; but if the true definition of the word gardener were known, I am afraid they would fail to be classed under that heading. There are, no doubt, some French gardeners to be found that will hold their own with any of the leading men of the day, and these men, as a rule, occupy first-class places.

Where an Englishman is to be found, you almost invariably find a good garden, well kept, and in every way presentable.

Kew men are well to the front, as the training they get whilst at Kew (both in the nomenclature and cultivation of plants) serves them well out here, as the plants which are generally to be met with in these gardens are nearly all to be found at Kew; and whilst working in the various departments, one gets a good knowledge of them.

One example will be sufficient to prove my statement. In one of the finest and most noted gardens on the Riviera, with which I am well acquainted, the gardener (who, by the way, was a Frenchman, and, to boot, a very clever man) planted many rare things which do well here during the summer, but which require thin protection from the slight frosts we get occasionally during the winter.

In his time they grew and flourished under his careful and skilful culture, but the man who succeeded him was not a *connoisseur des plantes*. One after another was killed, and found its way to the rubbish-heap without the slightest ceremony; and, in this way, many valuable plants, that once added greatly to its reputation, have returned to the dust from whence they came. Unlike the north, we have no good works or periodicals treating on the culture

of plants in this climate, and, therefore, a man coming out with a good knowledge of plants, has an advantage to commence with.

With so many valuable plants under our charge, our anxiety is further increased by the possibility of heavy losses, which we often experience amongst our batches of annual plants, which are so much used for bedding-purposes. For example, a man may have a fine healthy batch of Carnations at the present time, but before the winter he may lose more than fifty per cent. of them.

Again, last season the Pansies were attacked by a disease, and some gardeners lost almost the whole of their stock by it. The cause of so many diseases is obvious, if we take into consideration the nature of our soil. It consists chiefly of sandstone and limestone, which, in a crude state, is solid rock, which has to be broken to pieces, and often in the first place blown out with gunpowder, and after being exposed to the air and moisture, it crumbles up and forms the soil of our gardens.

Now, it is evident that this soil does not contain sufficient ingredients for the welfare of the generality of plants, especially annuals, and if the material is not supplied in the way of manure, &c., and in sufficient quantity, the plants must naturally suffer. Again, the diseases—if such they may be termed—are not of a lingering nature, for a batch of plants may be in good health one week and dead the next.

Many instances of this kind are to be noted during the hottest part of the year, which again, as far as I have observed, is caused by the excessive heat of the sun. It is natural that the greater the heat, so much greater must be the respiration and assimilation; and, if the necessary ingredients are not supplied to compensate the loss, the plants must naturally suffer.

Again, it must not be overlooked that evaporation from the soil goes on much faster under the influence of the scorching sun, and the soil, being of a very porous nature, gives it off more freely. There are many little points which might be of interest to readers, of the success or failure in the cultivation of many plants, which, in England, are of little or no trouble to grow; but, in the face of all odds, I must admit that good gardening on the Riviera is much more difficult than in England, but *malheureusement* proprietors cannot as yet be convinced of the fact. *Riviera.*

TRADE NOTICE.

We learn that Mr. R. S. Baxter, for many years foreman of the Botanic Garden, Oxford, son and grandson of former distinguished Curators of the garden, has taken the Marston Street Nursery at Oxford. Mr. Baxter's extensive knowledge of plants and their culture should stand him in good stead in his new venture.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

LEOPARD AND HARVEST LILIES.—Have any of your readers heard the term Leopard Lily given to any other plant than the genus *Lachenalia*? and is there such a plant as the Harvest Lily? *E., Cardiff.*

Obituary.

JOSEPH THEOBALD, for the past thirty years florists' foreman to Messrs. George Bunyard & Co., Maidstone, passed away on June 29, after a few days' illness. He was a quiet, and much respected man, and was formerly with Mr. Ben Cant, of Colchester, where he propagated that queen of Tea Roses, *Souvenir d'Elise*.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.						RAINFALL.		BRIGHT SUN.	
	Above (+) or below (—) the Mean for the week ending July 1.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
0	1 +	90	0	+ 352	— 57	3 —	106	18.5	25	26
1	0 aver	99	0	+ 255	— 21	1 +	87	11.0	34	33
2	2 +	116	0	+ 285	— 62	1 —	72	8.0	36	37
3	1 +	125	0	+ 341	— 37	3 —	71	7.4	46	45
4	2 +	128	0	+ 448	— 47	2 —	71	7.9	45	42
5	1 +	130	0	+ 386	— 43	1 —	68	7.8	43	46
6	1 +	104	0	+ 352	— 63	3 —	84	15.2	31	37
7	2 +	121	0	+ 445	— 91	3 +	76	10.6	38	37
8	1 +	125	0	+ 494	— 70	0 aver	70	11.7	48	49
9	2 +	115	0	+ 393	— 104	3 +	92	12.6	40	31
10	0 aver	116	0	+ 423	— 100	4 +	80	13.3	35	36
"	3 +	141	0	+ 573	— 52	0 aver	73	9.4	53	57

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; " Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending July 1, is furnished from the Meteorological Office:—

"The weather continued unsettled, and showery in all districts during the earlier part of the period, with thunder and lightning in several localities. Subsequently, however, the conditions became fine and dry again in all districts, and continued so for the remainder of the week.

"The temperature equalled the mean in 'Scotland, E.' and 'Ireland, S.' but was slightly above it in all other districts. The highest of the maxima, which occurred at most stations on July 1, varied from 86° in the Midland Counties, to 85° in the 'Channel Islands,' and 84° in 'England S. and S.W.,' to 74° in 'Ireland, S.' The lowest of the minima were recorded, as a rule, during the earlier days of the period, and ranged from 35° in 'Scotland, W.,' and 39° in 'Ireland, N.,' to 44° in 'England, N.E.,' and to 49° in the 'Channel Islands.'

"The rainfall was rather more than the mean in 'Scotland, E.,' 'England, N.W.,' and over Ireland, and just equal to it in 'England, S.W.,' and the 'Channel Islands;' in all other districts, however, there was again a deficit. In some parts of Ireland the rain was very heavy locally—that on Tuesday at Dungannon the large amount of 3.33 inches was recorded between 12.30 and 7 P.M.

"The bright sunshine was rather less than the normal in Scotland, but exceeded it over England and Ireland. The percentage of the possible duration ranged from 53 in the Channel Islands, and from between 43 and 48 in most parts of England, to 31 in 'Scotland, W.,' and 25 in 'Scotland, N.'"

CHISWICK GARDEN FLOWER SHOW.—On Tuesday, July 11, the Committees of the Royal Horticultural Society will meet in the Gardens at Chiswick, which we may remind our readers are near to Acton Green, Turnham Green, Gunnersbury, Chiswick and Kew Bridge Stations. A special show of Carnations and Picotees, by the National Carnation and Picotee Society will be held in conjunction with the Society's meeting. The Fruit, Floral, and Orchid Committees will meet at 11 A.M., and Lady GEORGE HAMILTON has kindly consented to distribute the prizes in the afternoon. The Band of the Royal Horse Guards, under the direction of Mr. CHARLES GODFREY, will perform during the day, and the exhibition will be open to the public from one to eight P.M. Fellows of the Society and special subscribers will be admitted to the gardens at noon. Intending exhibitors should not fail to communicate the nature of their exhibits to Mr. BARRON forthwith, so that the required amount of space may be allotted.

CARNATION DUCHESS OF YORK.—We have received from Mr. GIFFORD, Montague Nurseries, Tottenham, some fine blooms cut from plants growing in the open ground of the above variety. In colour it is just that of the *Souvenir de la Malmaison* Rose, with the centre a tender pink, as in that Rose. It is a fairly full flower, with florets simply arranged, not confused, as in the Carnation of that name, and fragrant. A desirable addition to border Carnations.

MARKETS.

COVENT GARDEN, July 6.

MARKET dull to-day in consequence of the Royal Wedding, but a brisk business during the week, with heavy supplies at prices somewhat easier. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Hydrangea, per doz. 12 0-24 0
Aspidistra, per doz. 15 0-30 0	Ivy Geranium, doz. 4 0-6 0
— specimen, each 7 6-21 0	Lilium Harrisii ... 18 0-30 0
Calceolaria, per doz. 4 0-6 0	Lobelia, per doz. ... 3 0-6 0
Cockscombs, per doz. 4 0-6 0	Marguerite, per doz. 6 0-12 0
Crassula, per doz. ... 18 0-42 0	Mignonette, per doz.
Cyperus, per dozen 4 0-10 0	— pots 4 0-6 0
Dracena, each ... 1 0-5 0	Musk, per doz. ... 2 0-4 0
Ferns, various, doz. 4 0-9 0	Nasturtium, p. doz. 4 0-6 0
Ferns, small, per 100 ... 5 0-8 0	Palms, various, each 2 0-10 0
Ficus elastica, each 1 6-7 6	— specimens, each 10 6-84 0
Foliage plants, doz. 12 0-42 0	Pelargonium, p. doz. 8 0-12 0
Fuchsia, per doz. ... 6 0-9 0	— scarlet, p. doz. 3 0-6 0
	Saxifrage, per doz. 12 0-18 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-4 0	Pansy, per doz. bun. 1 0-2 0
Aster (French), bun. 2 0-2 6	Orchids—
Bouvardia, per bun. 0 6-1 0	Cattleya, 12 blms. 6 0-12 0
Calceolaria, doz. bun. 4 0-6 0	Odontoglossum
Carnation, doz. bun. 4 0-9 0	crispum, 12 blms. 2 0-6 0
— dozen blooms 1 6-4 0	Pelargonium, scar-
Cornflower, 12 bun. 1 0-3 0	let, p. 12 bun. 4 0-6 0
Eucharis, per dozen 3 0-4 0	— 12 sprays 0 6-0 9
Gardenia, per dozen 1 0-3 0	Pink, various, 12 bun. 2 0-6 0
Heliotrope, per doz. ... 0 4 0 6	Poppo, doz. bunches 1 6-4 0
— sprays ... 0 4 0 6	Primula, dble. p. bun. 0 6-1 0
Lilium lancifolium, ... 12 0-18 0	Pyrethrum, 12 bun. 2 0-4 0
— per doz. blooms 2 0 4 0	Roses, doz. bunches 3 0-8 0
— Harrisii, p. doz. 3 0-5 0	— Tea, per dozen 0 6-2 0
Maiden Hair Fern, ... 4 0-6 0	— coloured, dozen 2 0-4 0
12 bunches ... 4 0-6 0	— yellow (Maré-
Marguerite, p. doz. ... 1 6-3 0	chals), per doz. 1 6-6 0
bunches ... 1 6-3 0	— red, per dozen ... 1 0-1 6
Mignonette, 12 bun. 2 0-4 0	Stocks, per bunch ... 0 4-0 6
Myosotis, 12 bunches 2 0-3 0	Sweet Sultan, 12 bun. 2 0-4 0
	Tuberose, 12 blms. 0 4-0 9

ORCHID-BLOOM IN VARIETY.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Cherries, half-sieve, 4 0-7 0	Lemons, per case ... 12 0-20 0
Currants, black, ½ sve. 4 6-4 9	Peaches, per doz. ... 3 0-9 0
— red, do. ... 2 0-4 0	Pine-apples, St. Mi-
Cobs, per 100 lb. ... 2 0-5 0	chael ... 2 0-5 0
Gooseberries, half-sve. 1 6-2 0	Oranges, per case ... 20 0-30 0
Grapes, per lb. ... 1 0-2 0	Strawberries, per lb. 0 3-1 6

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 1 6-2 0	Mushrooms, punnet 2 0-0
Beet, red, per dozen 2 0-3 0	Mustard and Cress,
Carrots, per bunch ... 0 4-0 6	punnet ... 0 4-0
Cauliflowers, each ... 0 3-0 6	Parsley per bunch ... 0 3-0 6
Cucumbers, each ... 0 4-0 8	Shallots, per lb. ... 0 6-0
Endive, per dozen ... 2 0-3 0	Tomatoes, per lb. ... 0 6-1 0
Herbs, per bunch ... 0 9-1 0	Turnips, per bunch ... 0 4-0 6
Lettuces, per doz. ... 1 6-2 0	

SEEDS.

LONDON: July 5.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that

as was expected, this morning's seed market presented quite a holiday appearance, with but little business passing. For their new Trifolium, the French are asking long prices; a few good-sized parcels of home-grown seed have been sent to market. There is no change in either Mustard or Rapeseed. Canary seed, as is always the case at the turn of the half-year, is dull of sale, but meantime, values show great strength. Linseed is rather dearer. Hemp-seed keeps firm. For Peas and Haricots full prices are made.

FRUITS AND VEGETABLES.

BOROUGH: July 4.—Quotations:—Peas, 2s. to 3s. 6d. per bushel; Cabbages, 4s. to 6s. per tally; Parsley, 3s. per dozen bunches; Egyptian Onions, 4s. 6d. to 5s. per cwt.; Horseradish, 2s. 6d. to 2s. 9d. per bundle; Cherries, 4s. to 6s.; Gooseberries, 1s. 6d. to 2s. per half-sieve.

FARRINGTON: July 6.—Quotations:—Apples, 4s. per bushel; 1s. 9d. per basket; Green Gages, 2s. to 2s. 6d. per flat; Cherries, 4s. per bushel; Currants, White, 2s. per 15lb.; do., Black, 2s. 6d. per 24 lb.; do., Red, 3s. per 24 lb.; Raspberries, 3d. per pound; Gooseberries, 1s. 6d. to 2s. per half-bushel of 24 lb.; Tomatoes, 5d. per pound; Grapes, 10d. per pound; Cucumbers, 3s. per dozen; Peas, 2s. 6d. to 3s. 6d. per bushel; Cabbages, 4s. to 6s. per tally; Onions, Egyptian, 4s. 6d. to 5s. per cwt.; Turnips, 2s. 6d. to 3s. 6d. do.; Carrots, 1s. 6d. per dozen bunches.

SPITALFIELDS: July 4.—Quotations:—Cabbages, 4s. to 6s. per tally; Peas, 2s. to 3s. 6d. per bushel; Turnips, 2s. 6d. to 3s. 6d.; Egyptian Onions, 4s. 6d. to 5s. 6d. per cwt.; Horseradish, 2s. 6d. to 2s. 9d. per bundle; Cherries, 4s. to 6s.; Gooseberries, 1s. 6d. to 2s. per half-sieve.

STRATFORD: July 5.—There was an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Cabbages, 2s. 6d. to 5s. per tally; Cauliflowers, 9d. to 1s. 6d. per dozen; do., 3s. 6d. to 7s. per tally; Mangels, 2s. to 2s. 6d. per ton; Onions, Egyptian, 80s. to 100s. do.; Apples, English, 3s. to 4s. 6d. per bushel; Black Currants, 3s. to 4s. 6d. per half-sieve; Gooseberries, 1s. 6d. to 2s. 6d. do.; Plums, 2s. to 3s. 2d.; Pears, 2s. to 2s. 6d. Vegetables: Marrows, 1s. to 2s.; Horseradish, 2s. 3d. to 2s. 6d. per bundle.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 140s. to 165s.; do., new, 115s. to 130s.; do., inferior, 100s. to 120s.; hay, best, 145s. to 165s.; do., inferior, 90s. to 100s.; new mixture, 115s. to 130s.; and straw, 42s. to 50s. per load.

NOTICES TO CORRESPONDENTS.

BOOKS: *Beginner. Hensfry's Elementary Course of Botany; Moore's Handbook of British Ferns.*

DATES OF SHOWS: *T. O. C.* The dates of horticultural shows of importance are given in these columns from week to week, but not agricultural shows; for those you should apply to the agricultural journals.

GRAPES DISEASED: *B. W. A.* The berries are affected with the so-called spot, a fungus—*Glaeosporium laticolor*. Cut out and burn the berries which show the least trace of spotting. Let the air of the vinery be warm, buoyant, and always in motion, the reverse of cool, moist, stagnant—conditions that favour the growth of the fungus. Keep the flowers-of-sulphur mixed like mustard about the vinery in saucers. Coat the hot-water-pipes with lime and sulphur wash, and use them when there is need to do so.

GRAPES SHRIVELLING: *J. R. R.* Without knowing more about the state and treatment of the Vines than your note affords, and seeing the produce, &c., we cannot tell you why the berries shrivel. Kindly send specimens of the best and worst bunches, shoots, leaves, &c. The gardener certainly should not keep the borders covered with manure and straw at this season. The roots of Vines need heat as much as the top growth, and masses of manure, &c., hinder the heat penetrating the soil.

GRAPES THAT HAVE LOST THEIR BLOOM: *One in Distress.* We should suppose, now that you have washed the bloom off the fruit by inordinate syringing, you might restore it after the manner of the ladies, by means of violet powder and a puff! This is the only advice we can afford you.

HOTELS FOR GARDENERS VISITING LONDON: *W. C.* We cannot recommend particular establishments, but we would advise *W. C.* to patronise the larger hotels in preference to the smaller ones and coffee-houses. They are cleaner, the service and cooking are better, and the prices are not extravagant.

INSECTS: *R. S. B.* The Longicorn Beetle is *Diapenesis* sp., which seems to have been imported with some plants lately. If it breeds here it will prove

troublesome. The only remedy we can suggest is to catch and destroy. If you have more specimens, please send some.

MANGEL WURZEL OF LAST YEAR: *A. P.* If the roots are still sound, and the tops can grow a little, the stacks being ventilated at the apex in the usual way, there is no reason why they should not be used as cattle food during late autumn and early winter. They will lose in nutritive qualities if their juices have to support new top-growth, and we think that unless growth is made, withering, and eventually decay, will occur very soon.

NAMES OF PLANTS: *J. W.* Tall one, *Armeria vulgaris*; dwarf, *A. maritima*.—*Buckley*. *Camassia Fraseri*, a native of United States of America. *G. H. S.* *Vaccinium arboreum*.—*Hugo M.* *Campanula lactiflora*, fine specimen; more than usually glabrous.—*R. R.* 1, *Lysimachia verticillata*; 3, *Erinus alpinus*; 6, *Anchusa officinalis*.—*C. W. D.* *Campanula lactiflora*.—*Dorset*. 1, *Leycesteria formosa*; 2, *Escallonia rubra*.—*A. Clark*. We cannot name the Rose; 2, *Spiraea arizifolia*.—*R. O.* A species of *Malpighia*, of which several were or are in cultivation. We will endeavour to give you the specific name next week. In the meantime, we do not think it would be a good commercial plant, but of that you ought to be a better judge than we.—*J. W.* A species of *Fraxinus* or Ash, we will endeavour to give you the specific name next week.—*B. H. & Son*. *Rhynchosyris* (*Saccolabium*) *guttata*; *Adiantum* *Waltoni*; *Hedera Helix digitata*.—*Monmouth*. *Oncidium Lanceanum*.—*C. E. H.* 1, *Tanacetum vulgare*; 2, *Sidalcea malviflora*; 3, *Malva moschata alba*; 4, *Hieracium aurantiacum*; 5, *Hesperis matronalis*, double-flowered; 6, *Rosa lutea*.—*A. H. S.*, *R. H. S.*, *E. D. L.*, *J. T. L.*, all next week.—*L. M. C. S.* Both seedlings of *Kentia Forsteriana*.—*A. H. P.* *Pelargonium ignescens*.

OPEN-AIR TOMATOS: *F. N. Evesham*. You will find full instructions for preparing the Bordeaux Mixture on p. 12 of our last issue. Do not wait till the disease appears on the plants before making use of the remedy, but do not use it if the fruits are near to ripeness.

ROSES: *A. C.* We cannot undertake to name Roses. Send them to a nurseryman who grows Roses largely.

VINE, MELON, AND TOMATO: *J. Shepherd*. I see nothing but a sickly, emaciated appearance, like rapid decline. There is no fungus. It is wholly indeed a question of culture, and I cannot say what. It is not a fungus attacking indiscriminately Vines, Melons, and Tomatoes; besides, there is no trace of fungus, there must be some local cause not to be guessed from the plants. They have no vigour in them, but I find no spots, and nothing to suggest fungus disease; they are simply miserable rickety children, being "coddled to death." *M. C. Cooke*.

VINES: *Subscriber*. I find no fungus disease at all. I think the mischief must be at the roots. *A priori*, the fact that several other Vines are in the same house, and doing well, is against fungus disease, and points to something exclusively belonging to this Vine. The brown spots on the edges of the leaves are peculiar; you will see how they retreat inwards in concentric waves in a way no fungus spots are formed, and there is no mycelium. The general character of the leaves and branches is that of healthy tissue, but checked suddenly. The Grapes are so small, too, and in rotting are covered with a white bloom. Within the berry I have not found a thread of mycelium. It is no fungus there. Outside the white bloom is a very small mould, but a saprophyte, a minute *Penicillium*, quite innocent of any mischief, and follows on the rotting berries. *M. C. Cooke*. [The setting, from some cause or other seems to have been imperfect. Ed.]

COMMUNICATIONS RECEIVED.—*W. Sowerby*.—*W. E. Duoning*.—*Crystal Palace Company*.—*E. T.*—*S. M.*, Paris.—*E. B.*, Reval.—*T. A.*—*E. W. B.*—*R. H.*—*H. W. W.*—*Ch. de B.*, Liège.—*H. T.*—*J. A.*—*H. H. D.*—*E. P.*, Ghent.—*G. R.*—*J. C. B.*, Troyes.—*H. C. W.*, Singapore.—*W. S. Thomson*.—*Ed. Mawley*.—*R. D.*—*J. B.*, too late for this week.—*J. R.*—*R. D.*—*A. S.*—*W. K.*—*W. S.*—*M. T.*—*Extension*.—*E. M.*—*H. W. W.*—*W. G. S.*—*J. B.*—*J. M.*—*S. A.*—*J. V.* & Sons.—*J. B. M.*—*A. G.*—*A. C.*

PHOTOGRAPHS RECEIVED, WITH THANKS.—*E. T.*—*H. T.*

BIRTH.—On July 4, at 30, Kenwyn Road, Clapham, the wife of ARTHUR GEORGE MARTIN, publisher of this journal, of a son.

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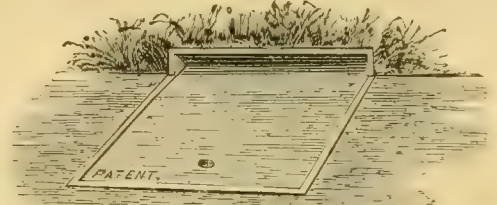
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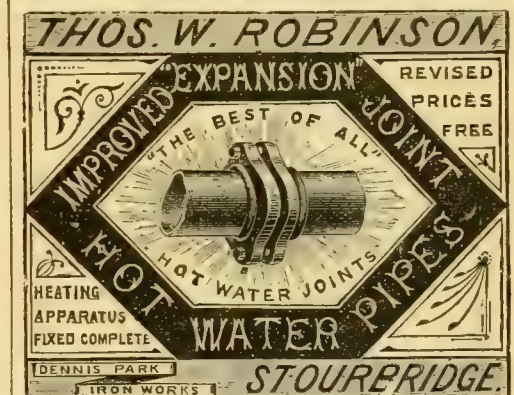
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The pressure upon our space at this season of the year is so great, we are compelled to state that advertisements received after 6 P.M. on Wednesday will, in all probability, be held over to the next week.

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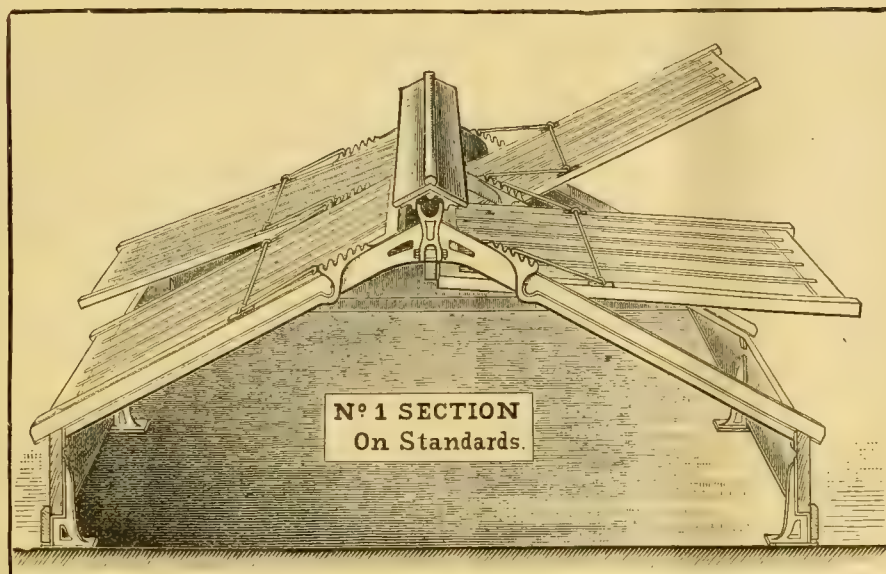
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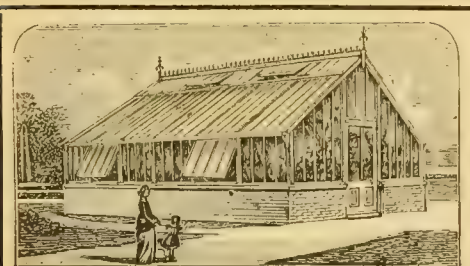
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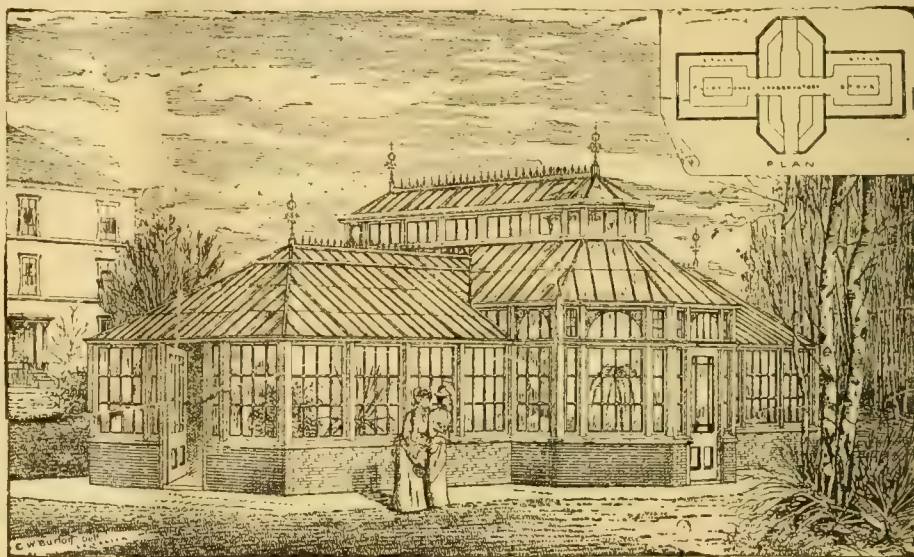
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2742.

No. 342.—VOL. XIV. {THIRD SERIES,}

SATURDAY, JULY 15, 1893.

{Regt. as a Newspaper. PRICE 3d. POST-FREE, 3½d.}

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"GARDENERS' CHRONICLE."

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Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, July 21, at half-past 12 o'clock, by order of Mr. F. SANDER, St. Albans—

IMPORTED AND ESTABLISHED ORCHIDS, among which will be found the following:—

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A superb importation, in finest condition, from the district which produced the grand White varieties lately flowered.

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A magnificent variety, rivalling *C. gigantea* for size of flower. Colours exceedingly rich and varied.

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A grand flower for cut purposes. Gold and Bronze, produced on branching spikes in great profusion.

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CYPRIPEDIUM NICHOLSONIANUM,

A very distinct and beautiful *Cypridium*, from the Island of Palawan.

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With hundreds of rosy-red and purple flowers.

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VANDA HOOKERÆ. CÆLOGYNE PANDURATA, &c.

On view morning of Sale, and catalogues had.

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MESSRS. MAXEY AND SON have received instructions to SELL by AUCTION, at the "White Hart" Hotel, in Wisbech, on THURSDAY, August 3, 1893, at 7 o'clock in the evening precisely, a very valuable ORCHARD and FRUIT GARDEN, situate in the village of Elm, about 2 miles from the Market Town of Wisbech, and in the midst of one of the finest fruit-growing districts in that neighbourhood. The property comprises in all 28 a. 0 r. 36 p. of extremely valuable land (the soil being of the richest quality, and especially adapted for the cultivation of Strawberries), together with a commodious brick and thatched Farmhouse, with large Barn, Granary, Stables, and other outbuildings.

Possession will be given at Michaelmas next.

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VALUABLE STOCK

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NEW IMPORTATION of BRAZILIAN ORCHIDS, just arrived, in splendid condition (eight cases ex Orellana S.S.). Also, New Importation from Borneo. Full particulars post-free on application.

Inspection cordially invited.

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CARNATIONS FROM SEED.—Seed of my own saving and hybridising, producing 75 per cent. of Double Flowers, equal to the finest named sorts, but with greater vigour of growth and abundance of flowers. 25 seeds, 1s.; 100 seeds, 3s.; 500 seeds, 12s. 6d. Carnation Marguerita, flowering first season, 1s. per packet, post-free. THOS. BUTCHER, Seed Merchant, Croydon.

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ESTABLISHED UPWARDS OF HALF A CENTURY.

SOW NOW FOR SPRING FLOWERING.

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JOHN TAYLOR, Hon. Sec., Trentham.

SALTERHEBBLE and DISTRICT (HALIFAX) ROSE SHOW.—THURSDAY, July 27. Schedules on application to the Secretary—

JNO. E. BROOKS,

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For Best Twelve Plants, £15, £10, £5, £2 10s. Central Group for Conservatory Decoration, £9, £6, £2 10s. Collection of Fruit (eight varieties), £5, £3, £1 10s. Twenty-four Roses, £3, £1 10s., £1. Collection of Vegetables (twelve varieties), selected, £3, £2, £1. Entries close July 28. Schedules and full particulars from—

Northampton, July 1, 1893. W. B. TROUP, Secretary.

LEEDS PAXTON SOCIETY'S CHRYSANTHEMUM SHOW.

TOWN HALL, LEEDS, TUESDAY and WEDNESDAY, November 7 and 8, 1893.

For Entry Forms and Schedules apply to the Hon. Secretary, W. HOLBROOK, St. Ann's Villas, Headingley, Leeds.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

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Special Cheap Offer for really good large Flowering Bulbs:—Pancratiums, all best sorts, grand bulbs, ready to burst into flower—P. fragrans, P. caribaeum, P. amœnum, P. zeylanicum grandiflora, some bulbs 12 inches round, 18s. to 40s. per 100; 2s. 6d. to 6s. per dozen. Glorio-a superba, just imported, 25s. per 100, 4s. per dozen. Crinum Kirkii, very large plump bulbs, 50s. per 100, 8s. per dozen; C. zeylanicum, and C. asiaticum, large white flower, 5s. to 8s. per dozen; extra large, 20-inch bulbs, 2s. 6d. and 3s. 6d. each. Ammocharis falcata, splendid bulbs, make fine Pot Plants, 3s. each. Zambias, for Table Plants, 1s. each. Amorphophallus campanulatus, or Stanley's Wash-Tub flowers 2½ feet a rose, 6s. per dozen, 1s. each. Babianas, in ten sorts, 12s. per 100. Ixias, in sorts, 10s. per 100. Freesia ref. alba, true, 18s. to 26s. per 1000. Above is Cheapest Offer ever made for first-class Bulbs. Terms, Cash with Order. All Bulbs warranted sound and freshly imported, or money returned.

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IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will NOT be worried to order.

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Prices for GLADIOLUS, &c., on application.

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500,000 LILY OF THE VALLEY PIPS.

Capable of blooming. Grown on the very best soil. For Sale in the Autumn, 1893. Price 23 marks per 1000 for cash, or 4 months' credit against first-class references. My Lily of the Valley cultivation is the largest at this place, and this year they are in superior condition, as I possess the best and most suitable soil.

Upon receipt of order, I will forward in October, a sample parcel, at 3 marks per 100. Cash on delivery. Intending buyers are requested to communicate at once with—

FRANZ GOETZE, Berlin, O., vor dem Stralauer Thore, 37. (Special Cultivation of Lily of the Valley Pips and Bulbs).

BULBS.—Our special offer of Daffodils, and other Bulbs for early planting, is now ready. Lilium candidum, 10s. and 12s. per 100; Lilium Harrisii, 5s. to 10s. 6d. per dozen; Roman Hyacinths, 12s. 6d. and 16s. per 100, very scarce; Narcissus (paper-white), 5s. per 100; Narcissus Double Roman, 5s. per 100; Gladiolus Colvilli (The Bride), lovely for cutting, 2s. 6d. per 100; Iris hispanica (the poor man's Orchid), finest mixed, 1s. 6d. per 100. Every article the best procurable.

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FERNS! FERNS!—Trade.—Greenhouse and

Store, 25 saleable sorts, in 2½-in. pots, 12s. per 100; 10 best market sorts, in 4½s. 6s. per doz.; stores, 6s. per 100. Large Adiantum cuneatum, value in fronds, 6s. and 8s. per doz. Cyperus, Aralias, Grevilleas, in 4½s. good value, 6s. per dozen. Palms, Ficus, & Dracenas, 1s. each. Hydrangeas, Pelargoniums, Marguerites, 9d. each, in 4½s. 1s. each. P. tremula and A. cuneatum, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—J. SMITH, London Fern Nurseries, Loughboro' Junction, London, S.W.

NEW & VALUABLE STRAWBERRIES

MESSRS. JAMES VEITCH & SONS

Are now booking Orders for the following magnificent kinds:

EMPRESS OF INDIA—GUNTUN PARK—LORD SUFFIELD,

Raised by Mr. William Allan, gardener to the Right Hon. Lord Suffield, and known as the GUNTUN PARK STRAWBERRIES.

ALL have received FIRST-CLASS CERTIFICATES from the Royal Horticultural Society; also the Highest Awards at Edinburgh, Wolverhampton, Earl's Court, and Norwich.

Price, 42s. per 100, 6s. per dozen. In small pots, 60s. per 100, 9s. per dozen.

"LORD SUFFIELD is a decidedly distinct variety, very sweet in flavour, the flesh firm and highly-coloured. The plant exhibited, to show its bearing-qualities and habit, left nothing to be desired. The fruit of GUNTUN PARK shown was very fine, having borne the journey well. The plant sent showed this to be an excellent late variety, of robust growth, and an immense bearer. EMPRESS OF INDIA is the result of a cross between British Queen and Countess, possessing all the good qualities of both parents. Very useful for forcing."—*The Garden*.

"The Strawberries travelled the long distance between Guntun and here (Kingston) admirably, turning out as bright and fresh as if just gathered. EMPRESS OF INDIA has much of the old Pine flavour—the flesh is soft and smooth, and of a beautiful scarlet; a high-class dessert Strawberry. LORD SUFFIELD has firm flesh, of a rich crimson hue, and a delicious vinous flavour. GUNTUN PARK is a large, somewhat Cockcomb-shaped fruit, of a deep blood-crimson; flesh very firm, and of striking flavour. This, being a great cropper, should make a fine market variety."—*A. Dean, in Journal of Horticulture*.

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FOR SALE, through want of room, Specimen PALMS, DRACENAS, SHRUBS, YUCCAS, CAMELLIAS, Standard BAYS, and large FERNS, all established in pots and tubs.—STROUD BROS., 182, Green Lanes, Finsbury Park, N.

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PALMS, FERNS, &c.—FERNS in Variety.—ARALIAS and CYPERUS NATALENSIS in 4's, 6s. per dozen; LARGE A. CUNEATUM in 4's, 6s. and 7s. per dozen; PALMS in variety, and FICUS in 4's, 12s. per dozen; PALMS, fine stuff, in large 60's, 5s. per dozen; FERNS and CYPERUS, in 24 inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order. LANE AND MARTIN, 247, Brixton Road, London, S.W.

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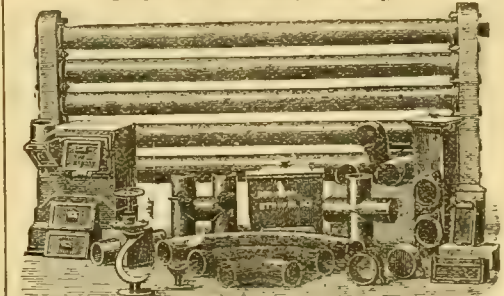
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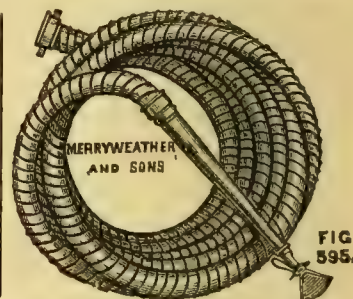
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A large general Collection of Roses in pots for planting out, climbing, and pot culture, 9s. to 18s. per dozen; extra strong, 24s. to 42s. per dozen.

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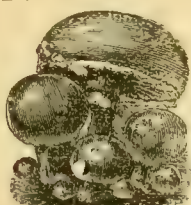
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THE Gardeners' Chronicle.

SATURDAY, JULY 15, 1893.

ROSES IN THE DROUGHT.

WHERE the cultivation of a plant is so thoroughly artificial as that of the Rose, whose every want is not only attended to but anticipated by the enthusiastic grower, especially if he be an exhibitor, I do not imagine that the lessons of this long and terrible drought will be of a very valuable character. Of course, a great deal will depend upon the situation and soil, as well as on the supply of water, but I confess that on looking round my own small collection, there are one or two things that puzzle me. My garden is situated about 250 feet above sea-level, on the slope of a chalk hill, about two-thirds down. It is sheltered from the north and east, but fully exposed to the south and south-west; the soil is ordinary light garden soil, so that it is needful from time to time to put in some heavy loam to strengthen it. I grow my plants upon various stocks, Manetti, seedling Briar, and Briar cuttings, and do not find any very great difference amongst them. Of course, I do not grow my Teas on Manetti. I have a good supply of water, which, as I need not add, has been plentifully made use of this season. As my Roses have been in the same beds for many years, I determined last autumn to lift and replant them; this I did in every case, with the exception of one bed, and the drought has told upon the former most unmistakably. The plants are healthy, but they have not grown much, and there is an almost total absence of those long vigorous shoots coming up from the base of the stem on which we depend for the production of good blooms in the next year. The bed that was not lifted is just as vigorous as ever, forming a striking contrast to the others. I do not think, however, much is to be learned from this fact; we cannot foresee what the weather is likely to be, and therefore to say do not lift when there is any likelihood of drought would be utterly beside the mark.

A matter which has very much surprised me, considering not only the drought, but the immense amount of bright sunshiny weather we have had, is the almost total absence of aphides, and yet on all sides we hear, as might have been expected, the immense number and ravages of insect-pests of all kinds. I have not syringed my plants, or done anything to keep them clean, and yet with all that they are perfectly so; this at a time when the farmers around me have great difficulty in keeping down the insect plagues that infest their Hops. Should they appear, however, I think, from experience, that "Stott's Killright" will soon settle them.

But that the drought has had a most prejudicial effect on Rose blooms cannot for a moment be questioned; not only has this been manifested in the exhibitions which have taken place, but in our own gardens. In the northern parts of the kingdom, where the drought has been less severe, the

professional growers have had a great advantage, but it is hardly with them we can see so fully the effects of the drought. In going through the amateur's division at the National Rose Society's show at the Crystal Palace, one could not fail to be struck with the inferiority of the blooms. There were, it is true, some exceptions, but when a lady said of the best hybrid perpetual in the amateur's division, "bad is the best," and the exhibitor thereof assented to the criticism, we have a pretty sure indication of what the general character of the flowers was. How could it be otherwise? the bloom buds were hardly coloured before the bright sun forced them on, and the consequence was that flowers were thin, poor, and devoid of colour. But there was another enemy beside the drought we had to contend with, namely, the severe frost on June 1. Now, we are told by those wise gentlemen who know everything, and despise ignoramuses, that a dry frost is not injurious; but this was a dry frost, and amongst other cases I may mention the fact, that in my friend Mr. Haywood's garden at Reigate, 3000 buds injured by the frost had to be removed. Tea Roses, I think, suffered less, and indeed at one time seemed to rejoice in the drought and heat, although they, too, had but a brief existence.

There is another very serious matter in connection with the drought—namely, its effect upon stocks and upon the operation of budding; the loss in Briar stocks has been immense, and of necessity the prices of Roses must go up. Not only have standard stocks, but in some places even the Manetti has suffered, and I should imagine that the operation of budding will not be an easy or safe one this year; the bark will, I fear, be found difficult to rise, and the insertion of the bud not easy. On the other hand, we know that this kind of weather prevails very much in those portions of France where the larger quantity of Roses are cultivated; in fact, we are experiencing very much the same kind of weather as is habitual in Lyons and its immediate neighbourhood.

Such are a few of the facts connected with the drought, but, as I have said, they do not seem to me to convey any lessons worth recording. Such a season as the present is unprecedented. We may never have another, at least for another century, and I think the only advice that I can give to my brother rosarians is that of the Jack Tar to his messmate who had been ordered up to receive the cat, "that he must grin and bear it."

FRUIT TREES.

Roses and fruit trees are very often connected together in advertisements. There must be some recognised connection between them, and so I venture to add a few remarks upon the state and condition of my own garden, which is to me bewildering. We have always been told that, if we have a wet autumn, and, consequently, unripened wood, we must not expect fruit the following year. Now, in the months of August, September, and October of last year we had 370, 1.57, and 7.45 inches of rain. The wood looked green, sappy, and unripened, yet never have I seen such a wealth of blossoms as this spring. "Oh! yes," we were told, "but the blossoms are small, unfertile, and will not set;" however, they did set. Then we were told "Yes, but they will drop off;" but they did not, and I may safely say that during the 25 years that I have occupied this garden I have never had so large and so excellent a supply of fruit. Strawberries were perhaps the exception, but still they were fairly good, but of Raspberries, Gooseberries, Currants—black, red, and white, I have had a profuse supply of magnificent fruit. Apples and Pears promise equally well. I ate some very good Juneatings yesterday, and all the Apple trees, cordons, and standards are full of good-looking, healthy fruit. Pears are still more remarkable. I have four large trees, about 20 feet high, of Bon Chrétien, Bishop's Thumb, Beurré de Capiaumont, and Comte de Lamé. These are all well covered with fruit, and it may be gathered from the fact that on a branch of Bishop's Thumb which had been broken off by the high wind two nights ago,

which was 4 feet in length, I counted forty-eight good fruit about the size of a small hen's egg. Pears on walls and bushes are equally productive; one oarge Walnut tree which is in my front paddock has bushels of fruit on it, and thus I may again repeat that all round, in spite of the drought, I have in my own garden experienced a most fruitful season.

One thing I have learned, and that is to increase my distrust of those gentlemen who form theories; as no one can tell us the cause of this terrible drought, so I do not believe that we can learn much about it. All that we can hope for is, that we may never have a recurrence of such a season. I need hardly say that my garden is thoroughly well cultivated, but I have seen exactly the same results in gardens around me; and good cultivation, although it may be very useful in seasons of drought, can have little to do with the large fruit trees of which I have written. It is all very well to tell the farmer that if his land is good and well cultivated, he can stand the drought better than others; but what with high rates of wages, low prices, and increasing county-council rates, it seems a mockery. He might well reply, as a member of a brass band did to his conductor, who told him to blow harder, "It is all very well to say blow harder, but where is the wind to come from?" *Wild Rose.*

NEW OR NOTEWORTHY PLANTS.

EPIDENDRUM WENDLANDIANUM, *Kränzlin, n. sp.**

HERE we have a new Epidendrum, and a very nice one, too. The flowers rise one to three on each flower-stalk, and are of a very bright colour. The sepals and petals are light green, the labellum is snowy-white, with dark purplish lines on the side-lobes; the gynostemium or column is likewise coloured dark purple. The diameter of the flower is nearly 2 inches; the labellum has two small side lobes, and a much larger cordate mid-lobe, with three elevated veins in the middle, and a hairy cushion at the base. It is very difficult to explain the affinities of this plant; it is quite unlike all the numerous species figured in botanical works up to the present time. To begin with, the internodes of the rhizome and to end with peculiarities of the column, we never found such a combination of characters. *Epidendrum tripunctatum*, Lind., is perhaps the nearest to it. It is to be hoped that this very pretty novelty will find its way into our collections; the culture seems not to be difficult, the plant thriving well in the cool-house. I received fresh materials twice from Mr. H. Wendland, of Herrenhausen, near Hanover, who received it, I believe, from Mr. F. Sander. The plant is a native of Mexico, and was collected by Abel; it flowers at midsummer—a season not very rich in Orchids; the flowers remain for a long time in good perfection, and strong specimens have many of them. *F. Kränzlin.*

GOOSEBERRY WHINHAM'S INDUSTRY.

ROBERT WHINHAM, the raiser of this variety, was born early in this century, and up to within a few years of his death in 1858, he occupied as tenant the Allery Banks Gardens, belonging to the Earl of Carlisle, at Morpeth. There it was that he first began cultivating and propagating the berry. All

the time, the labour, and the thought he expended in perfecting his venture profited him but little in the shape of pecuniary reward. He died a poor man. His grave in Morpeth Churchyard is known to but few, and no memorial of him exists other than which he established himself by giving his own name to the fruit he originated.

Situated on the rising ground to the south-east of Morpeth, and in close proximity to the railway, we found the scene of his labours. The summer evening was closing in as, escorted by Mr. George W. Purdy, the present tenant, we wandered through the garden, which is almost entirely given over to the cultivation of Gooseberries. Mr. Purdy's father immediately succeeded the Whinham family in the tenancy, and when he took over the garden he found there bushes of the identical berry which must have been some of the very first cultivated by Whinham. These bushes had then reached maturity, and some of them yet remain in very vigorous growth. One of these, which cannot possibly be less than 47 years old, has cropped heavily ever since 1856. Last year it yielded three and a half stones of berries; this year it is still more heavily laden, and the estimated weight of the crop is four stones.

It was an interesting fact to learn that when Whinham left them, nearly all these old bushes were layered, and when roots were formed, the layer was separated from the bush with the spade and planted as a separate bush. Such was the method of propagation followed at that time. Now-a-days, however, increase is by means of cuttings, which is a much more rapid system than the old one. At the time to which we referred, however, the young bushes were not considered of any very great value, as Rifleman and Ashton Red were varieties that held what market there then was, and it must be remembered that was prior to the time when the enterprise of the fruit-preserving firms created a demand for the Gooseberry.

Though the two are naturally in some degree inseparably connected, the chief pecuniary interest, so far as the North of England is concerned, does not, however, centre in the production of the berry, but in the sale of the young bushes. When they reach the age of two or three years, the young plants command a high market price, and are in demand in many quarters of the globe. The United States and Canada, where they were introduced some ten years ago by Mr. R. Smith, of Worcester, are still our largest customers. Provided the plant is allowed a full three years' growth in this country, it does well in America, and bears well up to twelve years; after that time it begins to deteriorate, and has to be renewed. A few years ago the demand so far exceeded the supply that the Americans would take anything they could obtain in the shape of young bushes. The natural consequence was that much inferior stuff found its way into Brother Jonathan's gardens. A certain percentage of the bushes did very badly, and the American gardeners, becoming alarmed, sought some means of protection from what they supposed was the advantage taken of them by their English confrères. They thereupon agreed that a certain standard of excellence should be set up and adhered to in the importation of the bushes. The rules regulating the trade now, therefore, are that three-year-old bushes must have from five to seven good branches; two-year-old bushes three or four branches, and all bushes to be thicker than an ordinary lead pencil. One-year-old bushes they will only accept in a year of scarcity.

The bushes sent from Northumberland, and especially those sent from Morpeth and Hexham, are preferred before any others. France, Germany, and Holland are all cultivating "Whinham." Competition even in our own market of Newcastle is becoming somewhat keen in the berry line. The Dutch, from the bushes they have obtained, are able to compete with growers in Northumberland, and they are now sending in large quantities to our markets. In size, juiciness, and in flavour, they are, however, not to be compared with those of English growth, and the only thing that can be said in their favour is that they are earliest on the market. Boilers buy them

* *Epidendrum Wendlandianum*, Kränzlin, n. sp. § Encycelia —Sepalis petalisque linearilanceolatis acuminatis patulis; labelli lobis lateralibus oblongis obtusis margine subrepandis columnam amplectentibus, lobo intermedio multo majore late cordato acuto sepalis petalisque brevioribus, disco medio elevato lineisque 3 elevatis a basi apicem usque decurrentibus, disco in lobos laterales pinnatis-pilosos; gynostemio libero lato apice in dentes 3 exeunte, quorum laterales oblongi obtusi, dorsalis autem late ligulatus apice rotundatus. —Flores 5 cm. diametro, sepala petalaeque viridi-alla, labellum 2 cm. longum (lobus intermedius 1.3 cm. latus); album, lobi laterales violaceo-atriati. Scapus anceps bi-triflorus. Folia linearia scapo vix breviora late viridia ad 25 cm. longa, 1.5 cm. lata. Caulis primarius repens crassiusculus; intermedia inter bulbum et bulbum 2.5 cm. —3 cm. longa. Bulbi ovoides subcompressi 5 cm. longi, 1.5 cm. —1 cm. diametro. *F. Kränzlin.*

at a cheap rate, so that notwithstanding the fact that sugar is dear this year, the price of English jam, made with German Gooseberries propagated in Northumberland, remains "statu quo." *Newcastle Chronicle*, June 29, 1893.

GROWTH AND CULTURE OF AZALEA INDICA.

(Concluded from p. 34.)

SUMMARY OF ANALYSES BY M. G. TRUFFAUT.

Constituents accumulated by one Plant of *Azalea indica* during Three Years of Growth.

Parts of Plant.	First Year.	Second Year.	Third Year.	Total 3 Years.
<i>Dry Substance.</i>				
By leaves ...	0.941	8.235	15.475	24.651
By stems ...	0.235	6.415	8.470	15.120
By roots ...	0.459	6.325	11.775	18.550
Total ...	1.6.6	20.975	35.720	58.321
<i>Nitrogen.</i>				
By leaves ...	0.017	0.153	0.287	0.457
By stems ...	0.002	0.071	0.094	0.167
By roots ...	0.004	0.060	0.113	0.177
Total ...	0.023	0.284	0.494	0.801
<i>Lime.</i>				
By leaves ...	0.012	0.073	0.201	0.286
By stems ...	0.004	0.106	0.139	0.249
By roots ...	0.002	0.023	0.045	0.070
Total ...	0.018	0.202	0.385	0.605
<i>Potash.</i>				
By leaves ...	0.005	0.028	0.077	0.110
By stems ...	0.002	0.056	0.074	0.132
By roots ...	0.030	0.041	0.077	0.148
Total ...	0.037	0.125	0.228	0.390
<i>Silica.</i>				
By leaves ...	0.016	0.098	0.271	0.385
By stems ...	0.003	0.073	0.010	0.086
By roots ...	0.019	0.261	0.487	0.767
Total ...	0.038	0.432	0.768	1.238
<i>Iron Oxide.</i>				
By leaves ...	0.001	0.004	0.009	0.014
By stems ...	Trace	0.005	0.006	0.011
By roots ...	Trace	0.006	0.011	0.017
Total ...	0.001	0.015	0.026	0.042

These results show that the largest amount of dry substance of the *Azalea* is accumulated by the leaves, and next by the roots.

The foliage yields more than one-half of the whole nitrogen collected, and nearly three times as much as either the stems or roots.

Stems and leaves are about equal in their absorption of lime, and give about four times as much as the roots; while the element potash is fairly distributed over the three plant organs enumerated.

Silica, as might be expected, is the principal constituent of the roots, the leaves, however, giving four times as much as the stems.

Iron is not a very conspicuous ingredient in the composition of the *Azalea*, but, like potash, is about equally distributed over the whole plant.

In conclusion, it may be asked, what is the significance of these facts? In the first place, it is that the character of development of the *Azalea* depends very much upon the proportion of nitrogen available within the soil, for where there is restricted growth of plant, there will not be vegetative activity, or great accumulation of texture-forming substances, from which the plant must eventually rely for flower formation and maturation. But in order that the

nitrogen may work successfully, it becomes absolutely necessary that there shall also be plenty of available minerals in the soil to dilute the nitrogen. For there can be no doubt that strength of plant depends on favourable development of the woody substance, and the more this prevails, the more will the accumulated nitrogen be diluted—in other words, show a lower proportion to the other constituents. *J. J. Willis, Harpenden.*

CONCERNING PARSLEY.

ONE can only imagine what our garden Parsley was like, when, as is generally understood, it was introduced to this country about the middle of the sixteenth century, though some assert the plant is indigenous to Britain. Philip Miller, in his *Gardeners' Dictionary* (1731) speaks of it under the name of Apium as "an herb so well known that it is not worth while to say much about it; every old woman in the country that hath a garden knows how to cultivate a Parsley-bed." He mentions the curled Parsley, and "the great garden Parsley, which is at present little known to us in England, but in Holland it is very common in all their markets; they bring these roots in bunches as we do young Carrots to market in summer, and the roots are much of the same size." This is no doubt what we cultivate in this country in the present day under the name of the Hamburg or Turnip-rooted Parsley. Miller adds: "The curled Parsley is sown in some curious gardens for garnishing dishes, the leaves, being curiously furbelowed, answer this purpose very well." A catalogue published in 1817 gives the same cultivated varieties of the Parsley as Miller does—the plain or common, the curled, and the Hamburg or Turnip-rooted. Of late years the garden Parsley has been considerably improved; specially selected forms have had distinctive names given to them, such as Myatt's Garnishing, Moss-curled, Fern-leaved—the two last-named being very ornamental and strikingly handsome, Lincoln Green, Beauty of the Parterre, &c. Lincoln Green is a selected form of the Curled, not so densely curled as some other selections, but of a very bright green colour—hence its name. Beauty of the Parterre is like Lincoln, green, bright in colour, but rather coarser. Myatt's Garnishing is simply a good strong-growing selection from the Curled, and therefore well adapted for field culture, many acres of land in the home counties, and especially in Bedfordshire, being devoted to Parsley. The Moss-curled is greatly esteemed for its dwarf growth and its handsome curled character, and when well selected, it is perfect as a garnishing Parsley. The Fern-leaved has a fine Fern-like habit of growth, hence its name, and both show what can be accomplished by means of persistent selection.

The use to which Parsley is put, whether raw or fried, is for flavouring, garnishing, &c., the leaves being highly aromatic. Plain Parsley is employed in some parts of the country for agricultural purposes, and its leaves are eaten by most of our herbivorous domestic animals, particularly sheep; and from its being believed to act as a preventive of liver-rot in that animal, it has been recommended for sowing in their pastures, but its use in this manner is declining rather than extending.

There are two types of the Hamburg or Turnip-rooted Parsley. One known as the Early, the root resembling that of a short thickish Parsnip; and the Late, which has a root like a long thin Parsnip—and it is the latter which is in somewhat limited use in this country. But as one is but a selection from the other, they are apt to run into each other. The root is used by some for eating with fish. The top is like that of the common Parsley.

The Parsley is such a commonly-grown subject, that it seems scarcely necessary to say much about its culture. In the Bedfordshire market gardens it is a common practice at the time of sowing the pickling Onions, to sow a little Parsley seed with them, and also in thin beds of marketing Onions. When the crop is gathered, there is a valuable plantation of

Parsley for the winter and early spring months—large, handsome specimens, having ample space in which to develop. It is curious to note how well a self-sown plant will do in a garden, to what a size it grows, and almost invariably it is handsomely curled. I have known gardeners to depend upon chance plants like this for a supply of seed to sow. Such a self-sown plant suggests two points in successful culture: One is to give the plants plenty of room; the other to allow them to remain where they are sown, refraining from transplanting them as far as possible.

A well-tilled, but well-manured, rather heavy loamy soil suits the Parsley; in such a soil its fleshy roots penetrate deeply and strongly. Some sow Parsley in February, in May, and again in July, in order to have a succession; others are content with a sowing in April, and transplanting at different times. In our London market gardens, it is the usual practice to sow successively from March to August, and invariably where the plants are to remain; for it is said the effect of transplantation is to cause inferior foliage, as well as to induce the plants to go to seed earlier. The Parsley being a biennial, it is usual for it to flower the following season, and then it is practically useless for picking purposes.

In some soils it has been found difficult to grow Parsley with anything like success: either the soil is unsuitable, or the ground has become Parsley-sick, which probably means the plants are attacked by a kind of canker; a brown rust settles upon the main stem, decay sets in at the roots, and the plants die. This seems to suggest that a change of soil is necessary—at any rate, it is well to deeply till and make it fairly rich, to secure a vigorous growth, and a fine curled character.

One curious fact connected with Parsley is, that a certain amount of superstition gathered about the plant, and it was considered unlucky to transplant it; and in the Midland Counties especially, few persons could be got to perform such an act. This superstition may still exist in places, but there is no doubt Parsley is frequently transplanted, and as far as we believe, without any of the penalties attaching to the act which at one time was asserted would follow. Enormous quantities of seed of Parsley pass through our wholesale seed houses during the year, to an extent that appears incredible; but it serves as an illustration of the fact that scarcely a garden in this country, large or small, is without its bed or plantation of this thoroughly useful English plant. *R. D.*

FLORISTS' FLOWERS.

THE AURICULA.

THE excessive drought is a new experience to the present generation of gardeners, and it would be interesting if we could obtain some record of its effects upon the various subjects under our care. It has generally been supposed that a hot dry season was the very worst for Auriculas. This was impressed upon me nearly thirty years ago by reading the papers upon the Auricula by the Rev. H. H. D'Ombrian, who had, even at that time, much experience of its culture in the south of England, when I knew nothing of its management outside the land of "brown heath and shaggy wood." My own experience this year has led me to the conclusion that the show and alpine Auriculas both can be steered safely through a very hot and excessively dry season if they are well cared for; the worst effects of such a season is the rapid production of aphides—it is simply marvellous. In spring and autumn the increase of these insects is slowly effected by eggs hatched as the weather increases in warmth; but, at present, they do not wait for the slow process of egg-laying, the insects become viviparous, and eject perfect insects at a rapid rate—and these, in their turn, are not slow to carry on the same rapid system of propagation. The Auricula is sure to be attacked by this insect, and the hot weather favours its rapid development; they must

be brushed off the leaves, and this is the way that most amateurs deal with them—but where there is a large number of plants, it may be necessary to fumigate them with tobacco smoke. Dipping the plants in soft-soapy water is effectual. When they are clear from insect pests the growth is healthy, and excessive heat is counteracted by shading from hot sunshine. I have usually repotted a number of plants after the seed has been gathered in July, but it would not be wise to do so this year, as the excessive heat would certainly be disastrous to newly-repotted plants. The work will be left until cooler weather in August, and, at that time, offsets root well in a shady place in close hand-lights. The seed ripened about the third week in June, and was sown at once; we place the seed pots or pans in hand-lights, on the shady side of a wall, and it vegetates to a certain extent in about three weeks; but much of it lies dormant until the spring, when the parent plants wake up into active growth. The seedlings of last year are not making such good growth as I would like, but they will doubtless progress more rapidly when the nights are longer. Auriculas, whether they are seedlings or established plants, make more rapid growth in the spring and autumn than they do at any other season. The small plants should be potted on as they require it; delay in this is injurious to them. Alpine Auriculas, and all the Primula family out-of-doors, have suffered by the intense heat; but where they have been freely watered, the losses are inconsiderable—indeed, in a large bed of alpine Auriculas, two years established, not a plant has failed.

THE HOLLYHOCK.

This stately plant does not seem to suffer at all from the heat, and, what is very remarkable, I have seen no trace of the parasitic fungus which destroys the leaves (*Puccinia malvacearum*). This pest seems rather to delight in damp weather, lying dormant in a drought. I have always recommended a rich deep soil for these plants; and this season, with plenty of water, the growth is excellent, the leaves clean and free from red-spider, which is generally troublesome. The side growths should be utilised for cuttings, or they may be propagated from eyes, like Vines; bottom-heat is not necessary—in fact, a brisk bottom-heat is injurious, causing some of the eyes and cuttings to damp off. I find they do in a hot-bed from which the heat has nearly but not quite gone; the propagating pots ought to be plunged to the rims in cocoa-fibre refuse, or something similar. They are usually full of moisture, and an over-supply of water causes many of them to damp off. If the frame is kept close, and shaded, not a great deal of water is needed; it is better not to give any for two days after putting them in, but the soil ought to be sufficiently moist to start with. Good soil to strike the cuttings and eyes in, is composed of one part loam, one of leaf-mould, and one of sand. The flowers are now developing freely, and are of full size. See that the centre stems are supported by stoutish sticks, and do not neglect to fasten the upper part of the stems to them, for if a high wind gets up suddenly, the flowers are likely to be damaged by the wind swaying them backwards and forwards against the sticks. The stems are very short this year, the flowers in some instances having begun to open at less than a foot from the surface of the ground. All such plants derive great benefit from the surface of the ground being mulched over with decayed manure, through which the water should soak. We have used this year a great deal of the peat-litter manure to mulch with; it can be used fresh from the stables, and it seems to cause a most vigorous growth. For Carnations and Pinks it is excellent.

PANSIES AND VIOLAS.

No plants derive greater benefit from this mulch of short manure than these, but a mixture of cow and stable manure is best; peat should be omitted. The Pansies and Violas gave great satisfaction until the end of June, when the quality of the flowers fell off. This will happen in ordinary seasons, and they do not produce full-sized well-marked flowers until

they have a fresh start. This is accomplished by picking all the flowers from the plants, removing the growths if they are too crowded. Mulch the surface with manure finely broken up, and peg down the growths firmly into it. Give them a thorough soaking with water if the ground is dry, and the plants will grow freely again, producing flowers of quality nearly equal to those upon the plants in their early stages.

It is now time to get the cuttings in, to produce strong blooming plants in the spring. There are generally at this season numerous slender growths at the centre of the plants; these, if slipped out with the fingers, make excellent cuttings, in fact, most of them will have rootlets attached to them.

An amateur friend was talking to me only yesterday about propagating the Pansies and Violas, and was much surprised to find that it was unnecessary to plant them in frames and hand-lights. We have greater success when they are planted in fine soil in the open garden. Those who possess gardens walled around, and with aspects to all four points of the compass, have a considerable advantage over those who have none. For Pansies, Pinks, and such things, we merely provide some fine sandy soil on the border behind the north wall, and dibble them in rows 3 or 4 inches apart, and 3 inches asunder in the rows. See that they are kept moist, and few will fail to root freely. It is well to dip the cuttings in some soft-soapy water before planting them, as a precaution against thrips, and a destructive aphid of a reddish tinge. Any other of the numerous solutions may be used. *J. Douglas.*

TREES AND SHRUBS.

GENISTA ÆTNEISIS, *De Candolle.*

THIS is one of the larger growing species of Genista, attaining a height of from 8 to 15 feet. Like others of the same family, it is one which thrives on poor sandy soil much better than many shrubs would do—a fact which considerably enhances its value. At Kew there are several large bushes in the wooded part of the garden, and when in full flower they look particularly bright amidst the surrounding greenery. It is in such positions, indeed, that it is seen at its best, being of sparse habit, and having its slender terete branches practically devoid of leaves. In this respect it has somewhat the character of the Spanish Broom (*Spartium junceum*)—*Spartium* was, in fact, the genus under which it was at one time placed. The flowers are of a clear bright yellow, and when the plant is growing in an open sunny position, they are produced in great profusion. According to London, it is found wild on the slopes of Mount Etna (as is implied by the specific name), occurring at elevations of from 3000 feet to 6000 feet, frequently in company with *Acer monspessulanum*. It is a native of other parts of Sicily, as well as of the neighbouring island of Sardinia. It was introduced to Britain in 1816. It is readily propagated by seed, which it ripens in fair quantity every year.

ESCALLONIA PHILLIPIANA, *Mast.*

Not only is this species one of the most distinct of Escallonias, but it is the hardiest. In the neighbourhood of London (where it has been grown in the open without any protection), it has not suffered in the slightest during the trying winters of the past few years. It is one of many delightful hardy fruits for which we are indebted to the enterprise of Messrs. Veitch—their collector, Pearce, having introduced it from Valdivia about twenty years ago. The original description, with an illustration of it, are given in the *Gardeners' Chronicle* for July 27, 1878. Our largest plant is now about 4 feet high, and is a compact, many-branched, and elegant shrub, but it will, in all probability, eventually attain to much larger dimensions. Every shoot is at present crowded with small white flowers, which are one-third of an inch across, and both in shape and colour remind one strongly of the well-known greenhouse plant, *Leptospermum scoparium*. The

leaves are proportionately as small as the flowers, and are quite smooth, almost sessile, and of a rich green. It may be propagated with the greatest ease by means of cuttings taken in late summer, striking them in sandy, light soil, in a close frame. As a hardy shrub of great beauty and interest, as well as a "good doer," it is to be strongly recommended. *W. J. B.*

LILACS.

THE most widely diffused species of this beautiful shrub are the common Lilac (*S. vulgaris*), Persian Lilac (*S. persica*), and *S. chinensis*, the Varin Lilac or Lilas de Rouen.

The common Lilac is of itself more widely grown and cultivated than are all the others put together. Its importance in horticulture is such that we believed it worthy of a special article, describing its various uses and the methods of culture employed. Nevertheless, the other species are treated in the same manner as regards their multiplication and their ornamental uses in gardens. Although common everywhere now-a-days, this beautiful shrub is not indigenous to our soil, the most reliable authorities now assign it to the region of the Danube, and M. Ed. André mentions having seen it growing wild in the mountains dividing Servia from Bulgaria. Its introduction into the gardens of Western Europe dates from the middle of the sixteenth century. M. Baltet attributes it to Buebeck, ambassador from the Netherlands to Constantinople in 1562; but M. Franchet says that "the first definite mention of the plant dates back only to 1565, and is owed to Matthioli." At any rate, it increased rapidly in gardens, and has since produced many varieties and florists' forms. The common Lilac plays three important parts in gardening:—

1. It decorates, owing to its bushy habit and fine foliage, thick shrubberies in the most charming way, so that there is no garden in which some plants of it are not to be found.

2. The abundant flowers, opening in fine terminal clusters in early spring, exhale a delicate perfume.

3. It is now-a-days extensively grown for winter forcing; the trade in Lilac is a most important one.

We will now consider the methods of multiplication, culture, and forcing employed:—

Multiplication.—Lilac being a trailing shrub, possessed of an abundant root-system, its multiplication is most easily effected by simply separating the suckers, which grow in abundance round the stock. At the same time this method is only applicable with the type and the most common varieties. Also, it may be propagated by means of woody cuttings, which root easily in the open ground, almost without any attention. Multiplication for industrial purposes of the finest horticultural varieties is effected by budding in July. Cleft or even crown-grafting may also be employed for large stocks as standards or dwarfs, but this course is only exceptionally pursued. Moreover, stocks destined for grafting are raised from seed, as they produce fewer suckers than those raised from cuttings. This process is effected as it is with most other hardy shrubs, the seeds are sown in spring, in beds and broadcast. The plants are placed in a nursery to graft when they are two or three years old; then they are put out two or even more years later, if they are for sale, as Lilac is one of the shrubs which bears transplantation best.

Culture.—Lilac is adapted for every soil; it bears drought as well as damp, when neither is excessive—in fact, as long as not too deeply shaded or too much exposed to inclemency, it is not affected, and the most intense frosts leave it scatheless. Yet the pains taken with it, the work, manuring, pruning, &c., are not thrown away, as it then becomes very vigorous and produces large and numerous blossoms. As the flower-buds are always found at the summit of last year's shoots, it is evident that pruning it in spring, before the leafing is over, checks all the flowers, therefore it is just after blooming that it should be submitted to this operation when necessary, but we haste to say it is only when a particular form is required, usually that

of a small tree, or when it attains to too ample proportions that such a course is necessary. Lilacs are easy to cultivate in pots or tubs of suitable size, thus do nurserymen raise them for market, and amateurs frequently grow large specimens for terraces or balconies in this way.

Forcing.—From a commercial point of view the winter forcing of Lilac is now a very important

as it is known that for such use the red Lilac (*S. purpurea*), known as Marly, is principally employed, Charles X., and also the Persian Lilac, being used frequently. The white forced Lilac lasts for the greater part of the year; it may, doubtless, also be produced all the year round, if the specialists found it a remunerative experiment.

Forcing is usually practised in darkness and little

Stoves.—The houses devoted to this purpose are low, without stages, and furnished with a good boiler that can maintain at will a temperature of at least 25° (76° Fahr.). They are carefully covered with matting, to produce total darkness, and at the same time to prevent the escape of heat.

Preparation and Instalment of Plants.—The plants are taken up, with a good-sized ball, some time before forcing them, so that they suffer slightly from drought. Then, when they are brought into the house, all suckers and every branch deprived of flower-buds are cut away, as well as those too feeble to produce good clusters; in a word, their toilette is rigorously performed. They are then planted in the house, close together, their balls being covered with an inch or two of earth, and they are then freely watered.

The Work of Forcing.—The temperature of the house should be gradually brought up to about 25° (77° F.), and so long as the flowers do not show, the branches must be syringed several times a day, and the earth copiously watered, to keep the roots constantly moist. Those shoots which develop too luxuriantly must be suppressed, as they tend to spoil the bunches. When the flowers are a little advanced, the syringing should cease, as this tends to spoil, or at least to soil them. According to the intensity of forcing, the flowering will take place in about the third week; if a temperature of only from 18° to 20° (64°–68° F.) be maintained, forcing will take more than twice the time, but the flowers are of better substance, and the bunches of better form. When the flowers are ready to open, some of the matting is removed, to let in a little light on the flowers, and even, if the weather permits, a little air may be admitted. These two elements give a certain substance to the bloom, and also render it more lasting. It is advisable to cut the flowers in the afternoon, then to let them pass the night in fresh air, with the stem in water.

Natural Coloration.—To obtain red Lilac, the forcing is conducted on the same principle; but instead of complete darkness, a soft light is, on the contrary, allowed to reach the flowers. They are shaded only from the hottest sun, and allowed air by raising some of the lights, save when the weather is too cold, and, in cases of need, a length of matting is left over the aperture, so as to temper the air; the temperature should in this case be left at about 15° (66° F.). The duration of the forcing is then about twice as long as for the production of white Lilac, but the produce fetches a better price.

Artificial Coloration.—The rage is now more than ever for colours, and the idea of tinting flowers, which is not altogether novel, was put into practice last year for the raising of green Carnations, and this year actually for the culture of multicoloured forced Lilac. Thus, one sees in the windows of the principal florists, Lilacs tinted azure-blue, golden, or chrome-yellow, gooseberry-red, and salmon-pink, these colours being of very pure and uniform tone. It is by immersing the stems in colouring liquid, that is to say, by the ascension of the liquid into the cells, that the dyeing is effected. The aniline dyes used are, according to M. Fleurand, methylene-blue, methylaniline-violet, orange No. II, eosine, &c. We may further remark that this method by endosmosis is comparatively new, and quite different from those formerly employed, such as steeping the bloom in corrosive liquids, with a basis of potash or soda, or their exposure to ammoniacal or sulphurous vapours. The absorption of the colouring matter by the plant itself affords, especially for Lilacs, very remarkable results, and in spite of the aversion felt by true plant-lovers for artificially-coloured flowers, it would be rash to foretell the probable results of the scheme in the future.

Old Plants.—The flower-gathering completed, the house is at once cleared for starting a second series, and with the principal specialists the operation is repeated eight or ten times successively during the same forcing season. The plants, when taken from the house, can, after growing for two years in the open air, serve again for forcing. For this purpose all late buds are checked, or they are cut down



FIG. 13.—VIEW IN FERN HOUSE IN MR. MAY'S NURSERY. (SEE ROYAL HORTICULTURAL SOCIETY'S REPORT, P. 70.)

trade. The industry originated in France, and M. Baltet attributes the first practice of it to Matthieu, of Belleville in Paris, quite a hundred years ago. At the same time, this method was not largely employed until long afterwards; during the last thirty years in fact. It has so rapidly increased in importance, that each year more than a million and a half plants are forced in the neighbourhood of Paris. The custom is, in fact, followed to a small extent everywhere, but nowhere so largely as here. The process is altogether a forcing and bleaching,

air, but it seems now certain that white Lilac can be grown in full light also, and from the same red variety; by greatly urging on the forcing, the colouring matter has not time to develop. Also for the last ten years, red Lilac, more or less forced, has been obtained by giving gentle heat and a little air; its production has greatly increased during the last ten years. In spite of its great elegance, fault may perhaps be found with its poverty of foliage, but the skill of the florist atones for this deficiency, as they replace it with that of other plants.

quite to the old wood; then put in the nursery. These plants also serve to decorate plantations, form hedges, or even furnish slips or cuttings.

Diseases.—Lilacs suffer little from attacks made upon them by fungus or insects, although parasites are relatively numerous on them, their ravages are often unnoticed. These are the chief pests:—

Fungus.—It is chiefly the leaves which suffer from this. Sometimes it is a species of *Oidium* which covers them with close and whitish filaments; sometimes *Fumago vagans*, common also on many other shrubs, forming on them a sort of blackish deposit; above all, green-fly attack the tree, as it seems that the honeyed secretions of this insect serve as the support of the fungus. Syringing with soapy-water is an easy remedy. The brown spots made by *Ovularia Syringæ* should also be noted. Many other Cryptogams, almost the entire order of *Pyrenomyces* have also been found on Lilacs, but their ravages being insignificant need not be noticed.

Insects.—The principal insects living on Lilac are the nocturnal *Lepidoptera*, and especially the Privet Sphinx, one or two *Noctuelles* and *Geometers*, and one Privet known as *Gracillaria syringella*. The larvæ of this latter insect first attack the leaves, then roll themselves in them for protection, and when fully grown drop to the ground to undergo their metamorphosis. The wings of the perfect insect measure scarcely a third of an inch in span. The only remedy, when necessary, is to collect the leaves affected, and burn them.

Varieties.—Florists' varieties of Lilac are excessively numerous, but the scale of colour is not wide, varying only from pure white to lilac-purple, but the dimensions of the bunches and the size of the flowers serve to distinguish them. Some amongst them are much sought for trade culture as choice plants. Double Lilacs (of which there is already a selection, though only recently obtained) have not the elegance of the single ones; still, some are now very pretty and interesting. It is noted that when forced they become lighter and more decorative. In conclusion we name a few varieties of the two kinds:—

Single.—*Alba grandiflora*, Charles X., Dr. Lindley, Madame S. Morel, Marie Legray, De Marly, La Veige, Souvenir de Louis Spach, &c.

Double.—Linné, Lemoinei, Mathieu de Dombasle, Michel Buchner, Madame Lemoine, ranunculiflora, rubra plena, &c. *S. Mottet, Paris.*

NURSERY NOTES.

MR. S. MORTIMER'S NURSERY, ROWLEDGE, FARNHAM, SURREY.

VISITORS to the Metropolitan and other horticultural exhibitions have, doubtless, observed the fine displays of Cucumbers, Melons, and Tomatos, which are Mr. Mortimer's great specialties; not that he confines his attention to these alone, for he cultivates—and cultivates well—a general nursery stock. The intention of the writer is, however, to say something about the specialties.

The spot chosen by Mr. Mortimer for his nursery is one very highly favoured by Nature in some respects. For instance, it lies high on the top of a hill; and although in the surrounding valleys people are suffering from a want of water, here there is a plentiful supply. A fine healthy atmosphere prevails; the early and late frosts are often escaped, whilst in the valleys they are very destructive. At the time these notes were taken, the earliest houses devoted to Cucumbers and Melons were over, four houses having been cleared of ripe Cucumbers; in two of these were grown the new varieties Princess May and Prince George, which, it may be remembered, Mr. Mortimer exhibited in his fine group at the recent Temple show of the Royal Horticultural Society. They will be exhibited again later in the season. It is quite worth noting that the Cucumbers and Melons here are grown in very shallow beds, giving them not more than 6 or 8 inches of soil; this, with the help of fertilisers give much better results than the old-

fashioned deep beds, which, some thirty years ago, were sometimes 6 feet deep. The new Cucumber, certificated last year by the Royal Horticultural Society under the name of Success, or Sutton's Peerless, is proving a very fine variety, exceedingly dark in colour, with numerous spines—a very finely-flavoured variety. The present has been a very good season for Melon cultivators, and a fine heavy lot has been produced here; those named Al and Empress are found, without exception, to be the best-flavoured scarlet-fleshed kinds, and where a good show of Melons is wanted, Conqueror and Golden Perfection are the best. A span-house was observed of that truly famous variety, Hero of Lockinge, just netting, being grown for seed purposes. Mr. Mortimer—and he is no mean judge in such matters—thinks it is the prettiest house he has ever had—every fruit as true as though they had been cast in one mould.

The two very best Tomatos (and a good many varieties have been grown here) are found in Earliest of All for very early work, as it is such a wonderfully free setter—hundreds of trusses have been produced here this year with sixteen and eighteen ripe fruits on each of them; and Sutton's Perfection, which presents the finest type of smooth Tomato in cultivation.

Passing on to the floral department, a very fine house was noted of *Celosia plumosa*. Mr. Mortimer took this class in hand some eight years ago on settling down here, and has much improved it. At that time he had in them a percentage of plants which bore small combs on the tops of the plumes; here is a strain which gives perfect plumes, twisted and curled, many of them, like ostrich feathers, and in splendid variety of colours. A 60-foot house is devoted to seedling *Coleus*, for seeding purposes. In these every variety of colour almost may be seen.

Dahlias are largely in request, an acre and a half being devoted to them. A fine bed of seedling show and fancy varieties selected from a large quantity grown last year will, it is hoped, give some good new varieties for the autumn exhibitions. Fuchsias are grown in large numbers for the trade, also many thousands of bedding-plants, for which there is a good demand. A large stock of trees, shrubs, &c., is also being worked up, adding fresh and interesting features to a nursery that will, in time, compare very favourably with similar establishments of much older growth. *J. B.*

THE VICTORIA REGIA AT CHATSWORTH.

In our last issue the name of Chatsworth was inadvertently omitted from the list of places given where the cultivation of the *Victoria Regia* is carried out, as Mr. Owen Thomas, formerly the Duke of Devonshire's gardener at that fine place, and now of Frogmore, has kindly pointed out. There was, however, we believe, a short period during which its cultivation there was discontinued—a fact that our correspondent, probably, had in his mind when he penned the note.

Our illustration (fig. 14, p. 63) shows the *Victoria*-house at Chatsworth in its palmy days.

PIERRE POIVRE (1719—1786).

(Concluded from p. 35.)

THE Island of Bourbon and the Isle of France were no longer under the *Compagnie des Indes*, which had ceased to exist, and since the departure of Labourdonnais their affairs had fallen into a state of disorder and neglect. Poivre had been granted extensive powers, but, unfortunately, his intentions were greatly marred by the military executive governor. For six years he administered the civil government of the two islands, and by unremitting perseverance brought the colony out of debt, and inaugurated an era of prosperity.

In 1770, when there was a scare of imminent war with England in the east, the French Government despatched ten thousand men, soldiers, sailors, and

marines, to the Isle of France. The vessels which conveyed them landed these men destitute of all supplies. "I well knew that they would want everything," wrote M. de Choiseul, the minister, to Poivre, "but you were there, and I counted on you." Nor was the minister deceived, for Poivre, in spite of two hurricanes, which successively ravaged the island in February and March, 1771, when the troops reached their destination, managed cleverly to provide them and the ships with supplies from the Cape, paid for, moreover, by bills which he persuaded the Dutch to accept, but which were not eventually paid until fifteen years had elapsed.

Among other good deeds which Poivre accomplished, we must not forget his benevolence towards the slaves and black population. The white colonists, or rather, the most unscrupulous among them, did not hesitate to use their black slaves as beasts of burden, both in Bourbon and the Isle of France. Poivre introduced a law by which it was rendered a contravention of the law to load any black with a burden of more than sixty French livres in weight, and any negress with more than fifty pounds; hitherto they had been accustomed to put one hundred and twenty pounds weight on the heads or shoulders of the black men and women alike.

Mr. Poivre was not a botanist in the scientific sense of the word, but he was nevertheless a great introducer of economic plants into the islands under his charge. For instance, it was under his auspices that the following plants were cultivated in Bourbon and the Isle of France with success, viz., the Bread-fruit tree, *Artocarpus incisa*, and the Jack, *A. integrifolia*. (M. Dupont de Nemours also mentions a large-fruited green Mulberry from Madagascar named *Ampalis*, and a tree from which an essential oil is obtained, like otto of Roses.) The Travellers' tree, *Ravenala* sp.; from China he brought the Tea-plant; from the West Indies the Logwood; from Ceylon the Cinnamon; and from the East Indies the Nourouk, the various Coco Palms, Dates and Mangoes, the All-spice; from Europe the Peach and Apple; the Avocado Pear from the Antilles; the Mabelo, *Diospyros discolor*, from the Philippines; the Sago Palm from the Moluccas; the Savonier, or Soap-nut, *Sapindus detergens*, from Hindustan; various timber trees, &c. But he was most celebrated for his successful introduction of the Clove and Nutmeg plants into the French colonies, for hitherto the Dutch had possessed the monopoly of these important spices. Under his administration M. Provost, an experienced supercargo of the French East Indian Company, who spoke the Malay language fluently, was furnished with letters from the French Government to various East Indian potentates.

In May, 1769, M. Provost started in the *Vigilant*, commanded by Lieutenant Tremigon, in company with the *Étoile du Matin*, under Lieutenant D'Etcheverri. This small expedition proceeded in the first instance to Manilla, and thence to Mindanao and Yolo, whose prince regarded M. Poivre with veneration. The ships then sailed to Miao, where, however, the Dutch had destroyed all the spice trees. Provisions now failing, the vessels separated, M. de Tremigon going to Timor, and M. Provost, with M. D'Etcheverri searching throughout various islands of the Moluccas, among others, Ceram; these pioneers obtained the plants they sought from the kings of Gebi and of Palani, as well as a large number of mature fruits and nuts fit for planting. The vessels escaped the Dutch, who were on the look-out for them, and having rejoined, finally made their way safely back to the Mascarene Islands with their precious freight by June 24, 1770. Again, 1771, Poivre sent M. Provost on board the *Isle de France*, commanded by sub-Lieutenant de Coëtivi, accompanied by the *Nécessaire*, under M. Cordé. These officers went to Gebi, and returned thence successfully with a good cargo of plants and seeds. M. Poivre had purchased an estate named Montplaisir, some little way north of Port Louis, where he formed a garden and nursery for these exotics, which he placed under the direction of M. de Céré, a worthy continuator of his work. This garden is now

known as the celebrated garden of Pamplemousses. An English traveller, Mr. Mackintosh, writing from Calcutta in 1779, thus describes these gardens:—"The spiceries of Ceylon, Amboyna, and Banda promise to flourish in this island (the Isle of France). In the parish of Pamplemousses, the King of France maintains, at a considerable expense, and in good condition, a spacious botanical garden, divided into four parts, representing the great quarters of the earth, in which the trees, shrubs, plants, flowers, herbs, roots, &c., of each are respectively planted; pieces of wood being fixed in the ground by each, describing its name, native country, and qualities. In this garden, Cinnamon and Cloves thrive amazingly."

produced only a light bark, triflingly unctuous, and very inferior in quality to that of the Moluccas. The Clove trees dwindled, and though the plant itself appeared healthy, its fruit did not answer the expectation of Government. In a word, this business was nothing more, properly speaking, than an object of curiosity; like those Orange trees in Russia, or in the north of Germany, which produce fruit by dint of attention, but the fruit is degenerate, has no taste, no flavour, and scarcely even any smell."

Fortunately for his peace of mind, Poivre did not learn the ultimate failure of his schemes. He left the colony in 1773, soon after his friend Marion had been slaughtered and eaten by the cannibal Maoris in the Bay of Islands. When Poivre reached France, he

1818 to Mr. Torrenberg, whose memoir of Pierre Poivre was published. M. A. Boullié also published a memoir of P. Poivre at Lyons in 1825. *S. Pasfield Oliver, Capt., Moray House, Anglesey, Gosport.*

P.S.—On the column erected by M. Liénard in the garden of Pamplemousses, the name of Pierre Poivre occupies an honourable place. In the Jardin National at St. Denis, in the neighbouring island of Réunion, the public benefactor is yet more honoured. A bust of the administrator was placed here on a monument erected by the Count de Chabrol the Colonial Minister, and M. de Freycinet the Governor of the Island in 1825: "A la mémoire de Pierre Poivre, né à Lyon en août, 1719.

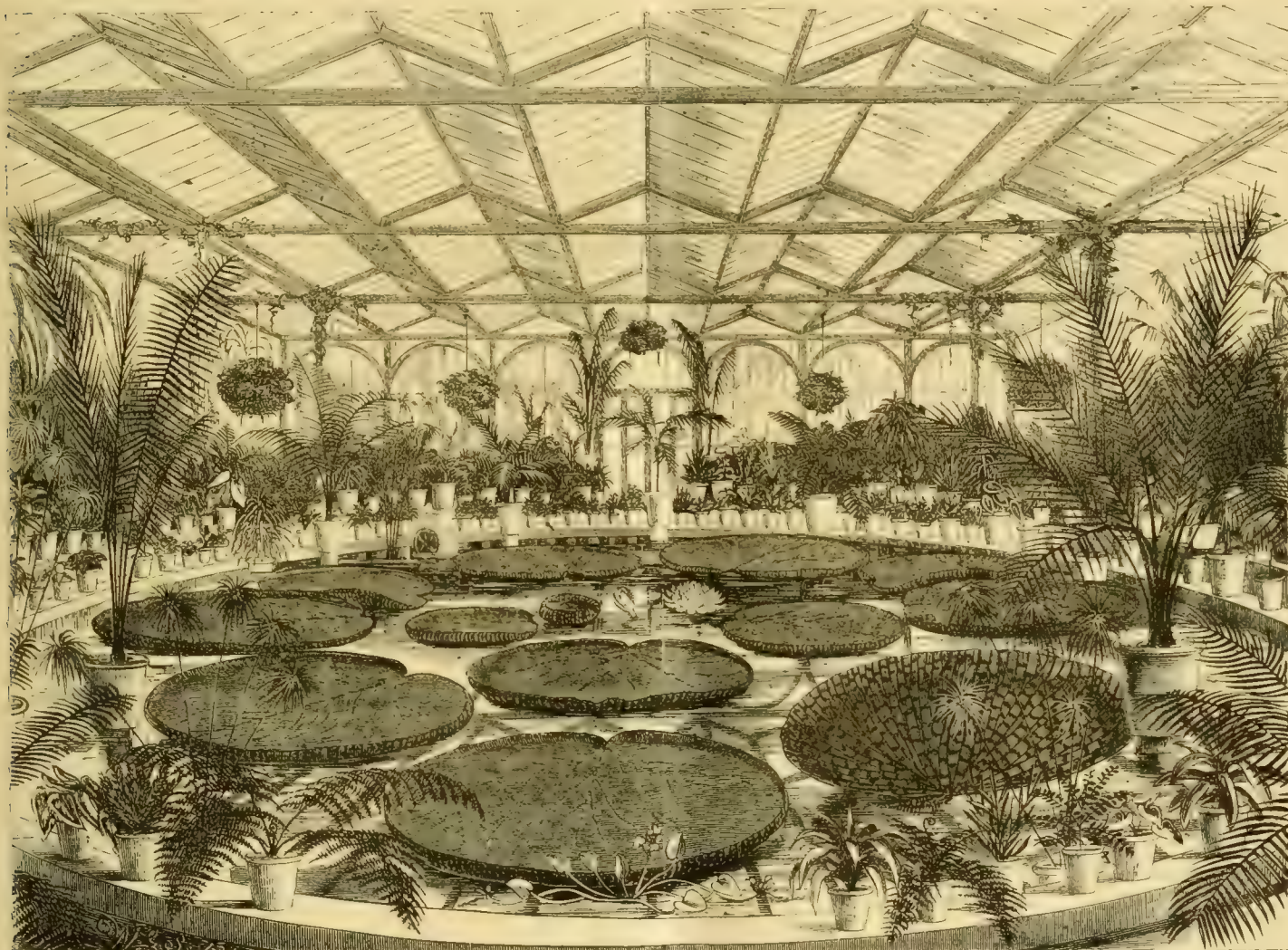


FIG. 14.—VICTORIA REGIA HOUSE AT CHATSWORTH. (SEE P. 62.)

Alas! there is another side to this picture. M. de Grandpré, writing in 1789, ten years later, says:—"When the French succeeded in pilfering spices from the Dutch, the plants were conveyed to the Isle of France, and carefully cultivated in the king's garden. A few prosperous years, with skilful and expensive management, gave reason to hope they might be naturalised there, and the Government had even begun to distribute the young plants among the inhabitants, and to teach them how they were to be reared; but the hurricanes soon put an end to so flattering a prospect. The settler grew weary of the expense and extreme care necessary to the support of an object of which the profit, while it was uncertain, was also at least far distant; and the results, even in the king's garden, were by no means so satisfactory as was expected. The Cinnamon

found he was in disgrace at court, and it was not until two years had elapsed that he found M. Turgot assured of his straightforward and zealous policy in the Mascarenes, for his enemies had done their worst to empoison the French minister against the reformer who had done his best to stop the prevailing corruption in the colony he had been sent to administer. Poivre died at his residence, La Freta, on the banks of the Saône, two leagues from Lyons, on January 6, 1786.

The notice of Poivre's life in the *Biographie Universelle* is by M. de Gérando, who has drawn his materials from the account written by M. Dupont de Nemours, which was prefixed to the edition of the *Voyages d'un Philosophe*, published at Paris in 1797. The Academy of Lyons offered a prize for the best eulogium of Poivre, and this was awarded in

Intendant des îles de France et de Bourbon depuis 1767 jusqu'en 1772. Mort le 6 janvier, 1786. Ces îles lui doivent le Giroflier et le Muscadier introduits en 1770 et 1772." *S. P. O.*

SCOTLAND.

BINROCK, DUNDEE.

LIKE other great industrial towns, we expected to find Dundee well environed with suburban seats where gardening was well represented; and judging from the numerous handsome entrances, well-trimmed shrubberies, and choice evergreen trees associated with the residences of the wealthy Dandonians (and it is well known they are not few), horticulture must

have a good share of patronage. The successful exhibitions held at Dundee for a number of years, and the numerous enthusiastic amateurs connected with the horticultural association of that town, also show that an interest in gardening is not lacking. I embraced an opportunity when in the district lately of visiting a few seats of gardening notoriety.

At Binrock, the seat of J. M. Keiller, Esq., I called on purpose to see what the gardener—Mr. Grossart—was doing. His name being much associated with Orchid contests and extensive exhibits of plants at the Royal Caledonian Horticultural Society's shows, one expected to find him engaged with his favourite plants in the gardens. The order and good management in every department indicated that all the gardening at Binrock was alike, and equally favoured, and in course of time—for time as well as skill is necessary in horticulture—more of Mr. Grossart's productions will be seen at exhibitions. Many of the plants in the fine range of glass are, however, still small.

Passing through grounds well furnished with trees and shrubs, the range of houses chiefly set apart for plant culture was reached. Among cool Orchids, *Odontoglossums* *Pescatorei* and *Alexandrae* filled one house. Some fine spikes of *O. Eldorado* were at their best; the flowers were very large and clean. *Miltonia vexillaria* was doing capitally, freely flowering, and the foliage much darker than usual. A fine specimen of *Cymbidium Lowianum* was in fine form, robust and healthy. *Cattleya Lawrenceana* was flowering beautifully, and the plant in fine condition. *Cypripediums* were numerous, and showed great vigour, *C. Stonei* being well represented. Abundance of air is supplied to this structure, and the plants are stood wide apart on the stages. The next division was filled with *Odontoglossum Alexandrae*, chiefly *Cælogynes* (the Chatsworth variety as the best), and *Lælia purpurata*. A fine variety of the latter was flowering very freely. Passing to another structure, which was set apart for *Cattleyas*, *Cymbidiums*, *Dendrobiums*, and *Lælias*, *L. purpurata alba* was observed finely in flower, with some spikes showing six to seven large well-developed flowers, and as many as nine on several of the more robust plants.

The next division contained a collection of *Cypripediums*, *Angræcums*, and *Phalænopsis Schilleriana* stood amongst plants of *Cocos Weddeliana*, and having a pleasing effect. In the next structure a collection of stove plants is grown—Ferns and Palms in fine health, and vigorous plants of *Dracænas*, *Alocasias*, &c., with *Allamandas* hanging from the rafters. In the next division was found a collection of *Crotons*—*Countess*, *Disraeli*, *Warneri*, *Sunrise*, *Sceptre* (with long bright leaves), and others arranged for effect. Bright and beautiful as this grand species appear when in a house by themselves, we prefer seeing other plants with fine foliage associated with the *Crotons*. In another house Melons and Cucumbers are grown. Binrock, a white-flesh fruit; Best of All and Prince Albert Melons being special favourites. The plants were fruiting freely. Tomatoes are cultivated on the north side of the structure, and every bit of space was turned to some account. In one division of this range of span-roofed houses, a collection of plants in full flower was noticed, such as *Azalea*, *Pelargonium*, *Calceolaria*, *Spiræas*, *Marguerites* &c.—a gay and attractive display.

This handsome range stands on a terrace, from which fine views are obtained of the river and across to the coast of Fife, but eastward the Taybridge mars the view to some extent. From this point one looked down over the sloping ground, where a number of plants of *Weigela rosea*, bending to the ground with flowers, gave much to admire. Beds of tuberous-rooted *Begonias* nearly in full flower, *Pelargoniums*, &c., were observed; also a span-roofed house full of zonal, French and other *Pelargoniums*, which were making a great show.

In the conservatory, a structure connected with the dwelling, were Palms and other graceful foliaged plants for decorating. Palms were conspicuous for their size and robust health. *Coleus*, of large size,

were used to enhance the beauty of the green foliage—in which they were placed. This conservatory is furnished with an electric light apparatus, which renders it a very useful adjunct to the mansion. There are numerous retreats in the grounds where the river can be viewed at pleasure, while one can be concealed among trees and shrubs, or sheltered from sun and wind by them; rocks covered with Ivy gives one the idea of being far removed from the busy town of Dundee. Some large masses of shrubs are passed, with a somewhat formal rock-garden in front, still remarkably gay with the white *Iberis*, *Saxifrages*, *Sedums*, and other plants found in rock gardens.

Long lines of *Roses*, which had been cut down somewhat by the frost, were starting vigorously from the surface. Teas were numerous, and seemed to have suffered little. A hasty run through the vegetable garden convinced us that careful attention is given in that department, and all crops are doing well. Strawberries on the slopes were most promising, and those under shelter of the rocks were near to the colouring stage, *Black Prince* being the earliest. President is largely grown, and much valued for its certain and abundant cropping. A fine range of fruit-houses is likely to be erected, and there is all one could desire for position and shelter to grow fruit. *M. T.*

COFFEE GROWING IN JAVA.

REPORTING on the finances of Netherlands' India for the year 1893, Sir G. Bonham makes some interesting remarks on the cultivation of coffee in Java, which had been brought out by a Government commission on the subject. Referring to the difficulties a coffee-planter has to contend with, the fact is stated, that, as the coffee plant only comes into bearing in its fourth year, the capital and labour expended are meanwhile unproductive, a state of things rendered particularly unsatisfactory in the case of the native, who is usually entirely destitute of capital or ready money, and consequently has to borrow, if possible. To assist this class, it has for some years been the practice of the government to give special advantages for the growing of intermediate crops, i.e., crops grown between the rows of coffee plants, but this system has again disadvantages. The fact that land suitable for coffee cultivation is no longer to be found in the neighbourhood of the villages causes the crop to be looked upon as an auxiliary one where the cultivator has other resources to depend upon. During the four years that a planter derives no income from his coffee, he devotes his attention to the cultivation of indigenous crops, and ends by regarding these as his principal source of income, the coffee being entirely subsidiary, so that a man may plant as few as fifty trees annually, thus leaving himself ample time to grow other crops. The case of the free coffee farmer is entirely different; he plants not by tens, but by hundreds and thousands. Coffee planting is his principal business, occupying all his time and resources. To work any coffee plantations of importance he must either have large means or good credit to tide him over the four years of waiting for the first full coffee harvest.

PLANT NOTES.

EUCOMIS UNDULATA.

SEVERAL examples of this recently-imported pretty bulbous plant, are at present in flower in McArthur's Nursery, Maida Vale, London. The neat arrangement of its green fleshy leaves adds to its value as an ornamental plant even when it is not in flower; and when it is furnished with dense heads of greenish flowers, it has a strikingly effective appearance. The plant has the further merit of lasting for a long time in bloom, especially in the dwelling, the dry air appearing to suit it. In the greenhouse, cool conservatory, or indoors, it is a useful and interesting plant. The plant is figured in the *Botanical Magazine*, 1083.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

SUMMER-FLOWERING CATTLEYSAS AND LÆLIAS.

—Plants which are intended to blossom during August, viz., *C. granulosa*, *C. g. var. Schofieldiana*, *C. Eldorado*, *C. E. Wallisii*, *C. superba*, *C. calumata*, garden hybrid; *Lælia elegans* in its different types should now either be in or about to flower, and most of the *Cattleyas* and *Lælias* are three weeks earlier than usual in flowering this season, so that plants which usually open their blossoms in August are opening their first flowers. The plants should be well supplied with water, that their pseudobulbs may keep in a plump state during flowering. After bloom is passed, the plants may be gradually dried off and placed in a dryer and airier house. *Cattleya superba* is rather difficult to grow, as a rule. I find it to do better when grown in the heat and moisture of the *Dendrobium*-house, and fastened in shallow teakwood baskets, which I hang close up to the roof; in this position it gets the spray from the syringe. The growths that I get in this way on the plants produce seven and eight grand flowers on a spike. After flowering, the plant needs to be kept moderately dry. The effort of flowering seems to exhaust the plant, as I do not often find them to make a second growth the same season. *Lælia elegans*, *L. e. alba*, *L. e. Turneri*, the last-named still one of the very finest varieties, *L. elegans*, and *L. Morreniana*, another very dark-flowered variety in the way of *L. Turneri*, do better when grown in shallow baskets than in pots hung close up to the roof. *C. Eldorado* and its white form, *Wallisii*, do best when planted in shallow baskets, or fixed on teak rafts hung near the glass. *Cattleya Victoria Reginae*, which is nothing more, in my opinion, than a variety of *C. amethystoglossa*, and *C. Alexandrae*, should be making growth, and will need to be kept thoroughly moist; they will flower towards the end of next month. *Cattleya Harrisonia* and *C. Loddigesii*, which have nearly completed growth, and the flower-spikes are ascending the sheaths, must be kept in a growing state till flowering is over, when they ought to have water gradually withheld. The plants of *Cattleya citrina* grown in the Mexican-house are starting new growths, which it is necessary to encourage, and growing on as they are, on wooden rafts, they soon get dry, and there is no danger of affording too much water. My plants get daily syringing, like the other plants in this house.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

NUTS.—To avoid risk of loss of Walnuts from the drought, the roots of the trees should receive a heavy watering, and if growing on arable land, a thick mulching of litter. This, as well as the watering, should extend as far as the extremities of the branches. On grass, a covering of lawn-mowings, or other short grass-mowings, would prevent moisture from escaping, and would not injure the sward. The same remarks apply to Cobs and Filberts, the quantity of water afforded being according to the nature of the soil, whether stiff and holding, or light and porous. Filberts form such a valuable addition to the dessert during the winter, that no amount of trouble should be avoided to bring the crop to the highest perfection; and, commercially, it is one of the best paying crops.

PEARS.—Tie-in all young shoots required for extending the trees, and thin off over-abundant fruits as soon as possible. In the absence of heavy rains, moisten the soil about the roots once a week; and where such is afforded, nothing could be more favourable for choice varieties than the present hot weather. It is owing to this fine weather, and abundant root-moisture, that I attribute the absence of spotted or cracked fruits in this garden. Glou Morcean, Winter Nelis, Bergamotte d'Esperen, and other sorts which ripen well only in favourable localities and seasons, are likely to be excellent this year. Where trees on walls are much besmirched by honeydew, remove the foliage worst affected by hand, as when it is left on the trees it forms a harbour for earwigs and other injurious insects. Syringe the Pear-trees thus affected with strong soap-suds, and before the same has had time to dry on the leaves, syringe it off again with clean water. Old Pear-trees against buildings, bearing good crops of fruit, will require different treatment from those

which grow on the walls of the garden, the whereabouts of the feeding-roots not being easily ascertainable; and if the soil is gravelly, it should be broken up over a good space, and watered several times with clean water until it is thoroughly moist, when liquid-manure in quantity may be poured over it.

RIPE FRUITS.—Directly wasps, hornets, flies, &c., begin to attack Apricots, Plums, and other ripe fruits, means should be taken to trap them; and nothing answers better than a trap made by placing one hand-light on the top of another, the bottom light to be placed on bricks at the corners, and baited with blemished fruit or treacle. A small hole is made in the cover of the bottom light, to admit of the insects crawling into the upper light, the space between the two lights being packed with paper and covered with soil.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

RIDGE CUCUMBERS.—Where these are grown, special attention is needed, aphides being troublesome at this season. To clean the plants, syringe them with a weak infusion of soft-soap, repeating this every evening till the plants are freed from them. In windy places it is prudent to peg down the leading shoots to the bed or surrounding soil. Afford water before the plants get dry at the root, and occasionally liquid manure, and in the event of heavy rain, place lights over them, or otherwise prevent the ground becoming very wet.

CELERY.—This will need at the present time much care, watering being done frequently and thoroughly. The quicker is the growth of Celery, the tenderer it is. The application of liquid manure at this season, provided it is of a mild nature, is a very useful aid to growth. Failing this, sprinkle the sides of the rows with guano, and wash it into the trenches. Attend to the earthing-up of the earliest crops as fast as it is safe so to do, or after affording water at some distance from the plants, soaking the land on either side.

FRENCH BEANS, &c.—These and Scarlet Runners will now require abundance of water at the roots. Another sowing of the first should be made in a warm position. Stake all Runner Beans before the plants get tall, and the bine entangled.

ONIONS.—Where the Onion-maggot gives trouble, it will be advisable to make a sowing of some Onion of the White Spanish type, as these stand the winter well if sown thus early, and transplanted early in the month of September, or they may be sown at the end of this month where they are intended to stand. Maggots seldom attack these Onions, as by the time that the first flies are hatched, the plants have got strong enough to resist the attack. I have grown good bulbs from seed sown and treated in this manner, which have kept good till Christmas.

VEGETABLE MARROWS.—If water has been plentifully supplied to these plants, there will be no lack of fruit, the plants having this year grown and set their flowers freely. Remove the Marrows as soon as large enough, thereby economising the vigour of the plants. For aphids, treat as recommended for ridge Cucumbers.

GENERAL WORK.—Much time has of late been taken up with watering crops, and Beetroot, Carrots, Parsnips, and Onions, which were not sown very early have suffered and are wanting in size, owing to the lack of moisture, but where the ground is in good heart they will soon begin to grow after rain. Keep the hoe at work amongst all crops, to check weeds and move the surface.

THE FLOWER GARDEN.

By T. H. CRASP.

CARNATIONS AND PINKS.—The layering of the former should begin with the wane of the bloom, and this is usually carried out whether the plants are growing in the border, in beds, or in pots. Before commencing to layer, a compost of leaf-mould, loam, and sharp sand, in about equal proportions, should be prepared, in which to root the layers; and pegs cut, which may either be got from stout Bracken stems, or worn-out birch-brooms. Let the soil around each plant be carefully stirred with a small hand-fork, and a quantity of the compost some 2 inches thick placed about

them so far as the shoots will extend when layered. The shoots to be rooted should be denuded of a few of their lower leaves, and notched with a slit an inch long in an upward direction, made from a point just through or below a joint, and at that part of the stem that has acquired some degree of firmness. The tongue thus formed should be gently pressed into the compost, and secured by a peg. When this is done, a little more of the compost should be put round the layer to the depth of about 1 inch. The plants should receive a good watering after the job is performed, and in dry weather occasional waterings, taking care that the shoots are not denuded of soil thereby. Propagations by means of pipings is generally adopted, if the shoots are too short or numerous for layering, or when broken by wind, &c., and it is preferable to take the cuttings first. The best and surest way is to make a mild hotbed, and put on it 4 or 5 inches of fine soil, covered with silver-sand. The pipings should be taken off with a heel, or cut off at a joint, and must be long enough to have a piece of firm wood at the end. Insert them firmly in the soil, afterwards watering and keeping them close and lightly shaded, but not too moist, or damp will carry off numbers of them.

ROSES.—With the rains of last week the bark will soon "run," and when that is ensured, budding should commence. It is important to place the buds on the young shoots as near the base of these shoots as possible, and a little more binding material should be given this year in case of hot, dry weather ensuing [or grafting-wax used. Ed.]. Roses of all kinds may be readily propagated at this season by cuttings, choosing the stiff, moderately-matured young side-shoots with a heel, and inserting them in sandy soil under hand-lights or in pots, placing them in moist, closely-shaded, cold frames, or on mild hot beds. It is prudent to reduce the leaves in size, by taking off the end leaflets, and a leaf or two may be left at the base of the cutting—it favours rooting. Grafted Roses, especially those on the Manetti stock, should have the root suckers removed, or they will rob the plants of vigour, and eventually the scion will perish. Lawns that are browned with sun and dry weather should be cut over frequently, to remove bents. The showery weather will permit the sowing of grass seeds, forcing these into the soil by sweeping and sprinkling finely-sifted loamy soil over it, followed with rolling.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES.—If Vines are grown in pots for supplying early Grapes next spring, the canes should be thoroughly ripened, otherwise fine fruit will be looked for in vain. To secure this end, abundance of air must be afforded, the pipes being kept warm during damp weather, no laterals allowed to grow; and the glass kept clean, so as to benefit to the full from the sunshine. In the matter of watering there should be no stint, but the soil should not be watered till it is becoming dry. It is a good practice to let the rods hang downwards on the back-wall of a narrow house, which may be done by raising the pots to the desired height, to induce thorough ripening. This is a practice that is followed by one of the most successful English Grape-growers in pots, but who never lets the roots or the foliage suffer. It is a great mistake to cause Vines to shed their leaves by suddenly submitting them to full exposure after they have been kept for months in a close, moist, and warm atmosphere. To get late Grapes, such as Mrs. Pince, Black Alicante, and Lady Downes' to ripen early, the Vines need great attention. I am as strongly inclined as ever to advise early ripening of the canes, and abundance of air, with the hot-water pipes kept warm for weeks to come after the Grapes are fully-coloured. By the end of September the fruit should be ripe and sugary. It was remarked that those thus treated here last season are as yet (July 5) showing no symptoms of shrivelling.

FIGS.—The trees carrying the second crop of fruit now swelling, should have as liberal treatment as when the first crop was growing, the shoots kept thin, those not required removed, and gross ones stopped. Trees whose roots are not confined, and with shoots so gross that they are certain to be unfruitful, should have a portion of the roots on one side, and those that have a downward tendency, cut off above the level of the drainage, the whole being made firm about the roots, with good soil. Later in the season these unfruitful trees may have the rest

of the roots partially cut away with a knife. The primary object in early root-pruning is to get the new root-fibres ramifying in the soil before the leaves fall—fruitfulness is then almost certain. That, in fact, is my experience, and I have practised it on many kinds of fruit; but the cutting off of roots is never practised when lifting will suffice.

STRAWBERRIES.—Runners for forcing which have to be lifted from the ground should be taken up with all possible care, potted firmly, and kept in the shade till growth is active, when they may then be placed in full sun. In northern counties, growth may be hastened by placing plants in a frame that is kept close and shaded at first, and fully exposing the plants when they are able to stand sun and air. Those potted in the usual way will require abundance of water, and the whole space on which the pots are placed watered freely in the evenings of hot days; rain-water or pond-water is best, and well-water the worst.

PLANTS AND THEIR CULTURE.

By B. WADDS, Gardener, Birdsall Manor, York.

BALSAMS, COCKSCOMBS, AND EGG PLANTS.—These plants are benefited by frequent syringing, liquid manure, and abundant ventilation. They should never be grown far from the glass, but always as close to it as is prudent, lowering them as they increase in stature.

CALCEOLARIAS.—Sow seeds in a well-drained pan of sifted loam, leaf-mould, and sharp sand, watering the pan gently before sowing the seeds, and sow thinly, pressing the seed into the surface, and do not cover it with soil, but tie a piece of paper over the pan, and keep it moist till the seeds have germinated, when the paper must be removed, and the pan placed in a handlight at the north side of a wall out-of-doors.

MIGNONETTE for winter flowering should now be sown, using 6-inch pots, well-crooked, and filled, first with lumpy turf and dry cow-dung on top of the crocks, and then with finer loam, leaf-mould, and sea-sand, well mixed together, leaving space for water. Water the pots thoroughly when prepared, and sow thinly, covering the seed with some finely-sifted mould. Stand the pots in a shady place, and cover them with a piece of netting or tiffany till the seeds are up. Thin out the plants as soon as they are ready to handle. The best varieties for pots are Miles' Spiral, Queen Victoria, Machet, Garaway's White, and Giant Crimson.

CYCLAMEN PERSICUM.—Seeds should be sown as soon as possible after the seed is ripe, using a good kind of loam, leaf-mould, and plenty of sand, and pots or pans that are well drained. In this case the soil should be watered before the seeds are sown on it, and be covered with a quarter of an inch of finely-sifted soil. Cover as before with paper, but keeping the seed-pots in a temperature of about 60°. The seeds are large, and may be watered with a fine-rose pot at times.

STEPHANOTIS FLORIBUNDA.—Regulate and thoroughly clean the shoots of those plants that have done flowering. Give good supplies of liquid-manure, and let the shoots grow freely, but do not let them twine round each other; and where there is brown scale, the foliage and stems will require careful sponging or rubbing between the finger and thumb to remove them.

IXORAS.—Maintain a moist growing temperature and afford frequent watering and copious syringing to plants making growth, with shade during bright weather. Those coming into flower will require plenty of air on favourable occasions, and not much shade; those out of bloom will be better in a cooler temperature, with plenty of light and air, and not too much water at the root, but they should not be allowed to get dry at any time.

GARDENIAS AND TABERNÆMONTANAS need abundance of water and a moist-growing temperature. When the plants are kept in 8 or 10-inch pots, plunge these into liquid manure at times the same strength as you water with; it will lift them on considerably if they stand in the water for five minutes.

PERGULARIA ODORATISSIMA.—Give abundance of clear soot-water and manure to this beautiful sweet climber; it wants growing in abundance of heat and moisture.

EDITORIAL NOTICES.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited; but the Editor cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, JULY 19 { Royal Botanic Society, Musical Promenade.

SATURDAY, JULY 22 { Royal Botanic Society.
Manchester Royal Botanic Society.

SHOWS.

TUESDAY, JULY 18 { Oxford Union Carnation and Picotee.

THURSDAY, JULY 20 { Newcastle-on-Tyne Horticultural (three days).
Trenttham and Hanford Horticultural.
Bedford Horticultural.

SATURDAY, JULY 22 { Midland Carnation Society, at Birmingham.
Manchester Royal Botanic Society's Rose Show.

SALE.

FRIDAY, JULY 21 { Orchids at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°·4.

THE CHISWICK SHOW.

TIMES have changed, and not only have we changed with them, but our predecessors, who had often to chronicle the glories of Chiswick, have mostly undergone the great change which is beyond chronicling. It was impossible to shun some such reflections, trite though they were, at the recent show at Chiswick. With the aid—or mostly without it, as it proved—of the residents interested in horticulture, an attempt was made to organise a “show” at Chiswick this week. The weather proved, for once at a Chiswick show, highly favourable; but the show—well, it was not essentially bad, it was in some respects good, but it was unworthy the old reputation of Chiswick, and was a falling-off from the “Congresses” which have been held in the historic gardens of quite late years. Those Conferences, we fear, were, from a financial point of view, failures, and we suppose they did not attract the local residents in such numbers even as came to the gardens on Tuesday last. In the morning of that day, when special facilities were given to Fellows and subscribers, the attendance was indeed small, but the attractions of the band and of the estimable lady who distributed the prizes (but who, by the way, has no sort of connection that we know of with horticulture), sufficed, we are told, to secure a larger attendance in the afternoon.

These circumstances seem to show that, for the local residents, contrary to what is the case in the neighbouring parishes of Richmond or Ealing, horticulture has no particular attractions. We do not suppose it had much more in the “palmy” days of Chiswick—whenever they may have been, but then it was the fashion to go to Chiswick, and then the shows were clearly vastly better than the one held on Tuesday, and the gardens were much more completely representative of progressive horticulture than they are now. It would scarcely be possible to revive the Chiswick shows, such as they used to be, nor do we think, in the interests of horticulture, it would be desirable if it were possible. We should be sorry indeed, to see the Royal Horticultural Society become a donkey-decorating, carriage-adorning institution. Catering merely for fashionable folk is not only unworthy of a

chartered society, but, as was fully exemplified at South Kensington, it was financially disastrous.

The Congresses or Conferences to which we have referred, if they, in their turn, were unsuccessful as sources of revenue, were at least highly useful to horticulture, and excited the greatest interest among horticulturists. We may cite, as cases in point, the Apple Congresses, the Vegetable Congress, the Conifer Congress, those devoted to Chrysanthemums, to Roses, to Dahlias, to Begonias, to Asters, to mention only those which were held at Chiswick. The Treasurer, no doubt, did not view these gatherings with much favour, but the working Fellows of the Society appreciated them greatly, and the records of their proceedings in the *Journal* of the Society have been largely instrumental in lifting the Society out of the slough into which it had fallen, and are a permanent tribute to the importance of the Society.

By way of contrast we may ask what effect will last Tuesday's meeting have upon the Society? Little or none that is advantageous, we fear. The gardens were suffering, as most gardens are, from the prolonged drought and excessive heat; but, putting that aside, there was little to attract the casual visitor, and no attempt had been made to interest him in the work of the garden or to make clear to him what the purpose of the garden really is.

Remembering, as we do, the frightful dilapidation and decadence that ensued at Chiswick during the evil days—now, we hope, things of the past—we can see great evidence of improvement and renovation; but the ordinary Fellow of the Society, or the casual visitor desirous of realising the present state of horticulture, of seeing for himself the most perfect keeping, the most correct nomenclature, the most serviceable style of labelling, the best and most improved methods of procedure in various departments, the best and most suitable varieties of particular plants, the best means of combating insect or fungus pests, the most varied methods of garden decoration and “bedding,” or the most practically interesting experiments, will, we fear, come away from the old garden with a feeling of disappointment. He will not know all the circumstances and all the drawbacks; he will look only to what he sees before him. It will be unfair, no doubt; but he will judge by results, and the finest band in the metropolis will hardly serve as a substitute for what he thinks he has a right to see—a model garden.

In the case of hospitals it is found that nothing tends so powerfully to keep up a high standard of efficiency as a school of medicine attached to them. When we get our School of Horticulture we may look for further improvements at Chiswick—but in the meantime, much may be done in the directions indicated.

BEGONIA GLOIRE DE SCEAUX.—The plant under the above name is an excellent winter-flowering variety, with flowers of a deep rose colour, the trusses of which show up well against the chocolate-brown and bronzy-tinted foliage. It is of easy cultivation, and cuttings struck in early summer can, under good culture, be made to flower freely the following winter. It is a bright-looking Begonia, and the flowering season extends over a considerable period. The plant from which our engraving was made was one of a large group shown by Mr. Jennings, gr. to Mr. Leopold de Rothschild, Ascott, at the meeting of the Royal Horticultural Society, on January 17, this year. These plants were growing in 6-inch pots, and had a height of 18 inches. As a decorative subject it would be hard to excel.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—On the occasion of the recent Bath Rose Show, a large tent and the lawn around it was set apart by the Management Committee for the use of members and friends of the above Institution, who were invited at 5 o'clock to hear an address from Mr. H. J. VEITCH in support of the claims the Institution has upon gardeners. R. B. CATER, Esq., a prominent member of the Bath and Floral Fête and Band Committee, and a staunch supporter of horticulture about Bath, presided, being supported by Mr. H. J. VEITCH, Mr. INGRAM (Secretary of the Gardeners' Royal Benevolent Institution), Mr. WILLIAM A. GARAWAY (of the firm of JAMES GARAWAY & Co.), Mr. B. R. F. PEARSON, Mr. W. W. JEFFREY, &c. Among a large number of gardeners present were Mr. BETHEL, formerly of Ashton Court Gardens, and Mr. W. H. WARD. Mr. VEITCH, who was very cordially received, made a forcible and eloquent appeal to gardeners and the owners of gardens in support of the funds of this excellent Institution, pointing out what a capital investment it was for gardeners paying a life subscription of £10 10s., or an annual subscription of 1 guinea (4½d. per week). Mr. INGRAM and other gentlemen spoke in support of the appeal made by Mr. VEITCH.

NATIONAL CHRYSANTHEMUM SOCIETY.—We are desired by Mr. R. DEAN (Hon. Sec.) to inform our readers that a special meeting of the General Committee and also of the Floral Committee will take place at the Royal Aquarium, Westminster, on Friday, July 21, at 6 o'clock in the evening, to examine some frozen blooms of Chrysanthemums sent from Sydney, and for other business. Members of the Society not being members of the General or Floral Committees are invited to attend at 7 o'clock, to inspect the frozen blooms.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The quarterly meeting of this society was held on Monday evening last at the Caledonian Hotel, Mr. LATHAM COLE occupying the Chair. Three new members were elected, making a total of thirty-five in the six months. The death of a non-paying member occurred in May last, and the amount standing to his credit (£24 7s. 4d.) was paid to his widow. The late member ceased to contribute in 1886. One member only is on the sick fund at the present time, thus showing the health of the members to be good. The Treasurer reported having invested £200 in West Bromwich 3 per cent. Stock since the last meeting. The usual Vote of Thanks to the Chairman terminated the proceedings.

A HORTICULTURAL ASSOCIATION FOR THE TOWN OF DERBY.—We are gratified to note a step in the right direction has been taken at Derby, in the starting of a horticultural association. A well-attended meeting was held in the Curzon Street Schools on Tuesday evening, July 4, at which it was decided to form an association, under the above name, for residents in Derby, having the following objects: To obtain instruction in the best and most profitable methods of cultivating fruit, flowers, and vegetables, and of storing and packing fruit; to encourage the tasteful arrangement and successful cultivation of gardens; to promote the extension of window gardening; to secure the teaching of gardening as a “special subject” in schools; to assist in procuring practical training for gardeners, by means of which they may qualify for certificates of efficiency; to further the acquisition of ground for allotments under the Allotments Act, or by other means; to obtain fruit trees, plants, seeds, &c., for members on the most advantageous terms; and generally to advance and protect the interests of the members. A large number of gardeners of the district were enrolled as members, and it is confidently hoped that the number will be very considerably augmented. Mr. W. G. WHELDON was unanimously elected President; Mr. R. Y. DAWBARN, Treasurer; and the Joint-Secretaries, Messrs. CHANNON and WELBOURN. Joint-Secretaries' address, 6, Shelton Terrace. A representative workers committee of sixteen members was also appointed.

THE DECORATIONS AT WOLFERTON STATION.—The floral and other decorations that were carried out by the Great Eastern Railway on the occasion of the recent Royal wedding were very extensive and complete. The platform reserved for royalty was covered with crimson cloth, upon which were placed by Mr. T. JANNOCHE, of the Lily Nurseries, Dersingham, who had the entire charge of the floral decorations, three large groups of plants; and over the portico was another one of foliage and flowers. The front of the building and the verandah were likewise profusely adorned with flowers and

GLOUCESTERSHIRE ROSE SOCIETY.—This Society's sixth annual exhibition was held at the Corn Exchange on Tuesday, the 4th inst. Owing to the heat and drought the show was about half its usual size, while the quality, though fairly good, was not up to the high average of previous years. North-country exhibitors did well, and Messrs. HARKNESS & SONS of Bedale took no fewer than five 1sts, besides other prizes. Messrs. JEFFRIES & SON of Cirencester gained a 1st for twenty-four varieties in the nurserymen's classes. The most successful amateur in the open classes was Mr. H. V. MACHIN

to M. F. Desbois—a cutting made in March, bearing a fine truss of bloom, the entire plant about 13 inches high; *Oncidium crispum* Trianaei, to MM. Edw. Vervae et Cie.—large brown flowers tinged with rose; *Cypripedium Harrisianum* robustum, to M. Ch. Vuylateke—a hybrid between *Harrisianum* and *Hookeri*, remarkable for the size of the flowers, the lip being very upright and spreading; *Cattleya guttata* Leopoldi, to M. A. Van Imshoot—lip dark violet, divisions dark brown spotted with black; *Grammatophyllum Ellisii* (à l'unanimité), to M. A. Van Imshoot—very large stem, with twenty-five flowers, yellow spotted with brown; *Odontoglossum elegantissimum*, to Jules Hye—long cluster, with a hundred small flowers, yellow spotted with brown; *Cattleya Mendeli virginalis*, to M. H. Schmitz—flower nearly white, slightly tinged with rose, lip with a touch of yellow; *Nicotiana glauca* albo-marginata, to M. F. Desbois—a pretty novelty, much noticed at the last Quinquennial Exhibition. A lot of 100 cut Pinks, from M. Gnequier, were very remarkable, and comprised the best varieties. Certificates of Flowering: *Dracana* (Aletis) grandis, to MM. Edm. Vervae et Cie.—plant flowering wonderfully, remarkable for its dwarf habit, about 29 inches, leaves green, undulated, coriaceous, large cluster of 500 small green flowers with white stamens, fecundation is proposed with *Aletis Massangeana*, Lindeni, &c.; *Oncidium macranthum hastiferum*, to M. A. Van Imshoot, with more than a hundred large yellow flowers on a very long raceme trained in a hoop on galvanised wire; *Odontoglossum vexillarium* (à l'unanimité), to M. Jules Hye—a very fine variety with more than a hundred flowers.

A CEMENT HOUSE.—We have just seen at MM. DESMET FRÈRES, at Ledeborg, Ghent, a house built entirely in cement—walls, framework, and sashes all cement, and the only other materials used are glass and lead, the latter to hold the panes. The walls are double, and there is a space between them which can be filled with sawdust. The building was erected by M. PICHÉ, who has constructed capital cement water-tanks for various Belgian horticulturists. And what is the advantage of this innovation? How will the building answer in winter? This the future will tell us, and we will report to the readers of the *Gardeners' Chronicle*. Ch. de B.

HEREFORD ROSE SHOW.—The twenty-seventh annual exhibition, under the auspices of the Hereford and West of England Rose Society, took place in the Castle Green at Hereford on Wednesday, July 5. The show, like all others this year, says the *Birmingham Daily Post*, was much smaller than usual, but, nevertheless, considering the season, it was on the whole a very creditable display. Several of the chief prizes went to the North, many of the best known local growers, on account of the drought, having to be contented with 2nd and 3rd places. In the nurserymen's division, Messrs. Harkness & Son carried off the palm for a splendid box of seventy-two blooms; and in the class for thirty-six, Messrs. Mack & Son secured premier honours. The Gold Medal, offered by the National Rose Society for eighteen blooms, was carried off by a local exhibitor, Mr. John Ough; and the Silver Medals fell to Mr. A. Whittton, Sir G. George Cornwall, and Mr. Drew. The other prize-takers included the English Fruit and Rose Company, Rev. M. Marshall, Mr. C. Whitting, Mr. C. Jones, Miss Bulmer, Mrs. Woodhouse, Mr. J. Rankin, M.P., Messrs. Merryweather, Mrs. Davenport, Mrs. Watkins, Rev. A. C. Lee, Mrs. Blashill, Miss Stanhope, Miss Barneby, and Miss E. Crichton. At the luncheon the Mayor of Hereford (Mr. J. R. Symonds) presided.

KINGSTON, RICHMOND, AND DISTRICT GARDENERS' OUTING.—On Wednesday, the 5th inst., about thirty members of the Richmond and District Horticultural Society visited Messrs. SUTTON'S establishment, nurseries and trial grounds, at Reading. A most interesting morning was spent, the *Gloxinias* and *Begonias* being greatly admired. In the afternoon a cricket match had been arranged with the



FIG. 15.—*BEGONIA GLOIRE DE SCEAUX*: GROWN AT ASCOTT. (SEE P. 66.)

foliage, as were the royal waiting-rooms. It may be noted as a remarkable feat in gardening, that 3000 blooms of forced Lily of the Valley were used in the decorations, and in addition, Mr. JANNOCHE sent enormous supplies to all the Court florists in London during the week. The decorations were not confined to the station, but extended to the carriage-portico and drive; and on the brow of the hill, near the railway-station, the inhabitants of Wolferton erected a fine triumphal arch of evergreens, white Roses, &c. The extraordinarily large use made of Lily of the Valley has by no means exhausted the stock of these flowers at Dersingham, as many thousands are at the present time in all stages of development.

of Worksope, who carried off five 1sts. In the local classes, Mr. CONWAY JONES of Gloucester achieved the greatest success, he being credited with two 1sts, the Gold Medal presented by the Society for the best box of eighteen varieties exhibited by a Gloucestershire amateur, and the Silver Medal presented by Messrs. JEFFRIES for the best box of Tea or Noisettes exhibited by a Gloucestershire amateur.

JULY HORTICULTURAL MEETING AT GHENT.

—Certificates of Merit were awarded to the following plants:—*Strobilanthes Dyerianus*, to MM. F. Desbois and Louis Desmet-Duvivier—a beautiful novelty shown at the Ghent Quinquennial by Messrs. Sander & Co.; *Hydrangea otaxa compacta*,

Society's C. C. and the first eleven of SUTTON'S C. C. A pleasant game was enjoyed, in which the latter club were victorious.

EXCURSION.—The employés of Messrs. LAIRD & SINCLAIR, Nurserymen and Seedsmen, Dundee, Monifieth, and Monikie, held their annual pic-nic on Wednesday, July 5, the place chosen being Auchmithie. The party drove in brakes by way of Arbroath, Auchmithie being reached after a pleasant drive.

PRESENTATION.—In the Crown Hotel, Dundee, on Monday, July 10, Mr. INGLIS, cashier to Messrs. LAIRD & SINCLAIR, Nurserymen and Seedsmen, Dundee and Monifieth, was presented on the occasion of his marriage, by his fellow-workers with a silver dessert-stand.

HOME CORRESPONDENCE.

PEAR BEURRÉ GIFFARD, ETC.—Many years ago I planted this fine Pear on a south wall to come in just before the Jargonelle, and very acceptable its fine handsome, juicy fruits always are, generally ripening the first or second week in August; but, to my great surprise, I gathered the first ripe fruit this year on July 4. Hitherto, Doyenné d'Été, foremost of the flock, and several others came in before it, but this year, a tropical sun, and only 1 inch of rain for one hundred days, have altered the whole course of things, and I was enabled to gather Waterloo Peach on the wall at the same time and place as the Pear. The Black Currant Champion has behaved splendidly, and produced fine large full-flavoured fruit this season. *J. Rust, Eridge Castle.*

DOG AND CAMPANULA.—In my garden I have a large number of plants of *Campanula rapunculoides*, and one of my dogs, an old fox-terrier, has a taste for eating them. The dog does not confine itself to the leaves, but pulls the plants out, and eats stems, leaves, buds, and flowers, with gusto. Le Maout and Decaisne in their *Descriptive Botany*, say that many species of *Campanula* are considered to cure hydrophobia in Russia. Possibly this curious belief has arisen from the fact that Russian dogs have been seen to eat *Campanulas*, but I have never myself noticed it in any other dog than my fox-terrier. The dog eats the plants when in perfect health. *W. G. S., Dunstable.*

OLD PEACH TREES AT ABERCAIRNY.—Your correspondents, pp. 722 and 749 in previous volume, afforded interesting information regarding the age of some Peach trees. I am able to supply further information concerning the age to which the Peach will attain. At this place is one of the first, if not the first, orchard-house erected in the country (in 1807). Two large houses, 17 feet high at the back, form the middle portion of a range of fruit-houses, and one of these has been used as an orchard-house since 1808, Peach trees being planted as standards in front of the pathway. When I took charge of the gardens, forty years ago, three of the original trees were then growing in this house. An Early Anne failed twenty years ago, and was followed eighteen years later by a Red Magdalene Peach. The remaining tree, a Red Magdalene, is showing signs this season of failing vigour. All these long years, these trees have borne regularly and heavily, and the fruits have many a time graced an exhibition table. Although the house has been rebuilt, the only remaining tree grows where it was first planted, and up to the present season I have observed no difference in its appearance. I may mention that the original trees were planted by Mr. McIntosh, father of Mr. C. McIntosh, author of *The Book of the Garden*, &c., both father and son having been head gardeners at Abercairny. *James Brown, Abercairny, Crieff, Perthshire.*

THE VICTORIA REGIA.—Has "W. W." never been to Chatsworth? or has he never read of the famous Victoria Regia-house there, where the plant has been successfully grown annually for upwards of fifty years? To Chatsworth also belongs the honour of first flowering this noble plant, somewhere, I think, about 1840. This first flower was sent by Mr. J. Paxton to the Queen, and it was then that the genus received its title of Victoria. *O. Thomas, The Royal Gardens.*

—As one who had charge daily of a well-known "Victoria-house" for years, I venture to say that some portions of the description of the plant given by "W. W.," p. 31, are incorrect, as for example, when he states that to protect the upper surface of the leaf, "the margin is turned up all round, forming a rim several inches high, the outside of which presents a spine-clothed barrier to any animals which might otherwise land on the leaf." I believe all growers of the Victoria will bear me out when I state that the edges of the leaves are turned up only while they are young and growing, and unfolding. When they cease to expand, the edges roll out and lie perfectly flat on the water. As to the perforations of the leaf, I never saw any not caused by accident or decay of spots; but, I never looked with a microscope. I have spilled gallons of water on the leaves to swirl dust and objects from off them, and it soon ran off at the flat edges, and evaporation did the rest. I doubt also if the stalk elongates "long after the blade has matured." I have floated a little girl over the tank stood on a board on a leaf over 6 feet in diameter; but, a family of three would have been wrecked. *Vic.*

LUISIA.—We read with surprise the article concerning *Luisia Amesiana* in the *Gardeners' Chronicle* for July 8, in which it is stated to have just flowered for the first time in England. This variety was introduced by us some two or three years since, and was named by us in honour of Mr. F. L. Ames, and the same season we bloomed two, if not three, plants. *Hugh Low & Co.*

THE DECORATIONS AT BUCKINGHAM PALACE.—An error has crept into your description of the floral decorations at Buckingham Palace, on the occasion of the recent royal marriage, at p. 39 of your last week's issue, where you state that the whole of some were entrusted to Messrs. Wills & Segar, of Onslow Crescent. We are florists to the Queen by Royal Warrant, and have supplied floral decorations and bouquets at all the State concerts and balls, &c., which have taken place at Buckingham Palace since 1869. We are the successors to the old firms of royal florists, Messrs. Little, Tuck, and Catleugh, all of Chelsea (but now extinct), and for some years past the floral decorations there have been equally divided. Thus, this morning we have supplied a large number of fine Palms and decorative plants, together with a number of bouquets for the State ball; whereas our portion for the royal wedding on Thursday last was all the floral work in connection with the grand staircase, the Marble Hall, the Round Library, and the choice vase-plants for the royal tables. *J. W. Wimsatt & Sons, July 11. [We regret we were not informed on this point. Ed.]*

SUMMER-PRUNING.—The question in dispute, may be stated in a nutshell, thus:—Does or does not summer-pruning augment or accelerate fertility? So far as a body of testimony that has been accumulating in volume and force for at least a quarter of a century can establish anything, the benefits of summer-pruning are beyond dispute. The case in favour of summer-pruning is altogether too strong to be affected by a few isolated cases on the other side, which the most zealous summer-pruner has never doubted the existence of, or denied. In fact, summer-pruners, whatever their methods or their views about surplus, or gourmand, or relay shoots, are perfectly familiar with unpinched forms of growth fruitful from base to summit, and I will give your correspondents a free run as to their length. As you truly remark in your Leader for June 3, p. 662 (in which you do scant justice to the early history and practice of summer-pruning, and the genius of its founder, the late Mr. Thos. Rivers, my first teacher in the art), we got fine crops before the days of orchard-houses and the dwarfing of stocks, and I would add, summer-pruning. No doubt, give Nature a free head, time, space *ad libitum*, controlled by skill, she will by some means, and at some time, reach her final goal—fertility. Those who can wait are welcome to extend their trees, and build fruit-rooms for their future produce at their leisure, for we gladly admit that on an unpinched tree the ratio of bud-production increases every year, but does it not also do likewise on pinched or summer-pruned trees, though we also admit that at an early age the unpinched will completely outstrip the pinched tree in the ratio of mere buds, that is, chiefly wood-bud production. This is, in fact, a mere mechanical truism. Leave a tree intact, it will have more buds than another tree a part of which

has been suppressed or cut away, inasmuch as the whole must needs be greater than a part. But the vital question in dispute is, will the pinched or summer-pruned trees have more fruit-buds in a given area than the unpruned ones? And this question cannot be settled through plussing the power of bud production with the area of the trees. Were this once admitted, then the matter might be formally stated and settled thus: the larger the fruit tree, and the further and faster it grows the more fruit, and *vice versa*. Are "Extension," "E. M.," and others prepared to go so far? If so, it would simplify matters much, and if not, why should they run their heads against summer-pruning? The two systems are not necessarily antagonistic, and why then waste time and force in pitting one against the other, as if this one were always and everywhere absolutely right, and the other wrong! To read some writers, one might imagine that gardens and orchards were suffering from a plethora of treatment, or heroic surgical operations, covering all the ground, and giving the trees a restless time of it, between rival methods of culture and treatment. Hence, apparently, some correspondents cannot briefly and clearly describe their own methods without falling foul of those of others. In reality, our fruit trees are suffering grievous loss, or perishing from sheer neglect. The lack of any and all treatment—inertia—reigns supreme over dirt, over-crowding, and semi-starvation. The first difficulty is to get something done. And besides this unwisdom of horticultural doctors, airing their differences so widely before their patients, there is work enough for all our energies in the planting of new fruit-gardens and orchards, and the resuscitation of old ones. If "E. M.," "Extension," and others are so sure that their systems are best, let them by all means preach and practice them to the top of their bent. Their systems are doubtless infinitely preferable to the lack of all systems, which so generally prevail, under which so many of our fine old orchards are languishing and dying [old age? Ed.]. But it is most desirable on the grounds of husbanding our cultural and literary force, that in illustrating our own views, we should not misrepresent nor caricature the practice or theories of others. Cultivators are many-sided—I had almost said many-eyed. And many surely see the merits of summer-pruning without being blind to those of extension. On the other hand, an "extension" grower may lay in long rods without being blind to the merits of hard-pruning. Until cultivators recognise the full force of local environment, and Nature's modes of culture, life, and its products, it will be impossible to pronounce *ex cathedra* in advance what treatment may prove most profitable. Not that I believe in summer-pruning the less—but in all other reasonable methods the more that they fit in with local conditions of soil, climate, and products. As, however, recent events seem to have revealed considerable misapprehension as to summer-pruning and pinching, I will embrace an early opportunity of recapitulating its merits, principles, and results, as practised amongst us in this year of drought, 1893. *D. T. Fish.*

—Considering the very slight prompting that induced Mr. Fish to pen a column or more on this subject on June 3, I am probably correct in attributing his subsequent silence to the fact that he has been spending the interval hunting for examples of his pinching system "rooted in science and embodied in practice," to match the examples sent you by "E. M." and myself. If this surmise be correct, you are not likely to hear from him for a considerable period, and meanwhile I would like to define Mr. Fish's "quarter-of-a-century" old school a little more clearly than he has done, just to show what that school is, and on what a slender foundation Mr. Fish's knowledge of it rests, as shown by his severe criticisms of "E. M.," in which he is careful not to commit himself beyond vague generalities. He is, however, clear enough in condemning "E. M.'s" description of the usual practice of pinching to "2 or 3 inches" or "two or three eyes," as explicitly stated by "E. M.," who is also condemned on that account as not knowing "the mere alphabet" of the subject. "E. M." is, however, quite orthodox in his interpretation of the general practice; if anything, he is a little too liberal in that respect. But that Mr. Fish himself has not mastered "the alphabet" of the school he professes so much devotion to, will be easy to show. Mr. Fish has sat at "the feet of Lindley" on this subject, he says, but his ears have been shut to his preceptor's voice. Here is Lindley's description from p. 378, *Theory and Practice on Pruning the Pear*. Alluding to Cappe's method, he

says:—"He pinches all the young shoots not required to form branches, when in a very young state; when they have scarcely pushed a finger's length, they are shortened to about 1 inch, or from that to $1\frac{1}{2}$ inch;" and when secondary shoots are produced from these shoots the same season, "he also pinches these to 1 or $1\frac{1}{2}$ inch from where they originated. They rarely push again, but if they do, their growths are again reduced as before." The *Gardeners' Assistant*, last edition, p. 406, says "it is now found to be the best mode to pinch them (lateral shoots) immediately under the sixth leaf. . . . Many of these shoots will push again after the first stopping, and when these are 3 or 4 inches long, they are pinched back to three buds, or to about $1\frac{1}{2}$ inch from their basis." Now this is the practice ridiculed by Mr. Fish. If Mr. Thompson's three buds be equal to $1\frac{1}{2}$ inch, under his sixth leaf must just be about equal to "E. M.'s"

bracketed "current year's shoots" instead of "old spurs," he would have done justice to what I did write. The cultivators I alluded to, do cut away some of the current year's shoots instead of pinching them in the orthodox way, because they know they can get fruit enough without spending time in pinching these shoots so often before fruit spurs form at their base. The admission of air and light to the branches by the complete removal of some of these current season's shoots is of more value to the tree than the spurs formed after a lapse of a year or two, and which perhaps never form at all anything better than wood-buds. They (and I agree with them), consider the practice a good one, where the shoots are so numerous produced as to rob the branches of the amount of sunlight, &c., necessary to mature the wood thoroughly, as unless this occurs fruit cannot

theory is opposed to fact. These are the points in fruit culture that I recommend to the readers of the *Gardeners' Chronicle*, and to "W. L. C." in particular. There should be no misunderstanding of these words, as I have endeavoured to put them as plainly as possible, and in such a manner that they can only be wilfully misconstrued. E. M.

CYRTANTHUS HELICTUS.

Our illustration gives a representation of this rare and pretty *Cyrtanthus* of the *Gastronema* section, which, according to Mr. Baker (*Amaryllidaceæ*, p. 58), is identical with *Cyphonema Loddigesianum*, *Herb.*, and an ally of *Cyrtanthus uniflorus*, from which it differs mainly by having spirally-twisted leaves. By the evidence of the specimen from which our illustration was taken, and which flowered with Mr. Jas. O'Brien at Harrow-on-the-Hill, too, it seems to have the power of bearing more flowers in an umbel than *C. uniflorus*. The flowers are creamy white, with crimson stripes down the segments, the colour suffusing the inner portion of each. It is a Cape bulb, requiring a cool greenhouse or bulb-pit slightly heated in winter.

KEW NOTES.

Hippeastrum procerum.—This is the *Amaryllis proceræ* of *Flore des Serres*, t. 2077—8, the *A. Rayneri* of *Bot. Mag.*, t. 5883, and the "Blue *Amaryllis*" of horticulturists. There is a group of it planted in a side bed in the succulent-house at Kew, two plants of which are now flowering. The figure in the *Botanical Magazine* does not do the plant justice, the colour of the flowers being a delicate shade of mauve with numerous reddish spots. The falcate, glaucous green, whitish-margined leaves, arranged distichously on a long stalk-like neck, 2 feet long in some of the plants, taken with the fact that the plant is ever-green, and the flower-segments regular, would almost suggest that this is no *Hippeastrum* at all. Has it ever been crossed with the *Hippeastrums* of the *H. aulicum* type? All who are interested in bulbs should see these plants, which are amongst the prettiest and most interesting bulbous plants flowered there in recent years. *Amaryllis proceræ* is a native of South Brazil, from whence it was first introduced into Belgium by M. Binot in 1863. It rarely flowers under cultivation.

Crinum Kirkii from the Kilimanjaro, a handsome stove species with large nodding, red-striped flowers on a short peduncle; *C. angustum*, still the handsomest of the large-flowered tropical species; *C. Moorei* var. *alba* and *C. americanum* are all in flower in the houses at Kew.

Ismene Amancaes, the beautiful yellow "Peruvian Daffodil," one of the most interesting of large growing South American bulbous plants which thrive in a slightly-protected border; *I. calathina* and several species of *Hymenocallis* are in flower now. The hardy *Ismenes* are worth looking after, as they are as well-behaved and free-flowering as the *Belladonna*, and very effective both in leaf and flower.

SOCIETIES.

ROYAL HORTICULTURAL Show at Chiswick.

JULY 11.—A special meeting of the Royal Horticultural Society was held on this date in the Society's Gardens at Chiswick, in good weather. There were the usual miscellaneous collection of Orchids and other plants and fruits, but the number of new plants was small; two *Liliums*, however, were exhibited in flower, to which reference will be seen below. In connection with this meeting was held the annual show of the National Carnation and Picotee Society (Southern Section), and the local Horticultural Society's show, the responsibility of which had been taken over for the present year by the Royal Horticultural Society, assisted by a local committee.

The whole show was disappointing, as the number



FIG. 16.—CYRTANTHUS HELICTUS.

Flowers creamy-white, with a crimson stripe on each segment.

inches. This practice is the one adopted, I understand, with the experimental trees at Chiswick, so that Mr. Fish's censure has a pretty wide application, while he does not himself appear to have any method at all. I do not write to defend "E. M." or the practices I have described, but simply to show the confusion of thought that exists on the subject. *Extension*. P.S.—I would like to know where and when Lindley has advocated summer-pinching himself in this country. E.

— If I hurt "W. L. C.'s" feelings (p. 723 of last volume of *Gardeners' Chronicle*), by accusing him of having misconstrued my words, I am sorry. I did not mean to be uncourteous, as he points out a discussion by practical men is instructive. But "W. L. C." will excuse me if I again point out to him how he misquotes (p. 749) what I did say on p. 666. By the addition of the words "old spurs" he renders the quotation a totally misleading one. I challenge him to point out in the quotation he gives, where I use the words alluded to. If he had

follow. With pleasure I reply to "W. L. C.'s" last inquiry relating to wall trees, &c. Peach trees I relieve of all unnecessary shoots when disbudding, and when they are but a few inches long, if by chance a few are left they are removed when the shoots are tied to the wires directly after the stoning, and before the fruit begins to colour. I never pinch the shoots of these trees to induce the formation of fruit spurs. I would ask "W. L. C." if he pinches the shoots with that intent? Apricots are not cultivated in our garden, nor have we any espalier-trained trees—only cordons, horizontally, and fan-trained trees against the walls, and a good many bushes and standards, but no formally-trained pyramids, as I do not see the use of them. Regarding those trees quoted which are wall-trees, I relieve them of superfluous shoots in June, for the purpose named (p. 578), that is, of admitting light, air and wind to the branches, but not with the idea as I pointed out on p. 666, that these pinched-back shoots in June will form spurs at once, and give fruit the following year, because I know such

of exhibits was not nearly so large as the entries led the committee to expect. The Carnation show also was not more than average in its quantity or quality.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. Jas. Walker, Geo. Stevens, Chas. E. Shea, Thos. Godfrey, W. C. Leach, R. B. Lowe, Chas. Noble, Robert Owen, Chas. Jeffries, J. H. Fitt, and Frank Ross.

Messrs. J. Veitch & Sons, Exotic nurseries, Chelsea, showed *Ferraria antherosa*, an Iridaceous plant with brown spots on a cream-coloured ground, of interest chiefly for its curious form, and the peculiar habit of growth. It is a Cape plant, figured in *Bot. Mag.* in 1804, t. 751, but this plant was, we are told, introduced from West Australia (Award of Merit). *Lilium* species from Japan, of a height of 1½ to 2½ feet, white, in form between auratum and longiflorum (First-class Certificate). It is identical with one shown by Dr. Wallace. Another good plant was *Pitcairnia amaryllidifolia*, with erect green channelled leaves, having a grey tomentum on the lower surface; flower shaft 2 feet high, furnished with clasping bracts; head of bloom 6 inches high, of a light scarlet tint. *Begonia decora*, with small oblique foliage, 3 inches high, brown in colour, with light green veins and ribs, and a good panful of *Strobilanthes Dyerianus* were also shown.

Messrs. Chas. Lee & Son, of Hammersmith and Feltham, staged a group of hardy ornamental shrubs, including a *Ginkgo adiantifolia*, with yellow variegated leaves, and *Quercus pedunculata*, with white variegation (Silver-gilt Flora Medal). A small group of *Begonias* (tuberous), in 5 inch and 6-inch pots, was sent by Messrs. H. Cannell & Sons, Swanley, Kent; they were from seed sown last February, and had now commenced to throw very good blooms.

From M. V. Lemoine, Nancy, were sent a plant each of fibrous-rooted *Begonias*, from 9 inches to 1½ foot; *Bajoensis*, white and pale pink blossoms; B. Illustration, rosy-red flowers; B. Sieberiana, pink; B. Abundance, B. Diadem, carmine; B. La France, rosy-red; B. Schmidtii hybrida rosea, pale pink; and B. S. h. alba. They were all very pretty, useful varieties.

Messrs. Wallace & Co., Colchester, obtained a First-class Certificate for the *Lilium* from Japan above mentioned, probably a garden hybrid, most like auratum in form, but pure white, excepting green veining; the plants shown were about 15 inches high, and had three blooms on a stem. We do not give the name attached to the plants, as the species is not yet determined.

Mr. Anthony Waterer, Knap Hill Nursery, Woking, sent sprays of his variety of *Spiraea Bumalda*, called "Anthony Waterer," very much deeper in colour than the type, and which will make a very effective plant either for the border or for cutting from.

Messrs. J. Laing & Sons, Forest Hill, exhibited a *Dracæna indivisa aurea variegata*. This is a very pretty table plant; with yellow veining in the leaves (Award of Merit); *Caladium Baronne de Maimore*, a very telling variety, with leaves of green and white, and exceptionally deep red veins (Award of Merit). *Begonia Sunbeam* is a large single, orange-yellow; and B. Lady Balfour of Barleigh, a very deep double bloom of golden-yellow. Also a basket of *Lobelia Lewry's Beauty*.

A very fine and tastefully-arranged group of Ferns and foliage plants was that staged by Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton; the group included many interesting plants, all well-grown; *Adiantum lunulatum*, *Gymnogramma schizophylla gloriosa*, *Adiantum Farleyense*, *Pteris Victoria*, and some well-coloured *Crotonas*, helped to brighten up the group (Silver-gilt Flora Medal). On p. 61 of the present issue we give an illustration of the end of a fern house at Mr. May's Nursery, with *Woodwardia radicans* right in front, and a specimen of *Platyserium alcorni* hanging from the roof.

Messrs. Sutton & Sons, Reading, contributed a group of plants representing varieties of *Begonia semperflorens* which has been raised at this establishment. They were exceptionally well-grown plants in about 6-inch pots, densely covered with bloom, and are extremely pretty for window and house decoration, as well as for outside beds, where the leaves of some of the varieties become coloured. Reading Snowflake is pure white, with rather large green leaves; and the best for bedding would be one called Crimson King, an effective but rather light crimson—the foliage, when out-of-doors, also assumes colour. Duchess of Edinburgh is pale rose and white, and Duchess of York a more decided rose. Coral Gem is deep flesh in colour. Some new

varieties of *Achimenes* and Bedding Stocks were also included in this group (Silver Flora Medal).

Messrs. B. S. Williams & Son, Upper Holloway, London, N., staged a group of stove foliage plants, including some very fine *Crotonas*, *Palms*, *Dracænas*, *Caladiums*, &c., as well as a few *Orchids*, such as *Brassavola Digbyana*, *Cypripedium Stonei*, *Cattleya Mendellii*, *Thunia Bensoniæ alba*, &c. (Silver Flora Medal).

E. H. Watts, Esq., Devonhurst, Chiswick, was given a Bronze Medal for a group of six large Ferns of the common exotic species (Bronze Banksian Medal).

Messrs. Hugh Low and Co., Clapton Nursery, London, N., were awarded a First-class Certificate for a new Lily, *L. Lowii*. Upon the specimen shown were borne two flowers, upon a slender stem about 3½ feet high. The petals were about 1½ inch wide, recurved 1½ inch at tip, white, with minute violet-crimson spots. Leaves very narrow, 2½ inches long.

G. H. Cammel, Esq., Brookfield, Hatherage, showed flowers of *Alstromeria aurantiaca*, very bright orange, the two upper petals marked with chocolate (Award of Merit).

Sprays of *Cytisus capitatus*, *C. nigricans*, and of *Colutea arborescens purpurea*, described as a new hardy shrub, were from Messrs. R. Veitch & Son, Exeter.

Messrs. Laxton Bros., Bedford, sent blooms of a new Sweet Pea, called Princess May, a rather large heliotrope coloured variety.

The variegated form of *Nicotiana glauca*, which was shown at the Ghent Quinquennial by M. Sallier Fils, Neuilly, Paris, was exhibited by him on this occasion. In a mass, it might be effective, but the variegation is not very decided. An Award of Merit was made.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Sec.), Dr. M. T. Masters, F.R.S., Chas. Pilcher, and E. Hill.

The labours of the Orchid Committee, when the show is held at Chiswick, are always lighter than at the Drill Hall, and on the occasion under notice there were but few striking exhibits.

Messrs. F. Sander & Co., St. Albans, staged a small group of good things, among which *Cypripedium* × *Massaianum* (superciliare ♀, *Rothschildianum* ♂) was the most remarkable, being the first cross with *C. Rothschildianum*. It had the stout hairy scape of *C. Rothschildianum*, and distinct traces of its ample striped floral bract. The flowers were large, the upper sepal white, closely striped with lines of chocolate-red, the broad, deflexed, ciliolate petals creamy-white, tinged with green in the veining, and regularly and profusely spotted with dark purplish-crimson; pouch large, tinged on the face with rose (Award of Merit). Messrs. Sander also showed plants of *C. × Umlaufianum* (insigne Chantini ♀, *Lawrenceanum* ♂), *C. Youngianum*, with pretty *Aërides* *Pacotianum*, resembling a stout form of *A. Houlettianum*; two specimens of the white *Rodriguezia pubescens*, with about twenty spikes each; the clear rose-coloured *Cattleya Gaskelliana*, Cooke's var.; *Brassia Lanceana longissima*, four dissimilar plants of the pretty *Trichocentrum tigrinum*, a bright form of *Lælio-Cattleya* × *Schilleriana*, the handsome *Epidendrum vitellinum auratum*, the rare scarlet and yellow *Renanthera matutina*, *Cattleyas*, &c.

Messrs. Hugh Low & Co., Clapton, E., also staged a neat group, in which were the fine white *Stanhopea Amesiana*, some very handsome forms of *Cattleya Gaskelliana*, one of them almost pure white; the new and pretty *Aërides J'Ansoni*, *Cattleya Eldorado alba* and *C. E. splendens*, *C. Schilleriana*, *Epidendrum nemorale*, *Dia grandiflora*, *Oncidium lanceanum*, *Angræcum articulatum*, *Vanda Kimballiana*, *Rhyncostylis guttata*, &c.

Thos. Statler, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed *Cypripedium Stonei Cannartianum*, a very fine form, in which the face of the large dorsal sepal is white, but showing through it the rich dark crimson of the outer surface; the petals are broader than in the type, cream-white, with one row of chocolate spots up the centre, the extreme halves being entirely of a dark reddish purple (Award of Merit). Mr. Statler also showed a flower of a fine form of *Cattleya Brymeriana*, a spike of *Lælio-Cattleya* × *Amesiana*, and a plant of the pretty orange-scarlet *Lælia monophylla*.

Walter C. Clark, Esq., Orleans House, Aicburth Drive, Sefton Park, Liverpool (gr., Mr. T. Jones), sent a three-flowered spike of a good form of *Cattleya Rex*, with the information that it was one of two

borne by the same plant, which, although showing improvement every year, has never made a root in this country. Messrs. Lewis & Co., Chase Side, Southgate, N., exhibited *Cattleya Gaskelliana Southgatensis*, a very pretty light variety; and a *Cypripedium* × *Bradshawianum*, a variety closely resembling *C. × radium* (*Spicerianum* × *Lawrenceanum*). And in a group of miscellaneous plants, Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Holloway, N., had the striking fringed *Lælia Digbyana* and *Odontoglossum Harryanum*, *O. hastilabium*, *Cypripedium superbiens* Demidoff var., *Epidendrum nemorale*, *Lycastes*, &c.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. J. Cheal, S. T. Wright, W. Bates, F. Q. Lane, Geo. Wythes, G. Taber, W. Warren, T. F. Rivers, P. C. Veitch, G. Reynolds, Harrison Weir, H. Balderson, G. H. Sage, W. H. Divers, A. Dean, and J. Willard.

A collection of fruits exhibited by Mr. Leach, gr. to the Duke of Northumberland, Albury Park, included some good Black Hamburg Grapes, two dishes of Grosse Mignonne Peach (large), a basket of Mrs. Osborne Raspberry, and branches of Plums River's Early Prolific, Early Orleans, and Bradley's King of Damsons.

Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esher, had two dishes of Royal George Peach, and a dish of Elruge Nectarine and Violette Hative. These latter were exceedingly high-coloured and good; also six large fruits of Ponderosa Tomato (Cultural Commendation).

Messrs. T. Rivers & Son, Sawbridgeworth, had a very fine collection of orchard-house fruit. Princess of Wales Peaches, very large; and a seedling Peach, of which twelve good fruits were shown, were very pretty, Apricot coloured. Early Rivers Peach, Early Rivers Nectarine, Hales' Early Peach (very highly coloured); a collection of very fine Cherries, in about fifteen varieties, and the following Plums, all good: Grand Duke, Early Transparent Gem, Victoria, Monarch, Jefferson, and the small Stint Plum (Silver Knightian Medal).

Mr. J. Hudson, Gunnersbury House Gardens, staged six bunches of Black Hamburg Grapes, which had been cut from one Vine, in a 12-inch pot, and represented nine pounds six ounces of fruit (Cultural Commendation).

Messrs. J. Veitch & Sons, Chelsea, staged a very large collection of Gooseberries, including some 160 dishes. This is not a season for extra large Gooseberries, but some of them here were of excellent quality and size, and the general collection better than we should have expected, as in many localities great havoc has been made by red-spider. Some very fine Red and White Currants, a few dishes of Cherries, Raspberries, and Apples, were also shown (Silver-gilt Knightian Medal).

Mr. Thomas Berridge, Norwood Lodge, Southall, sent a plant of Tomato Norwood Lodge, to show its free-fruited qualities.

M. A. South, Esq., Neasden House, Neasden (gr., Mr. C. Payne), had a variegated Vine, bearing one bunch of half-grown berries in a large pot; the young shoots were a golden-yellow.

Messrs. Cooper, Taber, & Co., Ltd., Witham, Essex, sent pods and branches of Cooper's White-eyed Long-pod Bean, described as being a heavy cropper, tender, and having a better flavour when cooked than any other. No award was made.

Mr. Owen Thomas, gr. to Her Majesty, at the Royal Gardens, Windsor, showed six fine fruits of Royal George Melon, a hybrid from High Cross Hybrid, and Hero of Bath; the hybrid has red flesh. Also twelve very large fruits of Walburton Admirable Peach.

Seedling Melons also came from Mr. Jno. Crawford, The Gardens, Coddington Hall; and from Mr. Jas. Barkham, The Gardens, Longford House, Ryde, Isle of Wight.

Messrs. Hurst & Son, Houndsditch, E., exhibited fruits of Dunedin's Favourite Tomato; it is a medium-sized fruit, very heavy, has very few seeds, and is among the earliest to ripen.

Mr. J. Douglas again exhibited his seedling White Grape from Black Hamburg and White Muscadine.

NATIONAL CARNATION AND PICOTEE.

JULY 11.—The annual exhibition of this Society was held in conjunction with the committee meetings of the Royal Horticultural Society, in the Chiswick Gardens, on this date. We expected a

rather disappointing display, but were agreeably surprised to find a show not far below the average, the flowers not even small in size in most instances, and usually fine for colour, although run colours are only too common this season. The blooms showed few traces of the recent severely hot weather, and throughout the classes were filled, in many instances the competition running very close.

CARNATIONS.

These were placed first in the schedule, and the largest class was for twenty-four blooms, twelve to be dissimilar. The premier award was made in favour of Mr. J. Douglas, Great Geries, Ilford, who showed apart for several fine unnamed seedlings, P.F. Charles Henwood, P.P.B. Harmony, a beautiful flower; S.F. Mrs. C. Graham, Tim. Bobbin, P.F. Mrs. Douglas, S.B. Ed. Adams, S.B. Robert Lord, S.B. Arthur Medhurst, and S.B. Ed. Rowan. The 2nd place was gained by Mr. Charles Turner, The Royal Nurseries, Slough, whose flowers, like those in the 1st prize stand, were remarkably fresh, and clear in colour. Again several seedlings were exhibited, and of much beauty were the blooms of P.F. Charles Henwood, R.F. Lady Mary Currie, S.F. Mrs. C. Graham, S.B. Dr. Hogg, P.F. Billy Henderson, P.P.B. Mr. Smith, P.P.B. Harmony, S.B. C. H. Herbert, besides other named kinds, all in good character; Mr. F. Hooper, Bath, was 3rd.

The next class was for twelve blooms, distinct, and the London grower, Mr. Martin Rowan, of Clapham, was 1st. His box contained the Premier Carnation in the show, a very large and well-developed bloom of S.B. Robert Houlgrave, and other kinds of note were S.F. Sportsman, C.B. Edward Rowan, C.B. J. D. Hextall, C.B. J. S. Hedderley, P.F. Gordon Lewis, and R.F. Rob Roy. This was a good place, considering that the competition was very keen; Mr. Arthur R. Brown, Handsworth, Birmingham, was a good 2nd, and noteworthy amongst his smooth flowers were S.B. Robert Houlgrave, R.F. Lady Mary Currie, P.F. Billy Henderson, S.B. Admiral Curzon, and C.B. Fred Phillips; Mr. George Chaundy, Oxford, was 3rd. The best six distinct flowers were those from Mr. J. J. Keen, Southampton, who had clear-coloured fresh flowers of Robert Houlgrave, S.F. Alisemond, and Squire Potts; Mr. Douglas came 2nd, and his flowers were of excellent quality; Mr. A. J. Sanders, gr. to Viscountess Chewton, Cobham, 3rd.

The classes for single blooms were interesting, but there is not much beauty in such exhibits.

PICOTEES.

These were very pure and distinct in their markings generally, and made a great display, the flowers in the winning stands were of conspicuously high quality. As with the Carnations, the most important class was for twenty-four blooms, in not less than twelve distinct varieties. The principal winner was Mr. Chas. Turner, who had a surprisingly fine box, in which the chief kinds were—L.R.S.E. Lady Holmesdale, Liddington's Favourite, still the best of the light rose and scarlet-edged class; L.P.E. Sylvia, L.P.E. Esther, L.R.E. Brunette, L.R.S.E. Madeleine, L.R.S.E. Little Phil, L.P.E. Zerlina, and L.R.E. Norma. Mr. Douglas was 2nd, and in his stand we noted as of special excellence, Liddington's Favourite, and a new seedling named Ganymede, a heavy red-edged Picotee, and the same exhibitor had a number of highly-promising seedlings. The 3rd place was won by Mr. F. Hooper.

The competition was exceptionally keen in the class for twelve blooms, in which Messrs. Thomson & Co. came 1st; they showed well the varieties L.S.E. Mrs. Sharp, L.P.E. Zerlina, L.R.E. John Smith, Liddington's Favourite, L.R.S.E. Little Phil, L.P.E. Amy Robsart, L.R.E. Thomas William, L.R.E. Brunette, L.R.S.E. Campanini, and L.R.S.E. Mrs. Burnett. The 2nd prize box of Mr. A. R. Brown containing many good blooms. Mr. Rowan 3rd.

For six blooms, distinct, Mr. A. W. Jones, Handsworth, Birmingham, was 1st, with L.R.S.E. Mrs. Payne, and this was judged the premier bloom in the show. Others exhibited were L.S. Norman Carr, L.R.S.E. Little Phil, Campanini, belonging to same section; L.P.E. Clara Penson, and L.R.E. Brunette. An excellent stand of flowers came from Mr. J. P. Sharp, Birmingham, and was placed 2nd; Mr. A. Greenfield, 3rd.

Two classes were set apart for yellow grounds, the largest being for twelve blooms, distinct, the 1st prize going to Mr. Charles Blick, gr. to Martin Smith, Esq., Hayes Common, Kent; the flowers were exceptionally full, and of very rich colour. The most conspicuous were Stadrath Bouel, Dorothy, Remembrance, Annie Douglas, Cowslip (a pleasing

name), Optimus, Chrysodora, and Almira. Mr. C. Turner was a good 2nd, and in his stand were fine flowers of Almira, Annie Douglas, Agnes Chambers, and Arthur Barrett; Mr. J. Douglas was 3rd; Mr. Chas. Phillips and Messrs. Thomson & Co., 4th and 5th respectively; Mr. Geo. Chaundry, 6th; and Mr. Thos. Ansties, 7th. For six, Mr. A. W. Jones was 1st, with Mrs. Robert Sydenham, Almira, Victory, Lord Rendlesham, and Stadrath Bouel. The latter variety was shown well throughout. Mr. A. R. Brown, who was 2nd, had it in fine character; Mr. Sydenham, 3rd; Mr. Charles Harden, 4th; and Mr. F. Nutt, Southampton, 5th.

The classes for single blooms deserve high praise for the purity and fullness of the flowers. Five prizes are given in each class, and for heavy red-edged, Mr. Turner 1st (Morna); Mr. A. R. Brown, 2nd (Brunette); Mr. C. Phillips 3rd and 4th (Morna); Mr. J. Douglas 5th (Ganymede).

For light-edged, Mr. A. W. Jones 1st (Mrs. Gorton); Mr. Rowan 2nd, same variety; Mr. Jones 3rd (Thos. William); Messrs. Thomson & Co. 4th, same variety; Mr. Brown 5th, same kind. In the purple class, for heavy-edged, Mr. J. J. Keen 1st (Amy Robsart); Mr. Jones 2nd, same kind; Mr. Rowan 3rd (Muriel). For light-edged, Mr. Rowan 1st (Amy Robsart)—we supposed this kind may be classed under both headings; Messrs. Thomson & Co., 2nd (Edith); Mr. Brown 3rd (Pride of Leyton); Mr. Jas. Douglas 4th (Ann Lord); Mr. J. Keen 5th (Pride of Leyton). For heavy rose-edged, Mr. A. W. Jones 1st (Campanini); Mr. C. Turner 2nd; and Mrs. Payne 3rd (Little Phil). For light, Mr. A. R. Brown 1st and 3rd (Mrs. F. Ricardo); Mr. C. Phillips 2nd (Ethel); and 4th (seedling); Mr. J. J. Keen 5th (Ethel). In the heavy scarlet-edged class, Mr. A. W. Jones 1st (Mrs. Sharp), and Messrs. Thomson & Co. 2nd, Mr. Jas. Douglas 3rd, Mr. J. J. Keen 4th, with all the same variety. For light-edged, Mr. A. W. Jones 1st (Liddington's Favourite), Mr. Turner 2nd, Mr. Brown 3rd, and Mr. J. J. Keen 5th, all with this kind; Mr. Douglas 4th, with Seedling.

Selfs and Fancies.—These were largely exhibited. The best twenty-four blooms, not less than twelve distinct varieties, came from Mr. Turner, who had beautiful specimens of Janira, Gladys, Germania, Dorothy, Rose, Unique, King of Scarlets, Terracotta, Master Fred, Mrs. Wilson, Romulus, Marine Murray, White Lady, The Governor, Ruby, Duchess of Sutherland, and Stadrath Bouel; the 2nd place was well-filled with flowers from Mr. Jas. Douglas, including many of his own raising; whilst Mr. Charles Blick was 3rd; and Mr. F. Hooper, Bath, 4th. The chief award for twelve, distinct, was made in favour of Messrs. Thomson & Co., the finest blooms being those of Germania, Attraction, pink; King of Scarlets, Mrs. Reynolds Hole, and Mrs. Fred. White; Mr. A. R. Brown was placed 2nd, for excellent blooms; Mr. C. Phillips, 3rd; Mr. G. Chaundry, 4th. Good competition took place in the class for six, distinct, the 1st prize being awarded to Mr. A. W. Jones for fine flowers of Norman Carr, Stadrath Bouel, Germania, Almira, Lord Rendlesham, and Gladys. The other prize-winners were Mr. J. F. Kew, Southend, 2nd; Mr. J. Jordan, gr. to R. Hart, Esq., Sutton, Surrey, 3rd; and Mr. T. E. Henwood, Reading, 4th.

Pot Plants.—Only one class was provided for these, and a white card round the blooms was forbidden. The awards were given for cultural excellence, and a liberal show of flowers. The 1st prize was awarded to Mr. J. Douglas, who had plants of good growth, well-flowered, and the flowers of self colour. Mr. C. Turner 2nd.

For six blooms, open only to those who have never won a prize, Mr. C. Harden, Dover, was 1st, and his flowers were distinctly creditable. Harmony was well shown.

Vases, Sprays, &c.—Three classes were set apart for this form of decoration. The best vase of Carnations or Picotees, only one kind to be used, of either section, Mr. Jas. Douglas 1st, Mr. E. C. Goble 2nd, and Messrs. Thomson & Co. 3rd. Whilst for three sprays, very creditable were those from Messrs. Thomson & Co., who were 1st; Mr. J. Walker, Thame, 2nd; Mr. C. Gotte, 3rd; and Mr. Jas. Douglas, 4th. Mr. Douglas had the best button-holes of Carnations, and was closely followed by Messrs. Thomson & Co.

Mr. Martin Smith's Prizes.—Three classes were set apart for those exhibits in competition for Mr. Smith's prizes. Certain rules were to be followed, and the flowers were to be gathered only from plants that had been "wintered without protection in the open border, and staged without 'dressing,' and

exactly as they were cut from the plants." A burst calyx to be a disqualification. The first class was for the best border or self-coloured Carnations, not less than twelve trusses. Mr. Sage, gr. to the Earl of Dysart, Ham House, Twickenham, had a bunch of scarlet self, named Jim Smyth; it is a showy and handsome flower, well worthy of the award. Mr. E. C. Goble, 2nd; Mr. J. Douglas, 3rd; and Mr. W. H. Divers, Ketton Hall Gardens, 4th. The next class was for six varieties of self-coloured Border Carnations, not less than six trusses of each variety. This made a lovely display, and the 1st prize went worthily to Mr. J. Douglas; Mr. J. Walker, Thame, 2nd; Messrs. Thomson & Co., 3rd; and Mr. W. H. Divers, 4th. The following class admitted flakes, bizarres, and fancy kinds, Carnations and Picotees; Mr. J. Douglas had a charming assortment, and was 1st; Mr. F. Hooper, 2nd; Mr. W. H. Divers, 3rd.

A large number of First-class Certificates were given, and we enumerate the following. Owing to the careless way in which the flowers are placed about at these shows, and with no official list published, it is impossible to enumerate kinds thus honoured. The following were from Mr. C. Blick, who had the major portion of seedlings. Of fancy Picotees, good kinds are George Cruikshank, buff yellow ground, with heavy markings of scarlets; Sirius, a fancy Picotee, similar ground, bright scarlet splashes; Cardinal Wolseley, yellow ground Picotee, better than Victory, fuller, richer, though similar; The Dey, yellow ground Picotee, with heavy rose edges; Rosa Bonheur, a beautiful scarlet flake; Tom Sayers, buff, with stripes not very deep of crimson—a good Carnation; Bendigo, self purple—very handsome Carnation; Andray Campbell, 'yellow self variety; Sir Gauvain, similar to Mrs. Reynolds Hole, of apricot tone; Mephisto, deep crimson-maroon self; The Patriot, a splendid addition to the crimson bizarre class; Duke of Orleans, yellow self, very fine; Ellen Terry, white, pure, and full; and Hayes' Scarlet, scarlet, a brilliant colour, self. A seedling raised by Mr. Douglas, and called Agricola, was shown by him in winning stand; it is a superb purple flake.

Miscellaneous.—Mr. C. Blick, gr. to Mr. Martin Smith, had a large group of seedlings and other kinds, well staged in loose bunches; and a large collection of border kinds, cut from the open air, came from Mr. T. S. Ware, Hale Farm Nurseries, Tottenham (Silver Medal). Wm. Robinson, Esq., Gravetye Manor, East Grinstead, showed a beautiful self white Carnation, named Alice; the flowers were not split, and the large bunch was arranged as we should like to see all Carnations at shows.

CHISWICK LOCAL SHOW.

JULY 11.—This exhibition, which was held in the grounds and under the management of the Royal Horticultural Society, was not so large a one as might have been expected. Various reasons were given for this, and it is hoped that a better exhibition will be held next year.

The 1st class was for a group of plants arranged for effect upon ground not exceeding 100 square feet, open. A very fine group was staged by Messrs. W. Fromow & Sons, Sutton Court Nursery, Chiswick, some good Lilliums, Crotons, Pancratiums, Cocos Weddelliana, with some larger Palms at the back, were very tastefully arranged.

In the class for amateurs for a group of plants arranged for effect, not to exceed 75 square feet, the successful exhibitor was E. H. Watts, Esq., Devonhurst, Chiswick (gr. Mr. Porteous). The group was not very rich in plants, but with a ground-work of Adiantum Ferns and some Lilliums, Palms, Caladiums, &c., an interesting group was arranged. Dr. Take, Chiswick House (gr. Mr. H. Aspland), was 2nd.

Mr. C. Turner, Royal Nurseries, Slough, took 1st prize for a group of Pelargoniums to cover not more than 100 square feet, with a group of plants in very fair condition.

For the Silver Cup offered for the best group of twelve tuberous Begonias, distinct, arranged with small flowering plants, a very exceptional collection was staged by Sir Charles Pigott, Bart., Wexham Park, Slough (gr. Mr. J. Ford). The plants were large, in 9-inch and 10-inch pots, all very good; but one single variety of deep velvety-crimson, large, and of good substance, attracted more than ordinary attention.

The best Coleus, in six plants, came from A. Russell, Esq., Woodlands, Isleworth. Col. the Hon. W. P. Talbot, Glenhurst, Esher (gr. Mr. C. J.

Waite), brought the best six hardy Ferns from amateurs, showing pretty good specimens in 10-inch pots. T. E. H. Hodgson, Esq., Ranelagh House, Grove Park (gr., Mr. W. H. Davies), took 1st for six plants of Gloxinias, with very fair specimens.

Twelve bunches of hardy herbaceous perennials were best shown by Earl Dysart, Ham House, Richmond (gr., Mr. G. H. Sage), consisting of *Heliopsis patula*, *Eryngium Olivierianum*, *Echinops Ritro*, *Coreopsis lanceolata*, *Gypsophila paniculata*, *Centaurea vars.*, *Helenium var.*, *Delphinium*, *Erigeron*, *Chrysanthemum maximum*, and *Statice speciosa*; Dr. Tukey, Chiswick House, was 2nd.

The 1st prize for eight bunches, was taken by Miss R. Debenham, St. Peter's, St. Albans, *Lathyrus latifolius albus*, *Eryngium amethystinum*, and *Phlox decussata*, were very good.

Stove or greenhouse flowers in twelve bunches, were best shown by E. H. Watts, Esq., Devonhurst, Chiswick (gr., Mr. Porteous), and Dr. Tukey was 2nd. T. E. Hodgson, Esq., Ranelagh House, Grove Park (gr., Mr. W. H. Davies), staged the best twelve bunches of zonal Pelargoniums, but these were only fair.

ROSES.

The 1st open class for twenty-four Roses, distinct, was competed for by several exhibitors, but the general character of the blooms was not above fair. Messrs. Harkness & Sons, Bedale, Yorkshire, were 1st, and in this stand there were some good blooms, such as Marie Baumann, Sénateur Vaisse, Louis Van Houtte, Mons. E. Y. Teas, Etienne Levet, &c.; Mr. George Mount, The Rose Nurseries, Canterbury, was 2nd, but his flowers were small; the 3rd place was taken by Mr. B. R. Cant of Colchester.

Messrs. Harkness & Son, Bedale, Yorks, won the 1st prize and the Silver Cup for twenty-four Roses, distinct, three trusses of each, in this class also were some good blooms: Horace Vernet, La France, Earl of Dufferin, Alfred Colomb, Duchess de Morny, Marie Baumann, A. K. Williams, Exposition de Brie, Gustave Piganeau, and Mrs. J. Laing were the best. Mr. B. R. Cant, who had twice won the cup in previous years, was 2nd; his stand, however, contained some very weak blooms, whilst in some instances the quality was average.

The floral decorations were not numerous, Miss Lilian Hudson being the only competitor in the classes for a stand of flowers for table decoration, and a stand for hall decoration. In each case the arrangement was commendable, and 1st prizes were awarded.

A group of excellent Gloxinias was staged for exhibition by Mr. E. Hythe, Hillcrest, Castle Bar, Ealing (gr., Mr. A. Jones).

There were a good number of classes for cottagers, and these brought some very fair produce; window plants and boxes were good, and vegetables fairly represented. Mr. A. Farmer, Blenheim, Road, Gunnersbury, was the 1st.

FRUIT.

Mr. Thos. Osman, The Gardens, Ottershaw Park, was 1st for two bunches of Black Grapes, with good Black Hamburg; 2nd, Col. the Hon. W. P. Talbot, Glenhurst, Esher (gr., Mr. Waite), with smaller, but better-finished bunches.

In the class for White Grapes, Mr. Osman was again 1st, showing Mrs. Pearson; W. A. Louth, Esq., Neasdon House, Neasdon (gr., Mr. C. Payne), was 2nd, with Muscat of Alexandria; 3rd, E. H. Watts, Esq., with Duke of Buccleuch. The best dish of Strawberries came from J. T. Hopwood, Esq., Ketton Hall, Stamford (gr., Mr. W. H. Divers), who had British Queen.

A. Pears, Esq., Green Bank, Isleworth (gr., Mr. Debnam), was 1st for six Peaches with large, well-coloured fruit of *Violette Hâtive*; Sir Chas. Pigott was 2nd, with large fruits of Barrington. Nectarines were shown best by the Honourable W. P. Talbot, Glenhurst, Esher, who had very highly-coloured fruits of *Elruge*; Sir Charles Pigott was 2nd, with smaller fruits of same variety; and Earl Dysart 3rd, with Victoria.

VEGETABLES.

Potatoes were of very fair quality, the best three dishes coming from the Hon. W. P. Talbot; Mr. A. Farmer, Railway Cottages, Blenheim Road, Gunnersbury, was 2nd; and Earl Dysart, 3rd. Earl Dysart showed the best Tomatoes in three dishes, and had very fine fruits; W. A. Louth, Esq., was 2nd.

Two good Cucumbers, Sutton's Peerless, obtained 1st prize for T. E. H. Hodgson, Esq., Ranelagh House; and Dr. Tukey was 2nd.

The best six dishes of vegetables for Messrs. Carters' prize was staged by Colonel the Hon. W. P.

Talbot. He had good Globe Artichokes, Carter's Perfection Tomato, Carter's Ashtop Flake Potato, Carter's Holborn Onion, Carter's Summer Favourite Carrot, and Carter's Telegraph Pea. W. A. Louth, Esq., was 2nd; and A. Russell, Esq., Woodlands, Isleworth, 3rd.

Mr. H. Balderson, Corner Hall, Hemel Hempstead, took 1st prize in the class for three dishes of Peas, offered by Messrs. C. Sharpe & Co., Sleaford, Lincolnshire; Col. the Hon. W. P. Talbot 2nd, and Mr. T. Watkins, Grove House, Merrow, 3rd.

IPSWICH FLOWER SHOW.

JULY 5.—The annual summer show of the Ipswich and East of England Horticultural Society opened on the lawn of Christchurch Park on Wednesday, and proved one of the most successful exhibitions that the society has held.

The plants and flowers were well up to the general standard of the show, and Roses were particularly good. The fruit and vegetables were remarkably fine, considering the character of the season.

Roses made a fine show. The day is past for Mr. F. Cant, excellent grower as he is, to have matters all his own way. He, nevertheless, held his own well in the largest class, showing a uniformly excellent (and in no other sense uniform) collection, though the most perfect individual bloom in the show was, perhaps, the Horace Vernet in the 2nd prize exhibit. In the other two open classes, Messrs. Prior were to the fore, with Mr. Cant 2nd. In the former of them points were equal as to the quality of the blooms, but Messrs. Prior won on the arrangement. In the amateurs' twenty-fours, Rev. H. A. Berners showed a beautiful collection, including a John Bright, a variety which the previous day took the Silver Medal at Diss for the best H.P. bloom in the show. In the twelves class, the rev. gentleman was beaten by Mr. W. W. Parsons, a Woodbridge exhibitor, who made a very beautiful show. In the Tea Roses, Mr. Berners was a good 1st. Possibly, had the show been a week earlier, the show of Roses all round would have been stronger, but as it stood it needed no apology.

The zonal Pelargoniums made a brilliant display, Mr. R. Austin, sen., carrying off premier honours. Mr. C. Jacobi must be complimented upon the splendid collection of herbaceous flowers he was enabled to put in, which far outshone anything else in the class. Mr. G. Gilbert also showed a good collection in the class for twenty-fours.

The bouquet prizes were carried off by Mr. O. G. Orpen. The ball-room bouquet was a pleasing arrangement of De Watteville Roses; and the bridal bouquet, white Roses and Gladioli.

The 1st prize for a basket of cut flowers fell to a new exhibitor, Miss C. Elmslie, of Whitton, after a close competition with Mrs. Orpen.

Taking the classes in the order in which they came, there was not much competition for stove and greenhouse plants, in which Mr. George Gilbert had matters all his own way. The next class for six ornamental foliage plants was also headed by Mr. Gilbert, Mr. Whitfield King coming 2nd. Mr. Gilbert was more strongly represented in a handsome 30-foot group of Palms and zonal Pelargoniums, for which the judges awarded a special prize, and in a remarkable collection of seedling Coleus studded over various vacant spots in the tents. These were a fine collection, illustrating in an extraordinary degree the strong varieties of colour which the plant is capable of developing. In the amateur class for group of plants arranged for effect, Mr. Whitfield King was finely represented. The Orchids and Lilies were grandly developed.

The institution of a class of smaller groups for amateurs employing not more than one gardener was this year very successful, and attracted some capital entries. The judges had not much difficulty in singling out Mr. Webster Adams's group, which was a happy combination of brilliancy of colour and lightness of arrangement, with a singularly neat and pretty edging of *Selaginella denticulata*. Dr. Casley's group, which was 2nd, was original in style.

The show of fruit and vegetables would challenge comparison with any show of the year. The Strawberries, considering how prematurely advanced the season is, were very fine. Mr. J. Woods, Woodbridge, and Mr. Alexander Fraser were the 1st prize-winners in the classes for single varieties, whilst Lady North took a similar award for a grand collection. There were also some fine dishes of Cherries shown by Mr. J. A. Burness and Mr. R. Austin, and excellent Peaches were sent in from Woolverstone Hall. The

collections of vegetables were good, and Tomatoes very well grown, and there were some excellent Peas and other vegetables.

The cottagers' exhibits were not so numerous as might have been expected. The time is already passed for most of their summer exhibits. *Suffolk Chronicle*, July 8.

EALING HORTICULTURAL.

JULY 5.—By permission of C. Bartholomew, Esq., the twenty-ninth annual exhibition of this society took place in the grounds of Castle Hill House, Ealing. In some respects the show was an improvement on its predecessors.

For a group arranged for effect, 12 feet by 6 feet, 1st honours were taken with a remarkably pretty arrangement from Mr. W. Roberts, gr. to J. Harris, Esq., Braemar, *Dendrobium calceolus major* being well flowered. 2nd, Mr. C. Long, gr. to E. P. Oakshott, Esq., a very creditable exhibit. Group, 7 feet by 5 feet: 1st, Mr. C. Edwards, gr. to W. Owen, Esq., Castle Bar, a good lot; 2nd, Mr. T. Wiseman, gr. to J. Butler, Esq., North Common Road. Six fine foliage plants: 1st, Mr. C. Long; *Crotons* well coloured.

Four fine-foliaged plants: 1st, Mr. W. Roberts; the latter also taking 1st place for six well-grown Ferns. For a specimen stove or greenhouse plant in flower, the premier position was accorded to Mr. C. Long, for a finely-flowered *Allamanda*; 2nd, Mr. C. Edwards, for a well-grown and flowered *Clerodendron Balfourianum*. Specimen stove or greenhouse plant remarkable for handsome foliage: 1st, Mr. A. Denison, gr. to T. A. Gledastanes, Esq., for a grand *Cycas revoluta*; 2nd, Mr. W. Roberts, for a good *Lantana borbonica*.

Foliage Begonias were well shown by Mr. J. Wickenden, gr. to R. Dawes, Esq., and Mr. C. Edwards. The four Fuchsias which gained Mr. C. Long 1st honours were fine examples of cultural skill; good-flowered plants from Mr. W. Roberts took 2nd prize.

Six flowering Begonias: 1st, Mr. J. Beasley, gr. to A. Fraser, Esq., The Mount, fine examples; 2nd, Mr. C. Long. Excellently-flowered bedding Pelargoniums gained Mr. G. Wickenden 1st prize, who also took a similar position for *Coleuses*.

Interest centred in the class for eighteen cut Roses, not fewer than twelve varieties; the Gold Medal of the National Rose Society was taken for the fourth time with some good blooms considering the season, by Mr. C. Long; 2nd, Mr. C. Edwards, who had a bright fresh lot. Bunches of stove and greenhouse flowers were shown in grand condition by Messrs. A. Denison and W. Merridew.

Table decorations, as previously mentioned, were a feature. In the class for three stands or vases of flowers, there were seven competitors, the 1st prize, after long deliberation, going to a charmingly elegant arrangement from Mr. W. Merridew, gr. to F. Gerlach, Esq.; a very close 2nd indeed was Miss L. Hudson, Gunnersbury House. One hand-bouquet, 1st prize, a beautiful exhibit, Mrs. W. Roberts, North Common Road, the same lady taking similar honours for three elegant sprays. For a bouquet of Roses, Mr. W. Roberts, gr. to J. Harris, Esq., took 1st prize with an admirable arrangement.

Grapes—black and white, were well shown by Messrs. G. Wickenden and C. Edwards. For Messrs. Sutton & Sons' prizes for a collection of vegetables, the prize-winners were Messrs. C. Edwards and J. Beasley—both showing creditable productions.

The cottagers' show of vegetables and other produce was a good one, considering the extraordinary season.

Mr. G. Reynolds, gr. to the Messrs. Rothschild, Gunnersbury Park, had a strikingly beautiful group of foliage and flowering plants—*Crotons* grandly coloured. Mr. D. Cooper, gr. to E. M. Nelson, Esq., Hanger Hill House, also contributed a good group of similar plants; the same exhibitor likewise showing thirty finely-coloured fruits of *Waterloo Peach*, and fine samples of *Early Rivers Plum*. Mr. J. Hinkley, gr. to J. Chesham, Esq., The Mount, sent a fine lot of foliage and flowering plants; as also did Messrs. Fromow & Sons, Chiswick.

Messrs. C. Lee & Son, Ealing and Hammersmith, contributed a beautiful display of cut Roses in all the leading varieties; also a very effective group of hardy ornamental trees and shrubs. *Prunus Pisardi* was well shown, as well as *Cornus elegantissima variegata*, a fine form introduced by Messrs. Lee.

Mrs. H. B. Smith, Ealing, contributed, in her

usual tasteful style, some beautiful examples of table decorations.

A good seedling Tomato, named Norwood Lodge, that will doubtless be heard more of, was shown by Mr. T. Berridge, gr. to T. Unwin, Esq., Norwood Lodge, Southall. It is a cross between Hathaway's Excelsior and Large Red, very free, one plant, in a 9-inch pot, bearing ninety-five fruits.

The show was well managed by Mr. George Cannon, secretary.

BATH.

JULY 6.—The Rose show which was held at Bath in the Sydney Gardens on the above date, although it fell short of previous exhibitions in regard to the number and quality of the blooms staged, was as good as could be expected, and financially it was undoubtedly a success.

NURSERYMEN (OPEN).

There were only two competitors in the class for seventy-two varieties, single trusses, viz., Messrs. Harkness & Son, Bedale, Yorkshire, and Messrs. George Cooling & Sons, Bath, who took the prizes in that order. The Yorkshire exhibits being large, solid, and beautifully fresh, were easily 1st, and included, among others, capital blooms of Duchess of Bedford, Alfred Colomb, Pride of Waltham, Comte de Raimbaud, Dr. Andry, Charles Darwin, Marie Rady, Madame Verdier, Prince Arthur (in grand form), E. Andry, and Duke of Connaught; the best blooms in Messrs. Cooling's stands being Duchess of Bedford, Lord Beaconsfield, Victor Hugo, Duc de Montpensier, Alfred Colomb, Marquise de Castellane and Charles Lamb.

Thirty-six varieties, three trusses of each: Messrs. Harkness & Son being again easily 1st, with a uniformly good, well-shaped, fresh lot of blooms; Messrs. G. Cooling & Son were 2nd.

Eighteen distinct varieties, three trusses of each: 1st, Mr. G. Mount, Canterbury, his best blooms being Alfred Colomb, Maréchal Niel, Edith Gifford, Mrs. Laing, Prince Arthur, Her Majesty, and Ulrich Brunner, all being of good substance, fine form and fresh; Mr. Mattock, Oxford, was 2nd, staging, among others, good blooms of Lady Sheffield, Earl of Dufferin, and Mrs. John Laing.

Thirty-six distinct varieties, single trusses: Mr. Mount was again to the front with good all-round blooms.

Teas and Noisettes, eighteen varieties, single trusses.—1st, Messrs. Harkness & Son, staging very meritorious exhibits, the blooms being neat and fresh, consisting of (back row) Niphetos, Cleopatra (receiving the Silver Medal of the National Rose Society, given for the best Tea Noisette Rose in the show), Madame H. Jameson, Souvenir d'un Ami, Madame Hoste, Comtesse de Nadaillac, Francisca Kruger, Souvenir d'Elise, Madame de Watteville, The Bride, Ernest Metz, Souvenir de S. A. Prince, Caroline Kuster, Thérèse Levet, Edith Gifford, Catherine Mermet, Innocente Pirola, and Madame Bravy; Mr. Mount was 2nd.

AMATEURS.

Dr. Budd, Bath, was the only exhibitor of thirty-six varieties, single trusses, and eighteen varieties, three trusses of each, and he was very deservedly awarded 1st prize in each class for stands of bloom that it would be hard to beat at any show this year, Sultan of Zanzibar, Reynolds Hole, La France, Marie Baumann, Edith Gifford, A. K. Williams, Louis Van Houtte, Sir Garnet Wolseley, Longfellow, and Suzanne-Marie Rodocanachi being the most prominent.

Mr. Thomas Hobbs, Bristol, had the best stand of twenty-four varieties, single trusses; Mr. J. Parker having the 2nd best. The last-mentioned exhibitor was 1st for a stand of twelve blooms, distinct; Mr. Hobbs being 2nd, both staging creditable blooms for the season.

Teas and Noisettes.—Dr. Budd had the best stand of eighteen blooms, distinct varieties; Mr. Gray, Bath, having the 2nd best. Mr. J. Parker and Mr. Hobbs, 1st and 2nd for stands of twelve varieties; 1st and 2nd positions being accorded to Dr. Budd and Mr. Parker respectively for stands of six varieties, three trusses of each, all staging creditable blooms.

OPEN CLASSES.

Twelve single trusses of any Rose.—1st, Messrs. Harkness & Sons, staging grand blooms of Mrs. John Laing, one of which was awarded the Silver Medal of the National Rose Society, given for the best hybrid perpetual in the show; Mr. Mattock was 2nd.

Twelve single trusses of any yellow Rose.—1st,

Mr. Mount, with a dozen neat fresh blooms of Maréchal Niel; Mr. Gray taking 2nd place with same variety.

Twelve single trusses of any crimson Rose.—1st, Messrs. Harkness & Sons, with large fresh blooms of Gustave Piganeau.

For twelve single trusses of La France there was only one competitor, Messrs. Harkness & Sons, to whom the 1st prize was justly awarded. Messrs. G. Cooling & Sons secured chief honours in the class for twelve distinct varieties of garden decorative Roses, shown in bunches; only one entry.

Nine bouquets of Roses for the hand.—1st, Mr. Mattock; 2nd, Messrs. Cooling & Sons, both staging fine arrangements, composed of choice Tea and Noisette Roses in the bud state. Dr. Budd and Mr. E. T. Hill obtained 1st and 2nd honours in that order for six bouquets of Roses; and Mr. R. B. Cater, Bath, secured premier position for a basket of cut flowers, in the arrangement of which *Cattleya Gaskelliana*, *Dendrobium moschatum*, and *Aerides cylindricum*, were made the most of, intermixed with *Asparagus tenuissimus* and light grasses.

GROUPS OF MISCELLANEOUS PLANTS.

The most attractive feature in the show was one of three groups of miscellaneous plants, arranged for effect, at the lower end of the large tent in which the Roses were shown by Mr. Jas. Cypher.

Several classes were provided for tuberous Begonias and herbaceous plants, and a fine lot of plants and cut blooms were staged. Mr. J. B. Blackmore winning the Challenge Cup given by the Rev. E. Lascelles, Newton St. Loe, Bath, for the best twelve plants of tuberous-rooted Begonias, six single and six double-flowered.

Mr. Davis, Yeovil, and Mr. Cannell, Swanley, contributed several excellent stands of cut flowers of the Begonia.

ROSE SHOW AT MANCHESTER.

JULY 6.—An agreeable mode of enjoying the Royal wedding-day was offered by the proprietors of the Botanical Gardens. They advanced their usual July Rose Show a couple of weeks, and engaged the bands of the 14th Hussars and Manchester Artillery to play in the grounds all through the afternoon and evening. It was probably a fortunate thing that the event of the day provided an excuse for having the show of Roses instead of at a later date. The early summer, with its great heat and little rain, has played havoc with Roses all over the country, and many of the southern rose-growers wrote that they had no blooms to show. Under the circumstances, it was a matter of surprise that so many fine blooms as those shown on Thursday could have been brought together.

The Rev. J. H. Pemberton showed some beautiful specimens of A. K. Williams and A. Colomb; and Messrs. Croll, of Dundee, had a very beautiful display of the best-known kinds. The Roses shown by Mrs. Mellish were also of great beauty. The space which should have been filled by the Southern exhibitors was occupied by collections of hardy herbaceous plants shown by Mr. H. Brownhill, Sale; Messrs. Dickson & Robinson, Mr. F. Law, Sale; Messrs. Dickson, Brown, & Tait, and Messrs. Dicksons, Chester. A number of prizes offered by the Royal Manchester and Northern Counties Botanical and Horticultural Society were awarded as follows:—

Seventy-two distinct trusses: 1st, Messrs. Harkness & Sons, Bedale. Thirty-six distinct, three trusses of each: 1st, Messrs. Harkness & Sons. Eighteen Tea or Noisettes, three trusses: 1st, Messrs. D. & W. Croll, Dundee. Twelve Tea or Noisettes, single trusses: 1st, Messrs. Harkness & Sons. Twelve single trusses of any yellow Rose: 1st, Messrs. D. & W. Croll. Twelve single trusses of any white Rose: 1st, Messrs. Harkness & Sons. Twelve single trusses of any crimson Rose: 1st, Messrs. Mack & Son. Three bouquets of Roses: 1st, Mr. J. Mason, Victoria Buildings, Manchester. Thirty-six distinct single trusses: 1st, the Rev. J. H. Pemberton, Essex. Twelve distinct, three trusses: 1st, Mr. W. Boyes. Twelve Tea or Noisettes, three trusses: 1st, Mr. H. V. Machin, Workop. Twelve Tea or Noisettes, single: 1st, the Rev. J. H. Pemberton. Twelve single trusses of any yellow Rose: 1st, Mr. H. V. Machin. Twelve single trusses of any white Rose: 1st, Mr. H. V. Machin. Twelve single trusses of any crimson Rose: 1st, the Rev. J. H. Pemberton. Twenty-four distinct single trusses: 1st, Mr. T. Tatham, Wilmelov. Twelve distinct single trusses: 1st, Mr. C. Burgess. Six distinct single trusses: 1st, Mr. C.

Burgess. Extra prize for Pansies: Mr. C. Bagehaw, Heaton Mersey. Highly Commended for hardy flowers: Messrs. Clibran & Sons. Extra prize for hardy flowers: Mr. F. Law. Extra prize for hardy flowers: Mr. H. Brownhill, Sale. Highly Commended for Peaches: Mr. Woolmer, Whalley Range.

GARDENING AND FORESTRY EXHIBITION.

JULY 12.—A show of Roses, fruit, Carnations, &c., was held at Earl's Court, on the above date. Roses were not numerous, some of the classes having no entry, and most of the others exhibiting, but little competition. Fruit, on the other hand, was largely shown, and of excellent quality. Carnations and Picotees were present in fair quantity, and miscellaneous exhibits were large and good.

Mr. Charles Turner, Royal Nurseries, Slough, took 1st for forty-eight distinct Roses, in triplets, with a very fair lot, but our space will not allow us to give varieties. The Crimson Rambler, we noticed, was included in this collection. The whole of them were very fresh-looking.

Messrs. Paul & Son, Cheshunt, were the only competitors for forty-eight distinct, single trusses, but their exhibit was a very creditable one.

For twenty-four, distinct, three trusses of each, the most successful exhibitors were Messrs. D. Prior & Son, Colchester, the flowers in this case being a little smaller than those of Mr. Turner, but equally fresh-looking. The same exhibitors were successful in the class for twenty-four single trusses, with good specimens, as also for twenty-four single blooms of Teas and Noisettes. Mr. Geo. Mount was awarded a 1st prize for the best eighteen Teas and Noisettes.

A nice lot of garden Roses from Messrs. Paul & Son, The Old Nurseries, Cheshunt, was the only lot entered for the twenty-four bunches.

In the amateur section, Mr. A. Gibson, gr. to T. T. Burnaby Atkins, Esq., Halstead Place, Sevenoaks, was 1st, for twelve H.P., distinct, single trusses; his *Mdlle. Marie Rady* was first-class.

The best twelve Teas and Noisettes came from Mr. James Parker, Oakfield, Hitchin, Herts; the other classes for Roses failed to obtain entries.

In an open class for twelve bunches of stove and greenhouse flowers, Mr. J. Prewett, Swiss Nursery, Hammersmith, staged a capital lot of choice flowers. Larger bunches prettily staged were from Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, and obtained a 1st prize also. Mr. A. Gibson, who was 3rd, had a first class collection.

CARNATIONS AND PICOTEEES, &c.

For twenty-four Carnations, of not fewer than twelve dissimilar varieties, the 1st prize went to Mr. M. Rowan, Clapham. The blooms were good, and very evenly flaked.

Mr. G. Chaundry, New Marston, Oxford, was 1st for twelve, with an equally fine collection. Mr. Chas. Turner, Royal Nurseries, Slough, showed very well in the class for twenty-four Picotees; and Mr. F. Hooper, Widcombe, Bath, was 1st for twelve Picotees.

The 1st prize for twenty-four self and fancy Carnations, dissimilar, went to Mr. Chas. Turner, who had large and good blooms; whilst the 1st prize for twelve was won by Mr. Jno. Walker, Thame, Oxon.

Mr. J. Douglas, gr. to Mrs. Whitbourn, Great Gearies, Ilford, Essex, staged the best twelve yellow-ground Picotees; and Mr. Chas. Turner was a good 2nd. A good non-competitive group of bunches of Carnations, staged together with small Palms and *Adiantum Ferns*, was staged by Mr. Geo. Wythes, gr. at Syon House.

Messrs. Geo. Jackman & Son, Woking Nurseries, Surrey, had a good lot of Roses in cut blooms; and Messrs. J. Cheal & Sons, Crawley, an extensive collection of hardy cut flowers, including a fine show of *Violas*, Carnations, and a good group of Sweet Peas. Another large collection of hardy cut flowers was from Messrs. Barr & Son, King Street, Covent Garden, W.C., with their usual variety; also a pretty representation of the rock garden, planted with alpine. Mr. H. B. May had an extensive group of greenhouse and stove foliage plants, similar to that staged at Chiswick on the previous day. Mr. G. H. Sage, gr. to the Earl of Dysart, Ham House, Richmond, had a group of hardy herbaceous flowers; and Messrs. Paul & Son, Cheshunt, had a number of Carnations, Cannas, &c. Mr. J. Walker, nurseryman, Thame, Oxon, also contributed a collection of Carnation sprays.

FRUIT.

Fruit was well represented, and most of the classes had a good number of competitors. In the first class, for three bunches of Black Grapes, the 1st place amongst nine exhibitors was taken by Mr. A. Maxim, gr. to the Hon. Miss Shaw Lefevre, Heckfield Place, Winchfield; Mr. T. Osman, Ottershaw Park, Chertsey, was 2nd, with Black Hamburgh; and Mr. F. Jordon, gr. to Birkett Foster, Esq., The Hill, Witley, Surrey, 3rd.

White Grapes were well shown by Mr. W. Lane, King's Ride, Ascot, who was 1st with well-ripened Muscat of Alexandria; Mr. W. Tidy, Stanmore Hall, Great Stanmore, Middlesex, was 2nd, with large bunches of Foster's Seedling, but not quite coloured.

The best three Melons were from Mr. E. Little, gardener to L. M. Rate Esq., Milton Court, Dorking, who had small fruits of Hero of Lockinge. Mr. Samuel Mortimer, Swiss Nursery, Farnham, Surrey, was 2nd.

The 1st prize for one Melon was secured by Mr. T. Elisha, Pelling Place, Old Windsor, for a seedling; and Mr. E. Little was 2nd.

Peaches and Nectarines were numerous, the 1st prize for six fruits in both cases going to Mr. F. Billings, gr. to R. W. Hanbury, Esq., Ilam Hall, Ashbourne, Derbyshire, with Barrington Peach and Lord Napier Nectarine; in both cases they were large, and exceptionally well coloured; Mr. F. J. Debnam was 2nd for Peaches, with fine fruits of Violette Hâtive; and Mr. Jno. Wallis, gr. to Ralph Sneyd, Esq., Keele Hall, Newcastle, Staffs, 3rd, with Bellegarde, also good, and of high colour.

The last-named exhibitor was 2nd for Nectarines, with Victoria, large, but not quite ripe; Mr. A. Gibson was 3rd.

There was only one exhibitor for three dishes of Strawberries, and a 1st prize was given to Mr. W. Chuck, gr. to P. Thellusson, Esq., Brodsworth Hall, Doncaster, who was 1st also for the single dish.

Messrs. T. F. Rivers & Son, Sawbridgeworth, had a good collection of fruit, similar to those at Chiswick on the previous day. Grapes as packed for market were well shown by Mr. A. Maxim and Mr. R. Grindrod, Whitfield Gardens, Hereford. Four dishes of Peaches were shown by Mr. T. Elisha, Pelling Place, Old Windsor, also Tomatoes, Peas, and Cucumbers. The same exhibitor had four seedling Melons, one of them of very good quality.

Mr. Walter Jinks, gr. to W. Grant, Esq., Fairlawn, Cobham, Surrey, had fifteen dishes of well-grown Tomatoes, in as many varieties.

NORTH OF SCOTLAND HORTICULTURAL AND ARBORICULTURAL ASSOCIATION.

IN beautiful weather the members of this Association held their second excursion for the season on Saturday afternoon, July 1. The places visited were the gardens and woods of Durris, Park, and Edgehill, on Deeside. The estate of Durris, which was first inspected, is now owned by Mr. A. R. Baird, and is one of the largest on Deeside, and for natural beauty, especially from an arboricultural point of view, is one of the most interesting in the north of Scotland. The party were conducted by Messrs. Lawson & Reid. Entering by the main drive, attention was at once arrested by healthy and perfect specimens of the finest and rarest Conifers, including *Abies nobilis*, *Abies Nordmanniana*, *Abies grandis*—magnificent specimens—and *Abies lasiocarpa*. A diversity of opinion arose over a variety of pendulous Spruce, about 40 feet high, with long, tendril-like laterals, 5 or 6 feet long, having the appearance of large tooth-brushes. It was named *Abies inverta*, but this did not satisfy some, and further enquiries are being made as to its correct name. One or two specimens were also noticed of *Abies Fraseri*, one of which was fully 40 feet high—probably as fine a specimen as in Scotland. As the company approached the house their attention was drawn to two old English Yews, which may be 500 or 600 years old. It was agreed that if not the largest, these Yews must be amongst the oldest in the country. The garden in front of the house is laid out with great taste. The party were conducted to the famous *Abies nobilis* avenue, planted by the late proprietor, Mr. Mactier, as a screen to a new approach then proposed to be made. The appearance of this avenue is probably the most unique in Scotland. The trees are planted at a good distance apart, and between each on one side are Limes, and on the other Spanish Chestnuts. At the west end of the venue the *Abies nobilis* are alternated with Weep-

ing Birch, and the effect of the whole is striking. After a hurried run through the gardens, the party wended their way up a part of the west approach, where were numerous fine specimens of *Tsuga Mertensiana*, *Tsuga canadensis*, *Abies magnifica*, *Sequoia gigantea*, and another beautiful specimen pendulous Spruce, distinctly different from the one in the main drive before referred to. The company were conducted to an avenue, where they saw the most interesting sight of the day, viz., grand specimens of *Sequoia gigantea*, *Abies Douglasii*, and *Tsuga Mertensiana*, and a view of much beauty from the Ivy-bridge. Perhaps the finest specimens seen during the day was on the heathery knoll above this bridge, viz., a specimen of *Abies lasiocarpa* (? *Lowiana*), probably the finest in Scotland. The estate nursery was then visited, and the party were shown many seedling beds of *Pseudotsuga Douglasii*, probably 1,000,000, grown from seeds gathered on the estate. Many thousands of *Abies nobilis*, ranging from 2½ to 4 feet high, were here lined out.

NORTH OF SCOTLAND APIARIAN.

The prize schedule of this Society has now been issued. There are twenty classes, with fifty-three prizes, including ten specials for ladies. The Highland and Agricultural Society presents two Silver Medals for the neatest and best display of honey, and the best collection of hives and bee furniture respectively. An attractive feature of the exhibition, which is to be held within the show enclosure of the Royal Horticultural Society of Aberdeen on August 17, 18, and 19 next, will be a bee-driving competition. The schedule may be had from the Secretary, Mr. A. M. Byres, C.A., Bridge Street, Aberdeen.

MARKETS.

COVENT GARDEN, July 13.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

MARKET well supplied, with a brisk trade doing. Large supplies of Grapes; more than equal to the demand. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Adiantum, per doz.	6 0-12 0	Heliotrope, per doz.	4 0-6 0
Aspidistra, per doz.	15 0-30 0	Hydrangea, per doz.	12 0-24 0
— specimen, each	7 6-21 0	Ivy Geranium, doz.	4 0-6 0
Balsams, per doz.	4 0-6 0	Lilium Harrisoni	18 0-30 0
Campanula, per doz.	6 0-12 0	— lanceolatum, dz.	12 0-18 0
Calceolaria, per doz.	4 0-6 0	Lobelia, per doz.	3 0-6 0
Cockscombs, per doz.	4 0-6 0	Marguerite, per doz.	6 0-12 0
Crassula, per doz.	18 0-42 0	Mignonette, per doz.	
Cyperus, per dozen	4 0-10 0		
Dracena, each	1 0-5 0		
Ferns, various, doz.	4 0-9 0		
Ferns, small, per			
100	4 0-8 0		
Ficus elastica, each	1 6-7 6		
Foliage plants, doz.	12 0-42 0		
Fuchsia, per doz.	10 0-9 0		

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Arum, per doz. bl.	2 0-4 0	Pansy, per doz. bun.	1 0-2 0
Aster (French), bun.	1 6-2 0	Orchids:—	
Bouvardias, per bun.	0 6-1 0	Cattleya, 12 blms.	6 0-12 0
Calceolaria, doz. bun.	4 0-6 0	Odonoglossum	
Carnation, doz. bun.	4 0-9 0	crispum, 12 blms.	2 0-6 0
— dozen blooms	1 0-3 0	Pelargoniums, scar-	
Cornflower, 12 bun.	1 0-3 0	let, p. 12 bun.	3 0-6 0
Eucharis, per dozen	3 0-4 0	— 12 sprays	0 6-9 0
Gardenia, per dozen	1 0-3 0	Poppy, doz. bunches	1 6-4 0
Heliotrope, per doz.		Primula, dble. p. bun.	0 6-1 0
sprays	0 3 0-6 0	Pyrethrum, 12 bun.	2 0-4 0
Lilium lancifolium,		Roses, doz. bunches	3 0-8 0
p. doz. blooms	2 0-4 0	— Tea, per dozen	0 6-2 0
— Harrisoni, p. doz.	2 0-5 0	— coloured, dozen	2 0-4 0
Maiden Hair Fern,		— yellow (Maré-	
12 bunches	4 0-6 0	chals), per doz.	1 6-6 0
Marguerite, p. doz.		— red, per dozen	1 0-1 6
bunches	1 6-3 0	Stocks, per bunch	0 4-0 6
Mignonette, 12 bun.	2 0-4 0	Sweet Sultan, 12 bun.	2 0-4 0
Myosotis, 12 bunches	2 0-3 0	Tuberose, 12 blms.	0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Cherries, half-sieve, 4 0-12 0		Lemons, per case	12 0-20 0
Currants, black, 3 6-4 6		Peaches, per doz.	3 0-9 0
— red, doz.	1 6-2 0	Pine-apples, St. Mi-	
Cobs, per 100 lb.	...	chael	2 0-5 0
Gooseberries, half-sieve, 1 6-2 0		Oranges, per case	20 0-30 0
Grapes, per lb.	1 0-2 0	Strawberries, per lb.	0 3-1 6

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d.	s. d.	s. d.	s. d.
Beans, French, lb.	1 6-2 0	Mushrooms, punnet	2 0-
Beet, red, per doz.	2 0-3 0	Mustard and Cress,	
Carrots, per bunch	0 4-0 6	punnet	0 4-
Cauliflowers, each	0 3-0 6	Parsley per bunch	0 3-0 6
Cucumbers, each	0 4-0 8	Shallots, per lb.	0 6-
Endive, per dozen	2 0-3 0	Tomatoes, per lb.	0 6-1 0
Herbs, per bunch	0 9-1 0	Turnips, per bunch	0 4-0 6
Lettuces, per doz.	1 6-2 0		

POTATOS.

Our markets are now being rather better supplied with home-grown produce. The Scotch tubers also have made their appearance, and these are very good in size and quality, but are not mature, the skin being rather tender for travelling long distances loose in a truck. Prices:—English, £5 to £8 Scotch, £5 10s. to £8 10s.; Jersey and French, £5 to £7; J. B. Thomas.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 135s. to 160s.; do., inferior, 105s. to 120s.; hay, best, 135s. to 160s.; do., inferior, 105s. to 120s.; and straw, 38s. to 50s. per load.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 43° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending July 8.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
0	6 +	125	0	+ 395	— 57	3 —	109	19'0	28	27
1	2 +	116	0	+ 286	— 21	0 aver	89	11'6	21	33
2	1 +	121	0	+ 288	— 62	12 +	75	9'7	31	37
3	4 +	155	0	+ 367	— 37	1 —	73	7'9	59	45
4	6 +	166	0	+ 488	— 47	1 +	74	8'6	47	42
5	5 +	163	0	+ 416	— 43	2 +	70	8'5	59	46
6	5 +	139	0	+ 382	— 63	2 +	89	16'3	39	37
7	6 +	158	0	+ 487	— 91	1 +	77	11'3	47	33
8	5 +	155	0	+ 530	— 70	4 +	72	12'8	42	49
9	4 +	132	0	+ 412	— 104	4 —	94	12'9	30	31
10	4 +	141	0	+ 447	— 100	0 aver	83	14'0	35	38
*	4 +	154	0	+ 600	— 52	5 +	76	10'4	47	56

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

NOTICES TO CORRESPONDENTS.

BONES: J. H. J. The quickest method of dissolving bones is to place them in a cement, stone, or slate tank, and to pour sulphuric acid over them.

BOOKS: K. Oliver's *Lessons in Elementary Botany* (Macmillan). or *Masters' Botany for Beginners*, and *Plant Life* (Bradbury, Agnew & Co.)—D. E. Ed. Newman's *Illustrated Natural History of British Moths*. It was published by W. Tweedie, 337, Strand, in 1869.

CARNATIONS: *Sent in Tin Box*. The flake variety, No. 3, has several equals in colour, but we know nothing of its habit, vigour, or weakness of growth, or if it is free. The others are no better than existing varieties, and good only for the borders.

CHRYSANTHEMUM: *J. D.* The leaves are very robust, and it would seem that manure-water or other had been afforded them in excess. Why one suffers and another escapes may be due to better drainage and greater leaf surface, or to some more resisting power in those varieties that are unaffected. There is no fungus.—*T. J. A.* The plants have not recovered from the stopping of the shoots, the hot weather exercising an injurious effect on them after the operation; moreover, the stopping has been very severe. Get the plants to grow freely, and do not be lavish in the use of manures, of which you may know nothing as regards their constituents.

CRACKING OF PEARS: *Munches.* This is due to the action of a fungus, *Fusicladium pirinum*. Try the Bordeaux Mixture, it may prevent the fungus spreading to sound fruits.

CUCUMBERS: *T. W. W., Hants.* The appearance of the leaves sent, and your account of the symptoms of ill-health, show that the plants are suffering from an invasion of eel-worms. Kindly send up some roots, fruit, &c., from the worst plants for inspection.

FLY ON ORCHIDS: *J. B. M.* Can you send specimens for examination?

FUCHSIA: *W. J.* The plants have, we fear, been crippled at the points of the shoots by insects—probably red-spider or thrip, although none was observed on those sent.

FUNGUS ON TUBER OF ANEMONE HORTENSIS: *W. A. C.* Reference to the *Gardeners' Chronicle*, May 28, 1887, p. 712, will show that a certain *Peziza*, now called *Sclerotinia tuberosa*, is often to be found amongst plants of *Anemone*, with the stems of the fungus rising out of black masses of sclerotium, in form and size just resembling the rhizomes of *Anemone*. It has been contended that these black bodies are not independent organisms, but veritable rhizomes, converted into masses of fungus mycelium, called from their compact nature, sclerotium. The conversion taking place in manner analogous to the conversion of the ovaries of grasses into ergot. This view is opposed by some mycologists, who contend that the masses of sclerotium resemble the rhizomes in size and form only, and are not developed from them. Our own opinion is in favour of the former interpretation, which is supported by some *Anemone* rhizomes now sent to us for examination. In this case they are invested with a white mycelium, which entirely absorbs the vigour of the rhizomes; and it appears feasible to suppose that the investment heralds the absorption of the whole cellular interior of the rhizomes, and its replacement by a more compact intermediate fungus stratum, which eventually gives rise to the *Peziza* figured at the above place. Direct evidence of the truth of this theory may be obtained by permitting the transformation to proceed, and watching for the advent of the mature fungus in the *Anemone* bed, after a period of rest. The whole subject of the development of perfect fungi, *Hymenomycetæ*, and *Ascomycetæ*, from forms of sclerotium, has received considerable attention of late years, and the presumption is strongly in favour of the sclerotia being developed at the expense of the absorbed tissue in the rhizomes of *Anemone*. *M. C. C.*

GRAPES: *Subscriber, Worktop.* To ensure the setting of the flowers next season, it would be advisable to procure pollen from some free-setting variety—Sweetwater, Black Hamburgh, or other, and use this by means of a camel's-hair pencil or hare's-foot, just after the flowers of the shy-setter have opened. It is certainly unnecessary to keep a mulch of manure on the vine the year round—in fact, unless the soil is very light, it would be better to employ a very light mulch in the summer, heavy mulches tending to keep the ground too cool for the roots of the Vine.

GRAPES: *G. S.* The "spot," *Glæosporium laticolor*, figured in a recent number of the *Gardeners' Chronicle*.

NAMES OF FRUIT: *G. S.* Mitchelson's Plum.

NAMES OF PLANTS: *W.* 1, *Kalmia angustifolia*; 2, *Liriodendron tulipiferum*, Tulip tree; 3, *Apium graveolens*, wild Celery; 4, *Lychnis alpina*, double; 5, *Alstromeria*, garden variety; 6, *Eryngium alpinum*.—*J. Wakeham.* *Fraxinus Ornus*.—*J. T. L.* *Lomatia ferruginea*.—*Robt. Owen.* *Stigmaphyllon littorale*, an ornamental climber, figured in the *Botanical Magazine*, t. 6623.—*R. H. S. Campa-*

nula latifolia, two forms.—*E. D. L.* 1, *Rubus odoratus*; 2, *Calamintha grandiflora*; 3, *Lysimachia stricta*; 4, *Eriogonum umbellatum*; 5, *Silene Saxifraga*.—*W. M. Jones.* 1, *Avena flavescens*; 2, *Arrhenatherum avenaceum*; 3, *Lolium temulentum*; 4, *Bromus sterilis*; 5, *Aira cæspitosa*; 6, *Agrostis alba*; 7, *Carex cæspitosa*; 8, *Carduus lanceolatus*; 9, *Bromus mollis*; 10, *Carduus nutans*; 11, *C. arvensis*; 12, *C. palustris*; 13, *Crepis virens*; 14, *Daucus Carota*; 15, *Vicia cracca*; 16, *Heracleum Sphondylium*. Another time send six only; our time and space are precious, and the plants you send are of little horticultural interest. *H. E., Christchurch.* *Cattleya labiata* Gaskelliana is one of the most variable forms of the type. Your No. 1 is a pretty light form, and not common; 2 and 3 are ordinary varieties; 4 is *Lælia crispata*, often called *Cattleya crispata* in gardens. Your golden *Adiantum* is a very singular plant.—*G. Cooper.* *Olea fragrans* and *Phyllanthus nivosus variegatus*.—*R. B.* 1, *Lobelia*; 2, *Alonsoa incisa*; 3, *Lonicera fragrantissima*; 4, *Agrostemma coronaria*.—*H. Pollard.* 1, *Davallia canariensis*; 2, *Aspidium coriaceum*; 3, *Asplenium bulbiferum*, barren frond; 4, *A. bulbiferum*, fertile frond.

PEACH MILDEW: *M. M.* The gumming is due to the attack of Peach mildew (see fig. 17).

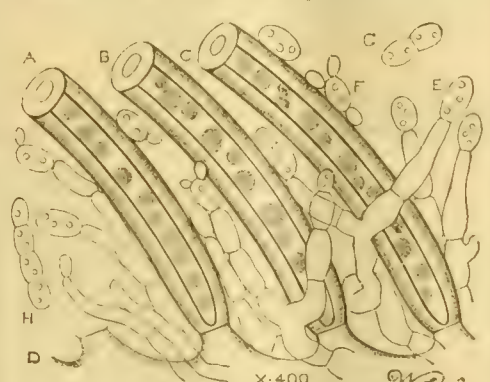


FIG. 17.—PEACH MILDEW HIGHLY MAGNIFIED.
A, B, C, hairs of the Peach; D—H, the fungus in various stages.

PEACH TREES FAILING TO SET THEIR FLOWERS IN PEACHERY: *X. Y. Z.* The trees require lifting and replanting in a border of new materials, and as you say the trees are large and healthy, it is worth the labour involved. Make early preparations, and lift the trees when the foliage is fully matured.

PELARGONIUMS: *Reader.* We cannot undertake to name florist's varieties.

PRUNUS PISSARDI FRUITS: *J. G.* The fruits are rather acid, but, like those of *Prunus Myrobalana*, which come over to this country from abroad, they are fit for tarts, &c.

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SWEET PEA, VARIETY EMILY HENDERSON: *H. L.* It is a good white blossom, and the fragrance; to our thinking, is no stronger than that of any other variety.

VENTILATION: *Thirty Years' Reader.* Provided the houses which you intend to put together are under 10 feet in height, side ventilation may be dispensed with; but we should suppose it to be desirable to have occasional ventilators placed in the brick walls that will form the sides and ends of the collection of houses of greater height than this.

COMMUNICATIONS RECEIVED.—*E. C.*—*B. W.*—*H. H. D.*—*D. O.*—*T. T.*—*W. Sowerby.*—*W. D.*—*F. T.*—*H. H. D.*—*E. W.*—*M. C. C.*—*J. D.*—*W. H.*—*Lecteur.*—*E. T. C.*—*Sutton & Son.*—*M. T.*—*R. A. R.*—*H. W. W.*—*J. J. W.*—*Merryweather & Sons.*—*Dr. Kränzl.*—*Berlin.*—*S. Motte.*—*Paris.*—*A. D. W.*—*D. T. F.*—*W.*—*N.*—*A. H. K.*—*J. B.*—*A. S. M.*—*J. K.*—*E. W. H.*—*Adelaide.*—*Wills & Segar.*—*Messrs. Low.*—*Secretary.*—*Wood Green Horticultural Society.*—*W. B. H.*—*C. A. M. C.*—*M. T. A.*—*List.*—*E. M.*—*H. M.*—*J. H. V.*—*J. F. McL.*—*C. W. D.*—*B. W.*—*W. W.*—*N. E. B.*—*A. C. F.*—*J. W. M. Coombe.*—*Igorant.*

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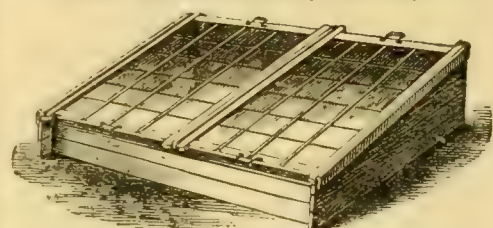
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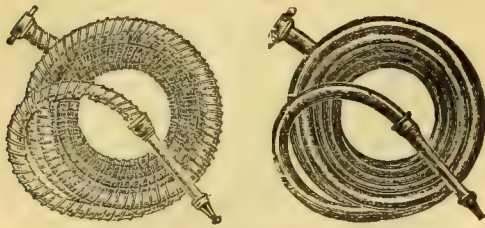
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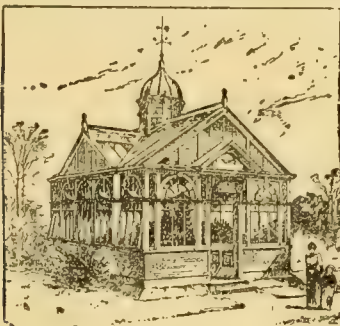
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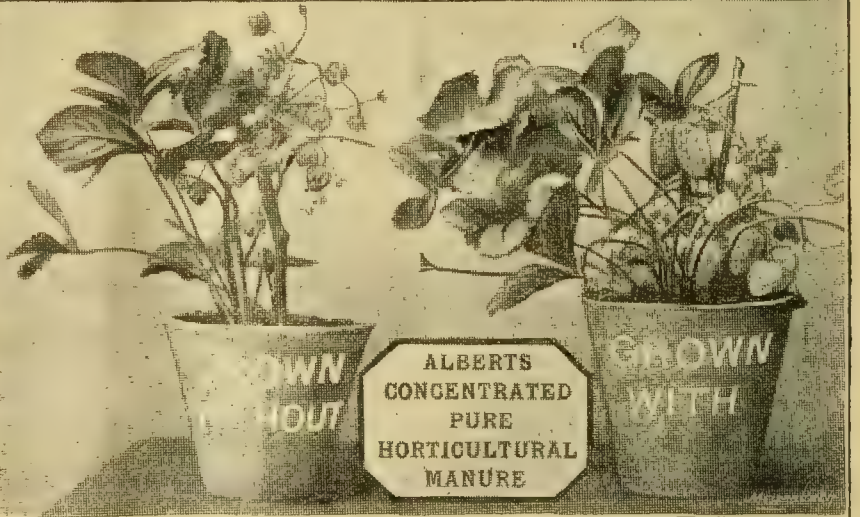
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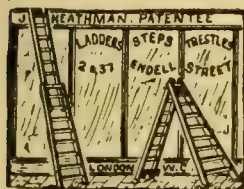
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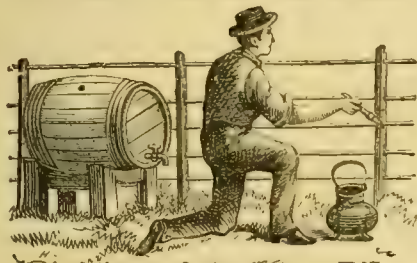


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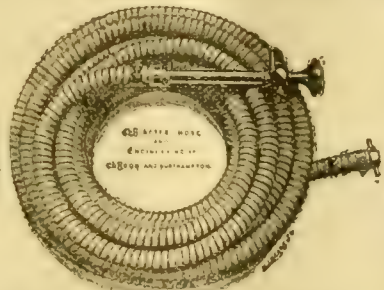
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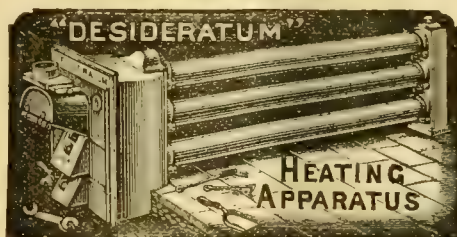
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41, WELLINGTON STREET, STRAND, W.C.

GARDENING APPOINTMENTS.

MR. CHARLES H. SNOOK, formerly of the Royal Gardens, Kew, and Shuckburgh Park, Daventry, as Gardener to Mrs. SCARAMANGA, West Hill, Shanklin, I.W.

MR. LODGE, for the last sixteen years Head Gardener at Brougham Hall, Penrith, having resigned his post, is succeeded by Mr. Taylor, lately Foreman at Edenhall Gardens, Penrith.

MR. JOHN ADAMS of Tweed Vineyards, Clovenfords, Galashiels, and formerly Under-glass Foreman at Normanby Park Gardens, Doncaster, as Gardener to T. Hardman, Esq., Corbar Hall, Buxton, Derbyshire.

MR. HERBERT MORRIS, until recently Foreman at Oxtou House Gardens, Exeter, as Gardener to Lieut.-Colonel Warde, M.P., Barham Court, Maidstone.

MR. J. REEVES, for the last thirteen years Gardener, Templemere, Oatlands Park, Surrey, as Gardener to S. Harrison, Esq., Sutton Place, Guildford, Surrey.

CATALOGUES RECEIVED.

PEARCE, BROS., 107, King Street, and 31, Sydney Arcade, Sydney, N.S.W.—General Catalogue.

JNO. LAING & SONS, Forest Hill Nurseries, London, S.E.—Tuberous Begonias, Caladiums, Clivias, and general plants.

W. B. HARTLAND, Cork—Irish Grown Daffodils.

ALFRED LEGERTON, 5, Aldgate, London, E.—Dutch and other Flower Roots.

WANTED, a HEAD WORKING GARDENER. Three men under. Personal character required.—Apply by letter to W., Baynards Park, near Horsham.

WANTED, a KITCHEN GARDENER, well up to his work, single or married, no family; age, 25 to 30; cottage found. ALSO, a strong YOUTH, about 18, to clean lamps, windows, look after pony, and work in the garden; lodgings found.—Apply by letter, stating wages and references, to R. POOLE, Walton Oaks, Epsom.

WANTED, a FRUIT-TREE FOREMAN, well experienced in the Propagating and Growing of Fruit Trees for Sale. ALSO, wanted a good BUDDER of Fruit Trees.—Apply to WM. PAUL AND SON, Waltham Cross, Herts.

WANTED, a WORKING FOREMAN, in a Gentleman's Garden, near London, where five or six hands are kept. He must be a middle-aged, married man, without family, civil and obliging, who thoroughly understands his business as a Practical Hard-working Gardener (Inside and Out), able to produce a constant supply of Vegetables, Flowers, and Fruit, and to take charge of place when wanted. Wages, £1 per week and lodge. Wife must be a clean, tidy, and domesticated woman (used to service), as she would be employed in the house from time to time, for which she would be paid, in addition to her husband's wages. It is hoped that no one will reply to this advertisement unless the very best personal characters can be produced.—Reply to F. M., 62, Guilford Street, Russell Square, W.C.

WANTED, GENERAL FOREMAN or HEAD WORKING GARDENER.—Thoroughly Experienced in the Culture of Vines, Peaches, Melons, &c., Stove and Greenhouse Plants. Another man kept for outside work. Abstemious preferred. Wages to commence, 25s. per week, no cottage.—Apply, in first instance, B., 35, Weld Road, Birkdale, Southport.

WANTED, a PROPAGATOR and GROWER, well up in Grafting Tea Roses, Clematis, Rhododendron, and General Hard and Soft-wooded Propagating.—State age, experience, and wages to A. X., *Gardeners' Chronicle*, Office, 41, Wellington Street, Strand, W.C.

Rose Grower Wanted.

WANTED, a steady and industrious MAN, who has had experience with Roses. Must be a successful Grafter and Budder, and competent to execute orders.—Apply, stating age, where last employed, wages expected, &c., to JNO. JEFFERIES and SON, Royal Nurseries, Cirencester.

WANTED MAN and WIFE; Ages 40 to 50, without family, to live in the house in an Eastern Suburb of London. The man is required to Manage a Small Garden and Greenhouse (no Kitchen Garden), and to make himself generally useful; the wife to act as a good plain Cook. The family consists of two ladies. Wages to begin at £10 a-year, all found, except beer. Address, F. R. S., *Gardeners' Chronicle* Office, Wellington Street, Strand, W.C.

WANTED, a young MAN, about 22 years of age, experienced in Orchid Cultivation, for a Private Establishment.—State full particulars and wages required, to B. S. WILLIAMS and SON, Victoria and Paradise Nurseries, Upper Holloway, N.

WANTED, a MAN, well up in House and Table Decorations.—Apply, with full particulars, to G. H. M. YOCKE, Luton Hoo Gardens, Beds.

WANTED, a smart active young MAN, for Outside, one who has been used to Kitchen Gardening and General Outside Work.—Apply by letter, stating age, wages required, and full particulars, to C. W. FINCKEN, Esq., Hoyland Hall, near Bursley.

WANTED, a good HEDGER; also a ROUGH CARPENTER, for Fencing, Gate-making, &c.—Apply, A. D. WEBSTER, Park Farm Office, Woburn, Bedfordshire.

WANTED, a quick, intelligent young MAN, under 20 years of age, as IMPROVER in the Office.—To a deserving youth, the situation will be good and permanent.—Apply, in own handwriting, with references, all particulars, and wages expected, to F. SANDER and CO., St. Albans.

WANTED, a strong, respectable BOY of 17, in the Gardens, Stanmore Park. He must Mow well with Scythe and Machine. To live in the house. Wages £14, all found.—Mrs. KEMBALL COOK, Stanmore Park, Middlesex.

WANTED, August 1, a good COUNTER HAND. Wages to commence at 21s. per week.—Apply, by letter, with full particulars, to E., 13, King Street, Covent Garden, London, W.C.

WANTED, an INVOICE CLERK, in a Wholesale Seed House. Good and quick writer.—Apply by letter to ALPHA, Messrs. Nutting & Sons, Seed Merchants, 106, Southwark Street, London, S.E.

WANTED for Fruit and Flower business, young LADY to take charge of shop; must be of good address and well skilled in wreath-making, &c. Apply, giving age, experience, and references, to JOHN MARSH, Farmers' Stores, Warrington.

WANT PLACES.**TO GARDENERS AND OTHERS SEEKING SITUATIONS.**

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

The pressure upon our space at this season of the year is so great, we are compelled to state that advertisements received after 6 P.M. on Wednesday will, in all probability, be held over to the next week.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application.
Telegraphic and Postal Address—"DICKSONS, CHESTER."

F. SANDER AND CO. can recommend several highly qualified and energetic HEAD and UNDER GARDENERS, of excellent character, and proved ability; men thoroughly fitted for all the various duties of their profession. For all particulars, please apply to—
F. SANDER AND CO., St. Albans.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

TECHNICAL EDUCATION IN HORTICULTURE.—The Advertiser having completed his engagement with the Norfolk County Council, is open to give further courses in Horticulture. Numerous Testimonials and Press Notices can be furnished.—THOMAS BUNYARD, 40, Warrior Square, St. Leonard's-on-Sea.

MR. ALFRED LODGE, who has recently resigned Charge of Brougham Hall Gardens, Penrith, after sixteen years' service, begs to announce that he is now open for an engagement. He is thoroughly qualified in every branch of the profession, and can produce most excellent testimonials. Married, no family; life abstainer.—Address, Chiburn, Penrith.

GARDENER (HEAD), in a good establishment.—Age 34, married, no family; twenty-four years' experience in all branches, also Landscape Work. Well recommended.—F. ALLARD, West Malvern, Worcestershire.

GARDENER (HEAD).—Age 41, married. Long practical experience in the Management of good Establishments.—Highest references, and ten years' character from last employer.—H. COOK, Lincoln Road, Dorking.

GARDENER (HEAD), where three or more are kept.—Age 40, married, no family; thoroughly practical in all branches. Life experience. Good references from present and previous employers.—W., 48, Oakfield Road, Penge.

GARDENER (HEAD); age 29.—Mr. J. SIMMS, Gardener and Bailiff, Kingswood Lodge, can strongly recommend a good practical all-round man as above. Good references.—UNDERY, Kingswood Lodge, Englefield Green, Surrey.

GARDENER (HEAD), or GARDENER and BAILIFF.—Thoroughly conversant with every Department of Gardening; also Farm and Estate. Twenty years' experience; highly recommended.—W. M. GEDDES, Thrumpton Hall, Derby.

GARDENER (HEAD WORKING); age 30; twelve years' experience in good Gardens. Good references.—W. L., 5, Little Elm Place, Fulham Road, London, S.W.

GARDENER (HEAD WORKING).—Age 28, single; fourteen years' practical experience both Inside and Out, in large establishments. Good character.—GARDENER, 3, Grove Terrace, Church End, Finchley, N.

GARDENER (HEAD WORKING); age 26, married.—Mr. LOUTH, gardener to G. R. Burness, Esq., Lyndale Park, Faversham, will be pleased to recommend DAVID SAVAGE to any Lady or Gentleman requiring a good experienced and trustworthy man.

GARDENER (HEAD WORKING).—Age 42, married, no family; experienced in Vines, Cucumbers, Melons, Tomatoes, Mushrooms, Stove and Greenhouse Plants, Fruit, Flower, and Kitchen Gardens, Early and Late Forcing. Twenty-five years' experience, seventeen as Head. Good references.—F. PAY, Hawks Hill, Bourne End, Maidenhead, Berks.

GARDENER (HEAD WORKING).—Age 27, married when suited; fourteen years' experience. Thoroughly up in all branches, Fruits, Flowers, and Vegetables, also first-class Rose Grower, and Staging for Exhibition. Can be highly recommended.—HENRY WELLER, 1, Alpha Cottage, Feltham Hill Road, Ashford, Middlesex.

GARDENER (HEAD WORKING).—Age 33, married, small family; twenty years' good all-round experience. Three years' character.—W. Howard, 4, Achilles Road, West Hampstead, N.W.

GARDENER (HEAD WORKING).—Age 31. Single at present; Experienced in Vines, Melons, Cucumbers, Stove and Greenhouse, Flower and Kitchen Garden. Two years' good character from previous employer.—A. NEAL, Hambleton, Godalming, Surrey.

GARDENER (HEAD WORKING) where more are kept.—Middle Age, Married, no Family; Life Experience. Forcing Grapes, Peaches, Melons, Cucumber, Stove, Greenhouse Plants, Flower, Kitchen Garden. Good Personal Character.—A. B., 1, Vine Cottage, Sunninghill Village, Ascot, Berks.

GARDENER (HEAD WORKING).—Age 29, married, no family; well up in Orchids, Stove and Greenhouse, and Fruit, and Table Decoration. Would suit where chiefly Glass. Good characters.—M. B., 6, Brigstock Parade, Thornton Heath.

GARDENER (HEAD WORKING).—Age 48, single; would be pleased to engage with any Lady or Gentleman, where a good practical man is required to grow both Early and Late Fruits, Vegetables, and Flowers; very successful with Grapes and Peaches. Good Testimonials, with good Reference a.o.—A. G., 3, Grove Terrace, Churchend, Finchley, Middlesex.

GARDENER (HEAD WORKING).—Fourteen years' experience in Greenhouse and Stove Plants, Fruit, Flower and Kitchen Gardens. Excellent character.—WELLS, Mr. Davis, Bridge House, South Streatham, S.W.

GARDENER (HEAD WORKING).—Age 32. Seventeen years' practical experience in all branches of the profession. Can be well recommended as to character and abilities.—H. J. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (HEAD WORKING), or ORCHID GROWER.—Married, no family; strongly recommended by late employer. Understands the Cultivation of Orchids and Hybridising same; also understands Stove and Greenhouse Plants, Fruit, Flowers, and Kitchen Garden, Early and Late Forcing.—C., Mr. May, The Lodge, Oakfield, Eden Park, Beckenham.

GARDENER (HEAD WORKING).—Age 32, married. Experienced in all branches, under Glass and Outside. Good character as Head, personal if desired.—W. H., 363, King Street, Hammersmith, W.

GARDENER (HEAD WORKING).—Age 32; practical knowledge of every branch of the profession. Understands all the requirements of Gentlemen's Gardens, and the management of men. Excellent references.—S. B., Park Gate Gardens, Warling, Hastings.

GARDENER (HEAD), or FOREMAN (GENERAL), in a large Establishment.—Age 31, married; high references.—W. E., Cotswold Lodge, Hencroft Street, Slough.

GARDENER (HEAD), or good SINGLE-HANDED.—Age 25, married; twelve years' experience in good places.—H. SMITH, 3, Frith Road, Croydon.

GARDENER (HEAD), or good SINGLE-HANDED.—Age 30. Recommended as a good and competent Gardener. Character will bear strictest investigation.—A. BOOKER, 59, Ringford Road, West Hill, Wandsworth, S.W.

GARDENER (SINGLE-HANDED, or SECOND).—Age 27, married. Good references.—H. LANE, 4, Castle Place, Wellington Road, Hounslow.

GARDENER (SINGLE-HANDED), or where Two are kept; aged 26, single.—Experienced in Greenhouse, Flower, and Kitchen Garden. Fourteen years' experience. Good character.—The Lodge, Addington Park, Croydon, Surrey.

GARDENER (SINGLE-HANDED).—Cow or Pony not objected to, or to look after Cows and assist in Garden. Good references.—W., Mr. C. Webb's, Calworth, Banbury, Oxon.

GARDENER (SINGLE-HANDED).—Age 23, single; has a good knowledge of Stove, Tomatoes, Melons, Grapes, Greenhouse, Flower, and Kitchen Garden; from large establishment; good references.—GARDENER, Arkley Hall, High Barnet, Herts.

GARDENER (SINGLE-HANDED).—Age 26, married when suited; well recommended by Mr. Bird, Head Gardener.—H. D., 32, South Croxted Road, West Dulwich, S.E.

GARDENER (SINGLE-HANDED).—Age 24, single. Lifetime experience in Flowers, Fruit, Vegetables, &c. No objection to make himself useful in any other way, if required. Good references; state wages.—E. G., 1, College Terrace, Church End, Finchley.

GARDENER.—Has had charge of Large Gardens; experienced in Flowers and Fruit under Glass, wishes permanent employment as Head Gardener. Highest references.—G. S., Hextable, Kent.

GARDENER; aged 42. Four children.—A GENTLEMAN wishes to find a situation for his late gardener, two-and-a-half years' character.—W. E. TALLENTS, Esq., Carlton-on-Trent, Newark.

GARDENER.—A Lady recommends her Gardener. Has been in present situation for many years. Thoroughly understands Conservatories, Stoves, Peach, Melon-houses.—Box 10, B. WHEELER, Manchester.

GARDENER (SECOND), where three or more are kept.—Age 24; twelve years' experience; good characters from past employers.—G. L., 121, Shardeloes Road, New Cross, S.E.

GARDENER (SECOND), where four or more are kept.—Age 24; well experienced, Inside and Out. Mr. GIBSON will recommend a young man as above.—A. STREET, Greenlane, Ampfield, Romsey.

GARDENER (SECOND), in a Private Establishment.—Age 25, married; well experienced, both Inside and Out. Three years' good character from last place. Disengaged. Total abstainer.—L. PLAW, Hascombe, near Godalming, Surrey.

GARDENER (SECOND, or SINGLE-HANDED).—Nine years' character.—W. HORN, Warren Farm, Kingswood, Epsom.

GARDENER (SECOND).—Age 26; twelve years' good character from excellent situations. Thoroughly experienced Inside and Out.—S. B., 5, High Street, Swanley Junction, Kent.

GARDENER (UNDER), where two or three are kept.—Inside and Out. Good reference. Bothy preferred.—W. J. BRITTAIN, 2, Britwell Cottages, Burnham, Bucks.

GARDENER (UNDER).—Age 24, single; seeks a situation in Kitchen and Flower Garden. Good experience. Good character. State wages.—K., Post Office, Fygate.

GARDENER (UNDER).—Mr. THOMSON, Gardener, Easneye Park, Ware, Herts, can recommend a young man (age 22) for Inside or Outside and Out. Nine years' good experience.

GARDENER (UNDER), Inside or Out.—Mr. T. BRIDGWATER, Aston House Gardens, Stevenage, Herts, will be pleased to recommend H. Raines, who has been with him two years, as above.

GARDENER (UNDER); age 20.—The Advertiser is desirous of obtaining a situation in a good establishment, where he would be able to improve himself, both under Glass and Outside. Nearly three years in present situation. Can be highly recommended by present employer. Bothy preferred.—A. S., Carshalton House, Surrey.

GARDENER (THIRD, or otherwise).—Age 23; eight years Inside and Out. Three years' excellent recommendation. Near London preferred.—A. HUNTLEY, 15, Prince's Road, Kingston-on-Thames.

GARDENER and COACHMAN.—Willing to be useful; age 35, married. Five years' first-class character.—JAMES BISHOP, 53, Burrard Road, West Hampstead.

GARDENER and GROOM.—Age 31, married; good driver; thoroughly understands Poultry and Milking; good character and reference.—E. C., 8, Castle Street, Aylesbury, Bucks.

GARDENER and HANDY MAN (SINGLE-HANDED or otherwise), excellent personal character from last employer.—G., 24, Elspeth Road, Lavender Hill, S.W.

MANAGER, or FOREMAN.—Age 28; Vines, Tomatoes, Cucumbers, Plants, Cut Flowers, Ferns, &c.—H. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

MANAGER, SALESMAN, or FOREMAN GROWER.—Age 38; well up in all branches of the Trade, Fruit, Flowers, Wreaths, &c.—PALMER, 103, Bollingbrook Grove, Wandsworth Common, S.W.

MANAGER, or FOREMAN.—Some years Manager of a large London Nursery. Experienced in all branches of Horticulture. Also well up in taking Contracts for laying out new grounds, &c. Would travel if required.—C. H. C., 22, Lower Lawn Road, Hampstead, N.W.

TO THE TRADE.—MANAGER, FOREMAN and SALESMAN, age 30, single; fifteen years' experience in all branches. Could take journey. First-class references.—J. WINNER, Brookside, Ascot, Berks.

ROSE GROWER.—Inside or Out, either for Exhibition or otherwise. Has been twelve years Rose Foreman to Messrs. Jno. Jefferies & Son, Royal Nurseries, Cirencester.—A. CONEY, 42, Watermoor Road, Cirencester.

ROSE GROWER, or PROPAGATOR of Hardy Trees, Shrubs, Conifers, Clematis, &c. Has been twelve years Foreman to Mr. Prince, Oxford, and understands Seedling Briar and all other Rose Stocks.—S. C. LEY, Longworth, Faringdon, Berks.

TO Nurserymen.
FOREMAN GROWER.—Age 28; well up in Market and Cut Flower Trade. Good references.—G. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO Nurserymen and Florists.
FOREMAN and PROPAGATOR.—Twenty-five years' practical experience in the Cultivation of Plants and Cut Flowers. Could take entire Management if required. Good Salesman.—G. PESTRIDGE, 5, Beale Street, Lower Edmonton.

FOREMAN and PROPAGATOR.—Age 29, married. Well up in Carnations, Roses, Cucumbers, Tomatoes, and all Choice Flowers, for Market. Life experience; good character; abstainer.—A. JOHNSON, Swanhurst, Mill Road, Hampton Hill, S.W.

FOREMAN, in good establishment.—Age 27; life experience in all branches in leading establishments. Highest testimonials. Abstainer.—H. WELSON, Spring Bank, Severn Stoke, Worcester.

FOREMAN PROPAGATOR.—Age 35; abstainer. Grower of Roses, Carnations, Bouvardias, Bulbs, Lilies, first-class Forcer of Winter Bloom, and Grower of all kinds of Market Produce. Good Salesman and Floral Decorator.—WM. SMITH, 42, Beresford Road, Cardiff.

FOREMAN; age 25.—Mr. C. J. SALTER, can strongly recommend A. H. Nicholls. Ten years' experience in Plant and Fruit Growing.—The Gardens, Woodhatch Lodge, Reigate.

FOREMAN (WORKING), in a Nursery.—Thoroughly understands Growing Roses, Fruit Trees, &c., Inside and Out. Excellent references.—BAKER, The Gardens, Stanmore, Middlesex.

FOREMAN, Inside.—Age 27; ten years' experience in plant and fruit-houses. Good references.—GEO. THOMPSON, Park Gatehouse, Westwell, Ashford, Kent.

FOREMAN, Inside, where three or four are kept, in a large establishment.—Age 28, single; twelve years' experience in Stove plant, Fruit Growing, Early and Late Forcing, Table Decorations, &c.—J. S., 9, Clabor Mews, Cadogan Square, S.W.

FOREMAN (or DEPARTMENT), in Private Place.—Age 24. Ten years' experience in Plant and Fruit Growing and Conservatory Decoration. Good references.—Bothy preferred.—SECOND, 20, King Street, Chelsea, S.W.

FOREMAN and PROPAGATOR.—Soft-wooded Market Stuff, Ferns, Palms, Cut Flowers, and Floral Arrangements.—F., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOREMAN, in a good Establishment.—Age 28; practical experience in all branches.—Mr. F. BENFORD, Traffan House Gardens, Traffan Station, co. Kildare, Ireland, recommends his late Foreman, Alfred Wood, as above, to anyone requiring a thorough good man.

PROPAGATOR and GROWER of Pot and Cut Plants, Bouvardias, Ferns, Palms, &c., Cucumber, Tomatoes, &c. Many years in Market Nurseries.—F. SPARY, 15, Pentlow Street, Putney, S.W.

FOREMAN, or JOURNEYMAN (FIRST), in a good establishment.—Age 25; excellent references.—J. FRANCIS, Church Street, Madeley, near Salop.

JOURNEYMAN (FIRST), in a good establishment.—Age 22; three years' good reference.—D. H. PERRIN, Kake Hill, East Liss, Hants.

JOURNEYMAN.—Age 20; four years' experience. One year in last situation, three in previous. Good character from last and previous employers. Bothy.—A. HINCHLIFFE, Killamarsh, Cawthorne, Barnsley.

JOURNEYMAN (FIRST), in a good private Establishment.—Age 24. Six years' practical experience in three places, and four years previous in good gardens.—H. HILLS, Hartwell Garden, Hartfield, Sussex.

JOURNEYMAN (FIRST), or FOREMAN.—Age 25; twelve years' experience in good Gardens. Well recommended.—HEAD GARDENER, Iron Mills, Minchinhampton, Glos.

JOURNEYMAN, in a good establishment.—Age 23; eight years' thorough good practical experience. First-class references.—H. S., Kingswood Gardens, Englefield Green, Egham, Surrey.

JOURNEYMAN (Good).—Age 24; height 5 feet 11 inches; ten years' excellent character from first-class private places.—E. H., 5, Lullingstone Villas, Swanley Junction, Kent.

JOURNEYMAN.—Inside, or Inside and Out, by an energetic young man (age 23), with five years' experience and reference.—MANSBRIDGE, 2, Penfold Cottages, Lion Street, Bexley Heath, S.E.

IMPROVER.—Situation wanted in a Gentleman's Garden as above. Age 17; three years' experience Inside and Out.—H. STACEY, The Gardens, Mongewell, Wallingford, Berks.

IMPROVER.—Advertiser can thoroughly recommend a strong, active lad (age 18), for a Gentleman's Garden.—J. D. BOYINGTON, Fairmile Hatch, Cobham, Surrey.

TO HEAD GARDENERS, &c.—Situation wanted in a Nobleman's or Gentleman's Garden, to learn the profession; or in a good Nursery Garden; age 19; small salary to begin with; good references.—W. DIGGLE, Outwell, Wisbech.

TO GARDENERS, &c.—Situation wanted by a Young Man (age 28), to assist in Houses, Nursery, or Gentleman's Garden. Used to Vines. Twelve years' reference.—H. BRIDGES, Powick, Worcester.

TO GARDENERS.—Wanted, by a young man, in his 19th year, a situation in a Gentleman's Garden. Good knowledge of Lawn and Kitchen Garden, Bothy, or otherwise. Four years' experience.—H. MOLES, Stanbury, Reading.

TO MARKET NURSERYMEN and OTHERS.—Wanted situation, under Glass (age 22), strong, active and obliging, with excellent character.—T. DENNON, Warling, Hastings.

TO MARKET NURSERYMEN.—Situation wanted by a young man (age 23) in the Houses. Several years experience in Cut Flowers, Pot Plants, and Tomatoes. Good reference.—A. M., 26, Martin's Road, Bromley, Kent.

TO NURSERYMEN.—Situation wanted as ASSISTANT PROPAGATOR, well up in Roses, Rhododendrons, Clematis, and general Hardy Propagating. Good Budder and Gaffer. Five years' good character.—C. A. S., 12, Cambridge Street, Prescott, near Liverpool.

TO NURSERYMEN.—Situation wanted as INDOOR WORKING FOREMAN. Fifteen years' experience. Good character for ability, &c., from present and previous situations. Age 31.—S. B., Onslow Nurseries, Hailsham, Sussex.

TO NURSERYMEN.—Situation wanted, in good Nursery. Good Plantsman. Used to Growing for Market. Well up in the Making of Wreaths, &c.—C. W., 69, Well Street, Riverside, Cardiff.

TO NURSERYMEN.—A young MAN (age 24) seeks situation in a Market Nursery. Well up in the routine of all Market Work. Two years' character.—A. CANFIELD, 21, Montague Road, Swanley Junction, Kent.

TO NURSERYMEN.—Situation wanted in a Market Nursery by an energetic Hand (age 23). Good references.—M., Lion Road Nurseries, Bexley Heath, S.E.

TO NURSERYMEN, &c.—Situation wanted by a Young Man (age 21). Five years' experience in General Routine of Market Nursery Work. Good references.—A. M., 12, Cambridge Street, Prescott, Lancashire.

TO SEED MERCHANTS, NURSERYMEN, &c.—Advertiser is open to represent a first-class Firm in the West Midland Counties, to attend Markets and Stock Sales, where he has a valuable Connection, and Life Experience in the Business. Highest references. Terms, Salary, Commission, and some Expenses.—GEORGE FISHER, Mile End Terrace, Bromyard Road, Worcester.

STUD GROOM, or COACHMAN (WORKING).—Understands Management of Hunters and Carriage Horses. Ride and Drive. Nine years' excellent character from present employer. Disengaged August 5.—H. TAPPER, Ringwood House, near Dover.

COWMAN, or ODD MAN.—Age 29, single; willing to assist in Garden, and be useful.—HARRIS DUFFIN, Totteridge House, Totteridge, Herts.

MESSRS. JOHN LAING AND SONS, Forest Hill and Catford Nurseries, can thoroughly recommend a most respectable young man as a competent NURSERY CLERK. Excellent references.

CLERK (NURSERY TRADE).—Can be well recommended by present employers.—For particulars, address J. H. J., Dicksons Nurseries, Chester.

TO THE TRADE.—Situation wanted, as a JUNIOR CLERK, or ASSISTANT BOOK-KEEPER.—Age 22; no objection to filling up time in Greenhouses. Six years with Messrs. Wm. Paul & Son, Waltham Cross, Herts.—A. HILLIER, 83, Evesnor Road, Waltham Cross, Herts.

HANDY-MAN.—Wanted, a situation as HANDY MAN; used to Painting, Glazing, and Brickwork, Copper, Stoves, and Roofs, and all kinds of House Repairs on Gentleman's Estate. Eleven years' good character.—W. A. M., 75A, Regent Road, Herne Hill, S.E.

COLLECTOR of RENTS in the Country.—Age 33 years; fourteen years' character. Highest references; security if necessary.—X. O., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

REAPING and SOWING are the two most important periods in the life of the farmer, and granting that all circumstances are favourable, he naturally during the latter period, hopes to get an adequate return for his labour. As he sows, he expects to reap, and unless constant industry has been exercised, the harvest is generally a poor one. So it is with regard to health, if we are not constantly on the watch and destroy the germs of disease as soon as they are discerned, the body becomes weakened, and at last is unable longer to resist the attacks of the enemy. Holloway's Pills destroy even the most minute traces of disease by purifying the blood and strengthening the system.

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TRADE MARK. TRADE MARK.

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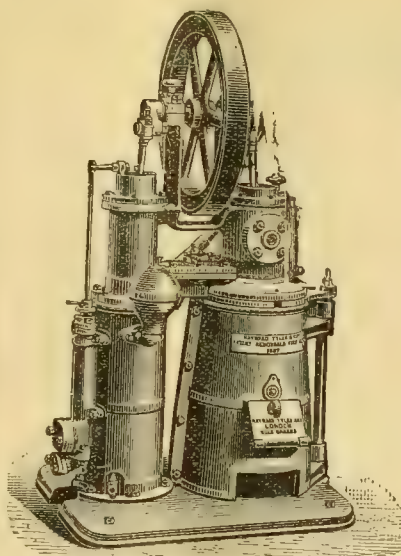
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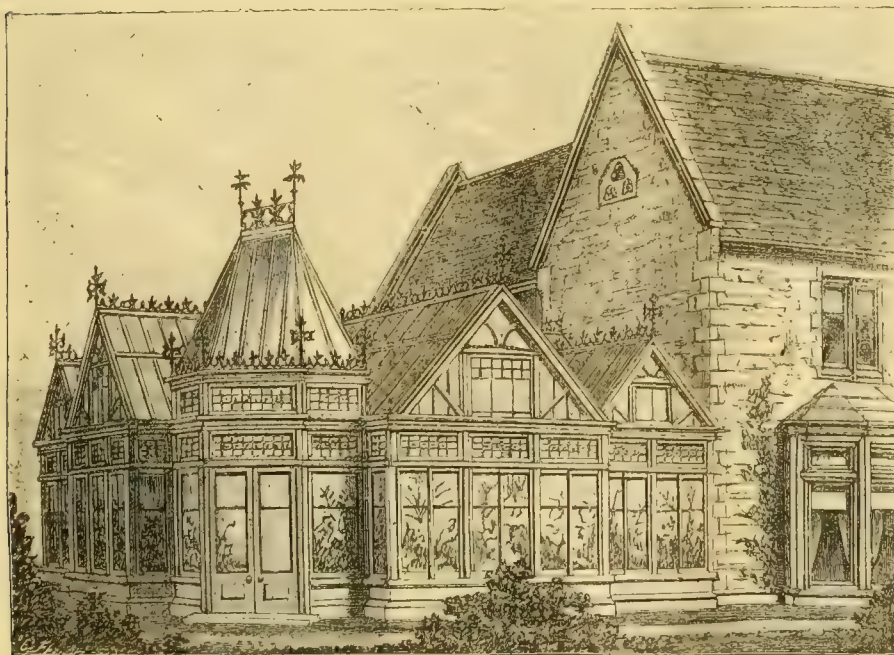
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2743.

No. 343.—VOL. XIV. { THIRD }
SERIES.

SATURDAY, JULY 22, 1893.

{ Regt. as a Newspaper. } PRICE 3d.
POST-FREE, 34d.

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OAK STAKES for ROSES, &c., 4 feet long, ½ inch, ¾ inch, and 1 inch square. Price 4s., 6s., and 8s. per 100.—SHENSTONE, Grange Road, Leyton.

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Special Cheap Offer for really good large Flowering Bulbs:—*Pancratiums*, all best sorts, grand bulbs, ready to burst into flower—*P. fragrans*, *P. caribaeum*, *P. amoenum*, *P. zeylanicum grandiflora*, some bulbs 12 inches round, 18s. to 40s. per 100; 2s. 6d. to 6s. per dozen. *Gloriosa superba*, just imported, 25s. per 100, 4s. per dozen. *Crimum Kirkii*, very large plump bulbs, 50s. per 100, 8s. per dozen; *C. zeylanicum*, and *C. asiaticum*, large white flower, 6s. to 8s. per dozen; extra large, 20-inch bulbs, 2s. 6d. and 3s. 6d. each. *Ammocharis falcata*, splendid bulbs, make fine Pot Plants, 3s. each. *Zamias*, for Table Plants, 1s. each. *Anurophallus campanulatus*, or Stanley's Wash-Tub, flowers 2½ feet across, 6s. per dozen, 1s. each. *Babianas*, in ten sorts, 12s. per 100. *Ixias*, in sorts, 10s. per 100. *Freesia* *ref. alba*, true, 18s. to 26s. per 1000. Above is Cheapest Offer ever made for first-class Bulbs. Terms, Cash with Order. All Bulbs warranted sound and freshly imported, or money returned.

J. JAMES, Importer, New Malden, Surrey.

CYPRIPEDIUM CURTISII,

CYPRIPEDIUM ELLIOTTIANUM,

CYPRIPEDIUM HOOKERÆ,

CYPRIPEDIUM LAWRENCEANUM.

Grand Importations of the above just received.

INSPECTION INVITED.

HUGH LOW & CO.,
 CLAPTON NURSERY, LONDON, N.E.

London County Council.

TO NURSERYMEN and BULB-GROWERS.

TENDERS are invited for the SUPPLY of BULBS for various Parks and Gardens under the control of the Council. Persons desirous of submitting tenders may obtain a copy of the form of contract, specification, form of tender, and instructions for tendering, on application to the Parks Sub-Department of the Council, at the County Hall, Spring Gardens, S.W.

The tenders, which must be on the form supplied by the Council, are to be addressed to "The Clerk of the Council," and endorsed "Tender for Bulbs," and must be delivered at this Office before 10 o'clock, A.M., on July 27, 1893, and no tender will be received after that hour. Any tender which is not in accordance with the instructions for tendering will be rejected.

The Council does not bind itself to accept the lowest or any tender.

H. DE LA HOOKE, Clerk of the Council.
Spring Gardens, S.W., July 20, 1893.

BOUVARDIAS, fine bushy stuff, in 5-inch pots, now coming into bud, ALFRED NEUNER, CANDIDISSIMA, PRESIDENT CLEVELAND, MRS. R. GREEN, and other leading sorts. Special quotations on application.
H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

To the Trade.

HYDRANGÆA PANICULATA GRANDIFLORA, in bloom, fine for decoration, 18s., 24s., and 30s. per dozen. Free to London for cash with order.
EDWD. SAWYER, Hyde Nursery, Lower Edmonton.

FOR SALE, through want of room, Specimen **PALMS, DRACÆNAS, SHRUBS, YUCCAS, CAMELLIAS**, Standard BAYS, and large FERNs, all established in pots and tubs.—STROUD BROS., 182, Green Lanes, Finsbury Park, N.

FERNs! FERNs!!—Trade.—Greenhouse and Stove, 25 saleable sorts, in 24-in. pots, 12s. per 100; 10 best market sorts, in 48's, 6s. per doz.; stores, 6s. per 100. Large *Adiantum cuneatum*, value in fronds, 6s. and 8s. per doz. *Cyperus, Aralias, Grevilleas*, in 48's, good value, 6s. per dozen. *Palms, Ficus, & Dracenas*, 1s. each. *Hydrangeas, Pelargoniums, Marguerites*, 9d. each; in 48's, 1s. each. *P. tremula* and *A. cuneatum*, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—J. SMITH, London Fern Nurseries, Loughboro' Junction, London, S.W.

NEW IMPORTATION OF ORCHIDS

From BRAZIL and BORNEO.

PARTICULARS POST-FREE ON APPLICATION.

INSPECTION INVITED.

A. H. GRIMSDITCH, Importer,
5, CLAYTON SQUARE, LIVERPOOL.

**PURE WHITE,
EARLY**

ROMAN HYACINTHS,

FOR FORCING PURPOSES.

Our First Consignment is now to hand, in excellent condition.

DICKSONS Bulb Growers and Importers, **CHESTER.**

WARE and SONS'
ARE THE FLOWER POTS BEST.

THE SUSSEX POTTERY WORKS, UCKFIELD.

Quotations given for quantities. Carriage paid to any Railway Station, are Cheapest.
The Best
SAMPLES and LISTS FREE. Crates packed.

ESTABLISHED 1851.

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TWO-AND-A-HALF per Cent. INTEREST allowed on DEPOSITS, repayable on demand.

TWO per Cent. on CURRENT ACCOUNTS, on the minimum monthly balances, when not drawn below £100.

STOCKS and SHARES purchased and sold.

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For the encouragement of Thrift the Bank receives small sums on deposit, and allows interest, at the rate of TWO-AND-A-HALF PER CENT. per annum, on each completed £1.

BIRKBECK BUILDING SOCIETY.
HOW TO PURCHASE A HOUSE FOR TWO GUINEAS PER MONTH.

BIRKBECK FREEHOLD LAND SOCIETY.
HOW TO PURCHASE A PLOT OF GROUND FOR FIVE SHILLINGS PER MONTH.

The BIRKBECK ALMANACK, with full particulars, post-free.
FRANCIS RAVENSCROFT, Manager.

H. J. JONES' CONCENTRATED MANURE.

Is specially valuable to Growers of **CHRYSANTHEMUMS, POT PLANTS, and GARDEN PRODUCE** for Exhibition.

It adds colour and substance to Plants, Flowers, and Fruits. By its use crops of all kinds are more than doubled.

A trial order solicited.

Prices, Carriage Free for Cash with Order:—

7 lb.	14 lb.	28 lb.	56 lb.	112 lb.
5s.	8s.	12s. 6d.	21s.	36s.

H. J. JONES,

RYECROFT NURSERY, HITHER GREEN, LEWISHAM, S.E.

C. BEESON'S MANURE, composed of blood and bone. The best Fertiliser for all purposes. Sold in tins, 1s., 2s. 6d., and 5s. 6d.; also in air-tight bags, $\frac{1}{2}$ cwt., 6s.; 1 cwt., 10s. Full directions for use sent with each tin and bag. 1 cwt. and above sent carriage paid; cash with order.
C. BEESON, Bone Mills, St. Neot's, Hunts.

BONES! BONES!! BONES!!! Any size from dust to 1 inch. Dissolved Bone Compound, for Top-dressing. All at 10s. per cwt.; less quantity, 14d. per lb. Carriage paid on 1 cwt. Terms, Cash with Order. Special quotations for large Buyers.

E. S. WILES AND CO., Bone Crushers, St. Albans.

To Nurserymen, Gardeners, &c.

WANTED, the above to try **SPENCER'S NEW FERTILISER**, there being no acids or chemicals used in the manufacturing of this Fertiliser. Prize growers of hardwood plants and root crops will find this the only thing wanting, it being the most genuine and powerful Forcer yet introduced. Can be used in powder or dissolved in water—a special advantage. Sample cwt. bag sent to any part, price on application. Analyst report with each parcel.
Apply, I. SPENCER, 54, Spring Street, Hull, Yorkshire.

CONCENTRATED MANURE.**GLOBE FERTILISER.**

When using this Fertiliser for Flowers, Fruits, and Vegetables, results are marvellous. Plants grown in the open air are equal in Bloom and Beauty to those grown in hothouses.

Sold by Seedsmen, 1d. and 2d. Packets; 1s. 6d., 2s. 6d., 5s., and 10s. in Bags, or from the Sole Manufacturers, Carriage Paid. Cash with Order.

GLOBE MILL COMPANY, Stratford Market, London, E.



The only existing remedy that CURES and PREVENTS Mildew, Oidium, Black Rot, and other Cryptogamic Diseases of the Potato, Tomato, Beetroot, Vegetables, Vine, Roses and other Flowers, Fruit Trees, Mould in Hops, &c.

FOSTITE raises the Vegetation, destroys Caterpillars, Fleas, Leaf Lice, Slugs, and all other Vermin on Plants.

Effective Distributors also sold.

A child can perform the powdering.

Prospectus free on application.

Sole Shipper and Manufacturer—

JEAN SOUHEUR,

ANTWERP (Belgium).

Reliable Buying Agents wanted everywhere.

**BENTLEY'S WEED DESTROYER**

AWARDED PRIZE MEDAL,

(HIGHEST AWARD) AT THE

International Horticultural Exhibition,
LONDON, 1892.

SOLE MANUFACTURER—

JOSEPH BENTLEY,

CHEMICAL WORKS,

BARROW-ON-HUMBER, HULL.

WASPS, FLIES, &c.—DAVIS'S WASP

DESTROYER is a certain Destroyer of these Pests. B. R. Davis was the first to make this article, and introduced it publicly nearly thirty years ago. During these years, that made by him has never been known to fail. Post-free, 1s. 9d. and 2s. 9d. per Bottle, with instructions.

J. W. says:—"Please send another bottle. . . I have destroyed 40 nests with the last two bottles. . . It's a pity but what your Wasp Destroyer is not better known.—July 15, 1893."

Wholesale Agents, OSMAN AND CO., London.

PRIMULA, Double White, in 3-inch pots, per 100 or dozen.

B. R. DAVIS, Yeovil Nurseries, Yeovil.

ORCHID PEAT; Best Quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. **RHO-**

DODENDRON and AZALEA PEAT. Samples and Prices of WALKER AND CO., Farnborough, Hants.

GISHURST COMPOUND, Used since 1859 for Red Spider, Mildew, Thrips, Greenfly, and other blight; 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake, for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

RICHARDS' NOTED PEAT.

Specially selected and prepared for Orchids and all other plants. Also Loam, Sand, Artificial Manure, Insecticides, Shading, Netting for Fruit Trees, Bamboo Canes, Water Pots, and Garden Sundries of every description. Special quotations given for any goods sent carriage paid.

G. H. RICHARDS, Old Shot Tower Wharf, Lambeth, London, S.E.; Peat Grounds and Depots, Ringwood and Wareham. Address all letters to London Wharf.

EPPS'S Selected PEAT,

For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. **SPECIAL ORCHID PEAT**, in sack only.

Rich fibrous **LOAM**, superior **LEAF-MOULD**, Coarse, Crystal, and Fine **SILVER SAND**, **CHARCOAL**, **C. N. FIBRE REFUSE**, fresh **SPHAGNUM**, Patent **MANURES**, **FERTILISERS**, **INSECTICIDES**, and all other Garden Requisites. **Peat Moss Litter.**

The Original Peat Depot, RINGWOOD, HANTS.

ORCHID PEAT.

PREPARED ready for use, and in blocks; also

RHODODENDRON PEAT, **PEAT-MOULD**, **LEAF-MOULD**, **LOAM**, and **POTTING COMPOST.**

Price List of The Forester, Joyden Wood, Bexley, Kent.

SPECIAL TERMS TO THE TRADE.



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AND FOR ALL GLASS STRUCTURES THAT REQUIRE SHADING.

Sold in Packets containing 8 oz., sufficient for 125 feet of glass, 1s. each; or in Bags, 7 lb., 10s. 6d.; 14 lb., 20s.

Be sure to ask for "SUMMER CLOUD," it being the Original and only Genuine article. Each packet should bear the Trade Mark, as above.

SOLD BY ALL SEEDSMEN AND FLORISTS.

MANUFACTURERS:—

CORRY & CO., Limited,

HORTICULTURAL SUNDRIES MERCHANTS,

13, 15, & 16, FINSBURY STREET,
LONDON, E.C.

"FRIGI DOMO" Made of prepared Hair and Wool, a perfect protection to all Plants and Blooms. **CANVAS.** Cheaper than any kind of mat, and will last for years.

To be had from all Nurserymen and Seedsmen.

FOR PRICE LIST & PARTICULARS ADDRESS—

BENJAMIN EDGINGTON
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GARDEN REQUISITES.**COCOA-NUT FIBRE REFUSE,**

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.

SPECIALLY SELECTED ORCHID PEAT.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 5s. per sack; 5 sacks, 22s.; sacks, 4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, **PEAT-MOULD**, and **LEAF-MOULD**, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

MANURES, **GARDEN STICKS**, **VIRGIN CORK**, **TOBACCO CLOTH**, **RUSSIA MATS**, &c. Write for Price List.—
H. G. SMYTH, 21, Goldsmith Street, Drury Lane, W.C.

EARL'S COURT EXHIBITION.

Exhibition of
GARDENING and FORESTRY
THE GARDEN of LONDON.

JULY 26 and 27.

**GREAT SHOW OF ROSES AND FRUIT,
CARNATIONS, PICOTEEES, &c.**

Classes (Open and Amateur) for Grapes, Melons,
Peaches, Strawberries, Cherries, &c.

Meritorious Exhibits not named in the Schedule will be
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Prizes, Medals, and Certificates awarded for every Show.

All applications for entries, schedules, regulations, and further
information should be addressed to Mr. H. E. MILNER, the
Chairman, at the Offices of the Exhibition, Earl's Court, S.W.

ADMISSION to the Exhibition Building, Flower Show,
and the Central and Western Gardens, 1s.

OPEN DAILY, from 11 A.M. to 11 P.M.

SEASON TICKETS £1 1s.,

To be obtained from the usual Agents and the
Secretary.

**SPECIALITY—
FOLIAGE PLANTS
ICETON'S
LARGE PALMS.
PUTNEY,
S.W.**

NOTHING is too small.
NOTHING is too much trouble.

THE TRADE SUPPLIED.

D. SHUTTLEWORTH & CO., Ltd.,
(Albert Nurseries)

PECKHAM RYE, LONDON, S.E.,
and FLEET, HANTS.

DANIELS' DEFIANCE.

The Finest Variety of Cabbage in Cultivation.

It is early, short-legged, and compact, grows rapidly to the
weight of 10 to 15 lb., and is of the most delicious Marrow
flavour. Should be in every Garden. Sow now. Seed, our true
stock, with cultural directions, per ounce, 1s. 6d., post free.

DANIELS BROS.,

Seed Growers and Nurserymen, Norwich.

DANIELS' GOLDEN ROCCA ONION.

The most superb variety in cultivation; of fine globular
form, with golden yellow skin; often grows to the weight of
2 to 3 lb. each, and of a mild, delicate flavour. Splendid for
exhibition. Sow now. Seed, with cultural directions, per
ounce, 2s., post-free.

DANIELS BROS.,

Seed Growers and Nurserymen, Norwich.

PRIMULAS! PRIMULAS! PRIMULAS!

25th year of Distribution.

Williams' superb Strain, 1s. 6d. per dozen; 10s. per 100.
CINERARIAS, same Price; also DOUBLE WHITE PRIM-
ULAS, 6d. each. Package and Carriage free for Cash with
Order.—JOHN STEVENS, The Nurseries, Coventry.

MERRYWEATHERS' HIGH-CLASS GARDEN HOSE.



Horticultural Exhibition,
1892.

GOLD MEDAL

AWARDED TO

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FOR

SPHINCTER GRIP HOSE.

Other Makers awarded
Bronze Medal only.

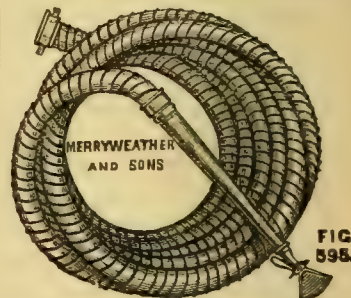


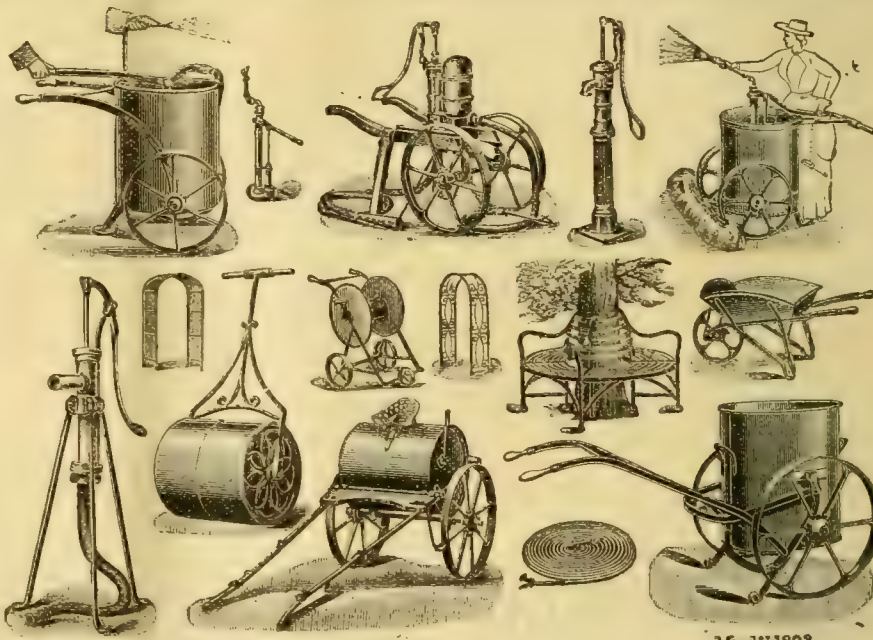
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MERRYWEATHERS, 63, Long Acre, London, W.C.

BOULTON & PAUL, Manufacturers, NORWICH.

Send for Illustrated Catalogue, free on application.



BOULTON & PAUL

May 1st 1893

Send for Illustrated Catalogue, free on application.

HORTICULTURAL BUILDER.

Every description of **GREENHOUSES, LIGHTS, &c.**

PIT LIGHTS.

CUCUMBER HOUSES.

Best quality and workmanship, 2 inches thick, 6 ft. by 4 ft.,
iron bar across, and very strong, 4s. 6d. each, 50s. doz., £10 for
50 lights, free on rail in London. Cash or reference with order.

Timber sufficient to build 100 feet by 12 feet house, Roof
Ventilators, Door, &c. Put on rail in London. Price,
£9 10s. Send for detailed specification, to

W. DUNCAN TUCKER, HORTICULTURAL WORKS, TOTTENHAM.

Send for Illustrated Catalogue, just issued.

The
"CLIMAX" WEED KILLER

Kills all Weeds on Garden Walks,
Carriage Drives, &c. Brightens
the Gravel. One application will keep
the Walks clear of Weeds for a whole season.
Acknowledged by all who have tried it to be the
most effective Weed Killer in the World. Compare the
prices and saving strength with others.

ONE GALLON MAKES SIX GALLONS FOR USE

PRICES.—
1 gallon, 3/- (one included); 5 gallons, 2/9 per gall.
10 gallons, 2/6 per gall, 20 gallons, 2/3 per gall, 40 gallons,
2/- per gall. Carriage paid on 5 gallons and upwards.

INSECTICIDE

NON-POISONOUS.
The only Insecticide that improves
and brightens the foliage while at
the same time it is a certain death
to all insects.

ONE PINT MAKES SIX GALLONS FOR USE

PRICES.—
In tins: 4 pints, 1/3; pints, 1/9.
quarts, 3/-; 4 gallon, 5/-; 1 gallon,
9/-; 6 and 10 gallon drums, 8/-
per gallon. Carriage paid.

SUMMER SHADING

Convenient, inexpensive, and
easily applied, lasting, and yet
easily removed by rubbing at
the end of the summer.

PRICES.
In packets containing 8oz., 6d.,
16oz., 1/- (postage 8d. extra).
and in 7lb. tins, 5/-.

BLIGHT PREVENTOR

The most effective remedy for
Blight or Fungus on Tomatoes, &c.
Will not injure the Plants or
Fruit.

PRICES.
In packets, 8oz., 6d.; 16oz., 1/-
(postage 8d. extra); and in 7lb.
tins, 5/- each.

**NO TOMATO GROWER
SHOULD BE WITHOUT IT.**
Its use will save pounds worth
of Fruit.

COMPLETE SATISFACTION GUARANTEED TO USERS OF THE "CLIMAX" PREPARATIONS.

PREPARED BY THE BOUNDARY CHEMICAL CO. LIMITED, LIVERPOOL.

WEBB'S' EMPEROR CABBAGE.



THE EARLIEST AND BEST.
6d. and 1s. per packet,
1s. 6d. per ounce.

From Mr. R. LYE, Gardener to W. H. KINGSMILL, Esq.,
"Symonton Court."—"I have grown a great many varieties
of Cabbage, but I consider Webb's Emperor the best of them
all—in fact, I do not think there is another variety in
cultivation to equal it. I planted out a bed of 850 plants
last autumn, and not one went to seed, but all turned out
splendidly."

	Per ounce.
EARLY NONPAREIL CABBAGE	6d.
ENFIELD MARKET	6d.
EARLY RAINHAM	9d.
RED DUTCH	9d.

ONION.

	Per pkt.	Per ounce.
WEBB'S RED GLOBE TRIPOLI	6d.	1s. 6d.
LARGE FLAT RED TRIPOLI	6d.	9d.
GIANT ROCCA	6d.	10d.
WHITE LISBON	6d.	6d.

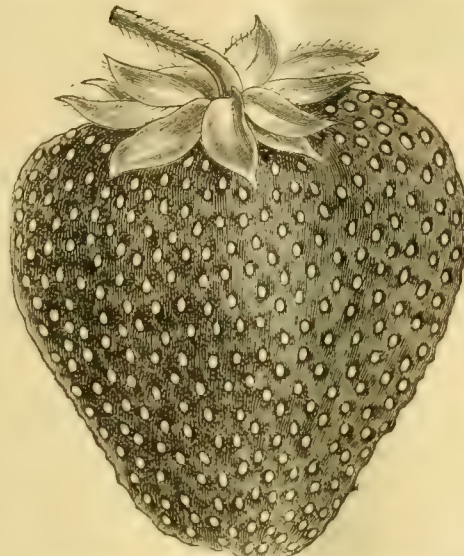
All Garden Seeds Free by Post or Rail.

Seedsmen by Royal Warrants to H.M. the Queen and
H.R.H. the Prince of Wales,

WORDSLEY, STOURBRIDGE.

STRAWBERRIES.

ALL MUST HAVE
LAXTON'S "ROYAL SOVEREIGN." (New 1893.)
THREE FIRST-CLASS CERTIFICATES.
An earlier, higher quality & Improved Sir J. Paxton.



I consider this by far the finest early Strawberry yet intro-
duced. Fruit of the largest size, brightest glossy scarlet colour,
flavour rich (quite equal to British Queen), ripens with Noble;
a splendid cropper and grower, and I consider it to be the long-
sought EARLY, HIGH-FLAVOURED & IMPROVED SIR J. PAXTON,
a splendid forcer, and in every way worthy of its name. Hand-
some coloured plate, now ready, 6d. (gratis to Customers).
Open Ground Runners, 25 per 100; 50, £3; 12, 30s.; 6, 20s.
(Runners, in small pots, ½ price extra).

LAXTON'S No. 1 (New, 1893).

The Earliest of All Strawberries. Unquestionably the earliest
in the market preceding May Queen, Ruskin, Black Prince,
&c., by some days. Fruit of good size, bright scarlet, firm, and
of excellent quality. Very prolific, and of much value where a
few days gain is now so important.

Price, Open Ground Runners, 100, £3; 50, £2; 12, 21.
(In small pots, ½ price extra).

LAXTON'S SENSATION (New, 1892).

First-class Certificate Gardening and Forestry Exhibition,
May 10, 1893. An enormous second early variety, of good
flavour, and probably the largest Strawberry ever introduced.
A remarkably strong grower, and producing fruit in wonderful
clusters. Will prove a welcome addition to the list of good sorts.
Forces splendidly. £2 per 100; 8s. per dozen. (In small pots,
½ price extra). The best varieties of recent introduction.

LAXTON'S SCARLET QUEEN.

First-class Certificate. The best first early—very early.
Fine colour and shape, and the richest flavour. Habit strong,
a very prolific variety, a splendid early table and market fruit.
Open Ground Runners, 15s. per 100; 3s. dozen.
(In small pots, ½ price extra).

LAXTON'S COMPETITOR.

An excellent, very large, and prolific Strawberry, following
closely on the heels of Noble, with a distinct Apricot-like
flavour, a wonderful bearer and plant; one of the hardiest.
10s. 100; 2s. 6d. dozen. In pots, 21s. 100; 4s. dozen.

LAXTON'S LATEST OF ALL.

The best late Strawberry, and the latest and best late variety.
A seedling from British Queen, but much later. Flavour grand.
8s. 100; 2s. dozen. In pots, 21s. 100; 4s. dozen.

Laxton's Noble, the grandest early, 5s. 100; 1s. 6d. dozen.
Laxton's Commander, one of the best main crops, 6s. 100;
2s. dozen.

John Ruskin, a good early hardy variety, 7s. 100; 2s. dozen.
La France, a fine French variety, F.C.C., 15s. 100; 3s. dozen.

The following best varieties for forcing or early planting, can
be supplied STRONG in pots, at once, per 100:—

A. F. Barron	21s.	Competitor	21s.	President	18s.
Nicaise	21s.	Keen's Seedling	18s.	Napier	21s.
British Queen	18s.	King of Earlies	21s.	Paxton	21s.
Dr. Hogg	22 6	Grosse Sucree	18s.	Scarlet Queen	2 6
Jas. Veitch	18s.	Latest of All	21s.	Viscountess	18s.
Ruskin	21s.	Marguerite	21s.	Waterloo	21s.
Commander	21s.	Noble	18s.		

Also strong Open Ground Runners can now be supplied at
usual prices, of—Nicaise, Sucree, Viscountess, British Queen,
Paxton, President, Albert, Captain, King of Earlies, Marguerite,
Dr. Moore, Dr. Hogg, Stirling Castle, Sharpless, A. F. Barron,
Waterloo, Countess, Jas. Veitch, Unser Fritz, Elton Pine, Lucas,
Filbert Pine, and all other best sorts, English and Foreign.

(About 200 vars. in stock).

Usual Allowance to the Trade, for Nett Prompt Cash.

DESCRIPTIVE LISTS ON APPLICATION TO

THOMAS LAXTON, Seed
Grower, BEDFORD.



THE Gardeners' Chronicle.

SATURDAY, JULY 22, 1893.

HOME-GROWN FRUIT.

THE condition and the prospects of the fruit
crops this year will excite unusual interest,
owing to the very exceptional season we have
passed through. That the conditions last autumn
were not unfavourable, was shown by the extra-
ordinary abundance of bloom in the spring.
Spring frosts, which are usually so destructive
to the hopes of the fruit-grower, were this year
conspicuous by their absence—at least, in the
south. Then followed a dry hot season, the like
of which few of those now living remember.
This was not exactly the condition one would
consider as propitious to the young-growing
fruit, and in point of fact many flowers and
embryo fruits did shrivel and drop, whilst grubs
and insect pests of various kinds seemed to revel
in the heat, and effected a considerable thinning.

In spite of all this—in consequence of this,
we suppose we ought to say—the fruit-crop returns
are certainly much better than usual. We may
refer the reader to other columns for the full details.
Here we may be allowed to offer on the part of
our readers and ourselves, our hearty thanks to the
numerous correspondents in all parts of the king-
dom, who have filled in our return-forms. These
gentlemen have, for the most part, rendered us a
like service for many years, so that their
lengthened experience in the same locality goes
far to secure an accurate representation of the
facts of the case.

At the same time, we are glad to find additional
names in additional districts, for the larger the
number of observers, and the wider the area of
their observations, the more correct is likely to
be our Report. The counties have been arranged
in districts corresponding to those adopted by the
Meteorological Office for agricultural purposes,
and are the same as those used in the weather
reports published weekly in our columns. Re-
ferring the reader to other columns for the full
details, we may here briefly summarise the general
result.

Commercially speaking, the two most im-
portant crops are Apples and Plums. Concerning
these crops, our reports are as follows:—

	Apples.		Over.	Under.
Scotland	28	7	14	
England and Wales	99	62	39	

	Plums.		Over.	Under.
Scotland	18	17	11	
England and Wales	66	80	49	

So far as other crops are concerned, PEARS
are generally reported as above average, and of
good quality.

CHERRIES over average, and of good quality.

PEACHES and NECTARINES much over average,
and generally of good quality.

SMALL FRUITS, including Gooseberries and
Currants, slightly over average.

STRAWBERRIES a fair average, but a very
short season.

Budding Season.

WM. PAUL & SON

Respectfully solicit orders for the following first-class
NEW ROSES,
their introductions of 1893 and 1892, plants of which
can now be supplied in pots:—

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best Seedling Rose at International Horticultural Exhi-
bition, 1892; several First-class Certificates; rosy flesh
suffused with tawny copper; distinct and excellent.
1s. 6d. each.

PRINCESS MAY (Hybrid Tea).—Award of
Merit R.H.S., Certificate of Merit International Horticul-
tural Exhibition; clear soft opaque pink; an excellent
pot Rose, extra fine foliage. 10s. 6d. each.

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ficates; fine satin pink, magnificent and effective. 3s. 6d.
and 5s. each.

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Tea).—Award of Merit and First-class Certificate; flesh
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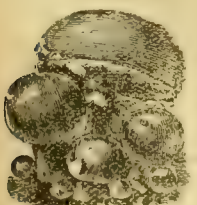
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1892, 2s. 21s.

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A large general Collection of Roses in pots for
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Testimonials. None genuine unless
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signature attached.

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Highgate Nurseries, London, N., and Barnet, Herts.

NUTS.—Filberts about average; in some districts, over. Walnuts average, and good in quality.

On the whole, then, we are justified in chronicling the fruit crop as unusually good.

NEW OR NOTEWORTHY PLANTS.

LILIUM JAPONICUM, Thunb., var. *ALEX-ANDRÆ*, Hort. Wallace.*

This fine Lily was shown both by Messrs. Wallace and Veitch at Chiswick last Tuesday, and was given a First-class Certificate of the Royal Horticultural Society. It came from Japan under the name Ukeyuri. Obviously it should be classed amongst the varieties of *L. japonicum*, Thunb. non Sims (*L. Kramerii*, Hook. fil.). From typical *L. japonicum*, as figured by Elwes (*Monograph*, t. 14) it differs principally by its longer style and broader leaves. *L. Kramerii*, Hook. fil., in *Bot. Mag.*, t. 6058, and *L. Barrianum* are forms of the species, with pale red flowers. *L. japonicum* has been supposed to be a hybrid, but we have now in the Kew herbarium wild specimens gathered by the three different collectors. Elwes considers it likely to be a distinct species, occurring abundantly in some parts of Southern Japan. The plant figured as *japonicum* in the *Botanical Magazine* is a form of what is now called *Brownii*. We only found this out for certain by borrowing from Upsala Thunberg's type specimen.

Bulb like that of *L. longiflorum*. Stem green, glabrous, stiffly erect, $1\frac{1}{2}$ foot long, bearing two to three flowers, which are sometimes horizontal, sometimes suberect when fully expanded. Leaves scattered, lanceolate, dull green above, paler green below, distinctly 3 to 5-nerved, acute, narrowed at the base to a short ascending flattened petiole, the central ones 3 to 4 inches long, by 1 inch broad. Pedicels 1 to 2 inches long, much thickened upwards, sometimes bearing a small linear leaf, but usually naked. Flower openly funnel-shaped, slightly scented, pure white, tinged with green outside towards the base and on the keel of the segments, 5 to 6 inches long, 7 to 8 inches broad when fully expanded, the segments beginning to spread $1\frac{1}{2}$ inch above the base; inner segments oblong, much broader than the outer, 2 inches broad at the middle. Stamens 2 inches shorter than the perianth; anthers linear, dark brown, $\frac{1}{2}$ to $\frac{3}{8}$ inch long; pollen dark yellow. Style much over-topping the anthers before they fall. *J. G. Baker, Herbarium, Kew.*

AGLAONEMA ROTUNDUM, N. E. Br., n. sp.

Stem about $\frac{1}{2}$ of an inch thick, green. Petiole 1 to $1\frac{1}{2}$ inch long, sheathing from $\frac{1}{2}$ to $\frac{3}{4}$ of its length, green. Leaf-blade, $3\frac{1}{2}$ to 5 inches long, $3\frac{1}{2}$ to 4 inches broad; orbicular-ovate or very broadly ovate, subacute, the base rounded, or very shortly and broadly cuneate at the insertion of the petiole, softly coriaceous in texture; midrib flat above, prominent and rounded beneath; primary veins about five on each side of the midrib, three being rather close together at the base, and the other two about 1 inch apart, all strongly curved, impressed above, prominent beneath, the secondary veins scarcely less conspicuous, upper surface shining dark green, with the midrib and sometimes some of the principal veins of a clear bright pink; under surface claret-purple, with greenish mid-rib and rosy-purple veins. Peduncle stout, erect, $2\frac{1}{2}$ inches long, and about $2\frac{1}{2}$ lines thick, green. Spathe large, abruptly bent forwards, $2\frac{1}{2}$ to $2\frac{3}{4}$ inches long, 1 to $1\frac{1}{2}$ inch broad, inflated, cowl-shaped, completely enclosing the spadix, acute, the basal part shortly convolute, light green inside and out. Spadix (including

the short stipes), $1\frac{1}{4}$ inch long, bent forwards, but not protruding from the broad opening of the spathe; female part $\frac{1}{2}$ inch long and 4 lines thick, the ovaries pale yellowish-white, arranged in 2 or 3 cycles, with white neuter organs above and below them, one-celled with one erect anatropous ovule, stigma discoid; male part very large, 1 to $1\frac{1}{2}$ inch long, $\frac{1}{2}$ inch thick, cylindric-oblong, obtuse, white.

This is one of the most distinct species of the genus known to me, its roundish ovate leaves, and large—for the size of the plant—inflated hood-like spathe, enclosing the very stout spadix, distinguish it from all others. Horticulturally, the plant will be valued for its glossy-green leaves, set off by their very clearly-defined pink midribs, a kind of coloration that, so far as is known to me, does not occur in any other Aroid. The native country of this plant is not definitely known to me. Messrs. J. Veitch & Sons have it in cultivation, and first sent a specimen of it to Kew in 1889, with the information that they imported it from Calcutta, but did not know its origin; yet I think it is not improbable that it comes from some part of the Malay Peninsula, or



FIG. 18.—*CYPRIPIEDUM* × *CLINKABERRYANUM*.

one of the islands along its coast. The specimen first sent was too imperfect for description, but as it has recently flowered again with Messrs. Veitch & Sons, who kindly sent a specimen, I am enabled to describe it. *N. E. Brown.*

CYPRIPIEDUM × *CLINKABERRYANUM* (PHILIPPINENSE ROEBELII × CURTISII).

A single plant of this fine hybrid was raised by Messrs. Pitcher & Manda, the American nurserymen, and acquired by that enthusiastic orchidist, the Hon. Chas. G. Roebeling, of Trenton, N.J., U.S.A., who is known the world over as the builder of that marvellous structure, the Brooklyn suspension bridge, and other triumphs of engineering skill. The variety is named by request in honour of his gardener, Mr. Clinkaberry, whose fame as an Orchid grower is as well-known here as in the States. A fresh flower received furnished material for the following description: Scape hairy, tinged with rose; ovary reddish on the ribs, green between. Upper sepal white, with about twenty well-defined purple lines reaching to the upper margin, $2\frac{1}{2}$ inches long, $1\frac{1}{2}$ inch broad. Lower sepals together rather

smaller than the upper, greenish-white, with a few faint reddish lines. Staminode nearly orbicular, with a notch or depression in the upper edge. Petals 4 inches long by $\frac{1}{2}$ inch broad, creamy-white, spotted over the entire surface with purplish-crimson. The labellum is large, and partakes much of *C. Curtisii*, especially in the narrow infolded side lobes, and the general helmet-shaped contour, whitish, tinged with dull rose, the darkest portion being the face.

It is a very fine hybrid, well worthy to rank with the best forms of that favourite, *C. × Morganian*. *J. O'B.*

CALADIUM VENOSUM, N. E. Br., n. sp.

This, and the following species (*C. rubescens*), are two novelties quite distinct in character from any other *Caladiums* in cultivation, except *C. Schomburgkii*, to which species they are nearly related, but, at the same time, perfectly distinct. They are important horticultural introductions, because of being likely to produce by hybridisation a new race of garden forms of these useful decorative plants; and Messrs. F. Sander & Co., to whom I am indebted for the material from which these descriptions are made, are to be congratulated upon their acquisition, for it is a long time since anything so decidedly different from the ordinary form of *Caladium* has been introduced. They do not appear to be large-growing species, and both are prettily variegated, one with light yellowish-green, the other with crimson. They have been imported from Brazil by Messrs. F. Sander & Co., St. Albans. The following are the descriptions:—

Petioles 8 to 10 inches long, terete, not striate, rather slender, 3 to 4 lines thick at base, pale green, densely covered with black dots and short lines, except towards the apex, giving them a very dusky appearance. Leaf-blade 7 to 10 inches long, 3 to $4\frac{1}{2}$ inches broad at the base, elongate, ovate-deltoid, very slightly peltate or subpeltate at the truncate or very broadly rounded base, with a slight cup-shaped depression at the insertion of the petiole, the basal angles broadly rounded, thence gradually narrowed in a nearly straight line to a very acuminate apex; the nerves are 5 to 8 on each side of the midrib, the one or two inner pairs arising from the midrib much below the middle, all the rest basal, the outer nerves more or less branching, all flat above, very prominent beneath; upper surface dark green, not shining, with the course of the nerves variegated with light yellowish-green, and the margin very narrowly edged with red, the under-side of an uniform glaucous green. Peduncle 6 to 7 inches long, $\frac{1}{4}$ inch thick, subterete or somewhat flattened on one side; light green, marked on the lower half with short black lines, and dots like the petioles, but not so densely. Spathe 3 to $3\frac{1}{2}$ inches long, the tube $1\frac{1}{4}$ to $1\frac{1}{2}$ inch long, 9 to 10 lines in diameter, obliquely ovoid, much inflated, light green, with or without a purple blotch at the base inside; the limb $1\frac{1}{2}$ to 2 inches long, erect, convolute in the basal half, only the upper part being open, acuminate, white on both sides; spadix about two-thirds as long as the spathe, sessile; female part $\frac{2}{3}$ inch long, stout, conical, the ovaries all united by their summits, yellow, two-celled, with four to six anatropous ovules in each cell; stigma depressed, neuter part about $\frac{1}{2}$ inch long, and the male part about $1\frac{1}{4}$ inch long, terete-conoid, obtuse. A native of Brazil.

CALADIUM RUBESCENS, N. E. Br., n. sp.

Petiole 5 to 6 inches long, 2 lines thick, terete, finely striate, uniform dull blackish, the short sheath whitish densely variegated with blackish. Leaf-blade 5 to 6 inches long, 2 inches broad, elongate ovate-lanceolate, acuminate, margins very wavy, the base rounded or shortly cordate, the basal lobes or auricles $\frac{1}{2}$ to $\frac{1}{4}$ inch long, strongly cucullate, with a linear acute sinus between them; nerves five to seven on each side of the midrib, the inner pairs arising from the midrib much below the middle, the rest basal, all flat above, prominent beneath; upper surface with all the central area and nerves crimson, and the borders green, opaque, with a faint glaucous hue overspreading the whole, perhaps more evident on young leaves; under surface coloured like the

* *Lilium japonicum*, Thunb., var. *L. Alexandrie*, Hort. Wallace. — Bulb globose magnitudine medioeri; caule viridi glabro sesquipedali 2-3 floro; foliis sparsis lanceolatis 3-5 nervatis in petiolum brevem attenuatis; pedicellis brevibus clavatis; perianthio semipedali late infundibulari albo extus viridi (uncto segmentis interioribus exterioribus valde latioribus; staminibus perianthio conspicue brevioribus; antheris brunneis; stylo staminibus superante. [— *L. Ukeyuri*, *Journal of Horticulture*, July 20, 1893.]

upper, but paler and more evidently glaucous, and the blackish colour of the petiole extends a little way along the midrib. Peduncle $3\frac{1}{2}$ to 4 inches long, slender, blackish. Spathe $3\frac{1}{2}$ inches long, the tube 1 inch long, 8 to 9 lines in diameter, obliquely ovoid, inflated, glaucous green, with a blackish stripe on the back that runs from its base to the apex of the limb, which is $2\frac{1}{2}$ inches long, very acuminate and milk-white in colour. Spadix 2 to $2\frac{1}{4}$ inches long; female part $\frac{1}{2}$ inch long, obconic (narrowed towards the base); neuter part about 4 lines long, constricted, male part terete or sub-fusiform obtuse, dull waxy-white. A native of Brazil. *N. E. Brown.*

straw, &c., any roots that may have been met with during the digging, the job of undermining has to be commenced. In doing this, it is best to leave at each corner of the mass of earth, pillars of the same, 1 foot square if the soil be solid, and more if it be loose.

The part dug out from beneath the ball should be such as will leave the mass from $1\frac{1}{2}$ to 2 feet thick. After the middle portion is cut away, and the soil thrown out of the trench, the bottom of the ball being cut level, some stout planks are placed beneath it, and "blocked" up by using bits of thin flooring deal, 8 to 10 inches long, one on the top of the other,



FIG. 19.—A WEEPING ASH READY FOR REMOVAL.

WEEPING ASH TREE READY FOR REMOVAL.

THE illustration given above (fig. 19) shows a tree excavated and undermined, with ball intact, and enclosed with boards, waiting for the trolley or transplanting machine, to take it away to its new station. The method usually followed in the case of large trees which have to be transplanted to a considerable distance, and which involves the use of wheeled carriages of some kind, is to mark out the size of the mass of soil containing the roots—say a square of 3, 4, 5, or 6 feet, as the case may demand—and throw out a trench, with upright walls, on the side next to the roots, and from $2\frac{1}{2}$ to 3 feet broad. This trench must be as deep as the majority of the roots go, and need rarely be more than $3\frac{1}{2}$ feet deep. Having done this, and secured and wrapped in wet

till the planks are fixed close up under the ball. The corner pillars are now cut away, one at a time, and similarly supported.

This being done, a stout beam is placed under the boards so that they all of them rest on it, and the sides surrounded by staves or short boards or stout canvas, and roped tightly. It is now ready for removal, and may be swung by means of chains on a tree-transplanting machine, or removed if it be not very large, by means of a trolley. The machine is best, there being but little disturbance of the ball, and the latter can be lowered on to a set of blocks as before, these being taken out bit by bit until it rests on the boards alone, which can be drawn out one at a time, always carefully plugging with soil, the hole left by drawing out one. The photograph from which our figure was taken was kindly sent by Mr. T. H. Crasp, late gardener to Lord Wimborne, Canford Manor.

KEW NOTES.

Hippeastrum brachyandrum is a large handsome flowered species of the *Habranthus* section, of which very little was known until about three years ago, when Mr. Bartholomew of Reading sent it in flower to Mr. Baker, and subsequently sent seeds of it to Kew. From these a batch of plants were raised which are now planted in an open sunny border outside, and several have already flowered. The flowers, which are produced single on scapes 1 foot long, are erect, 4 inches long, shaped like a *Colchicum speciosum*, and coloured rosy-lilac, deepening to deep crimson at the base. The leaves are linear, 1 foot or so long, and the bulb is egg-shaped. A promising plant for a sunny bed outside in summer; a good companion for *Zephyranthes carinata*.

Sansevieria Kirkii.—This plant may now be seen in flower in the Palm-house at Kew. It was originally sent to Kew in 1879, by Sir John Kirk, who had obtained it from the mainland near Zanzibar, and flowered it in his garden at Zanzibar. The longest leaf on the plant sent to Kew measured 9 feet. It has since been largely distributed to the Colonies from Kew as a useful fibre-yielding plant, the report of Messrs. Ide and Christie on specimens submitted to them stating that the fibre was "bright, clean and strong, and in every way a most desirable commercial article. It would compete with the best Sisal Hemp for rope-making purposes. Value £30 per ton." As a garden plant this *Sansevieria* is not without value, its stout lanceolate mottled green leaves and large heads of greyish long tubular flowers being attractive.

Faradaya splendida and *Lonchocarpus Barteri*, two strong-growing stove climbers, are in flower on the roof of the Palm-house, and may be seen from the gallery. They are excellent subjects for clothing pillars or gallery-rails in very large plant-houses. *Aristolochia ornithocephala* is another most useful plant for the same purpose, and it flowers most profusely.

Solanum Wendlandii and *S. Scaforthianum* are better this year than ever. They are grand plants, the former deserving, in my opinion, to rank with the best dozen stove climbers. *W. W.*

A JOURNEY THROUGH SOUTH FRANCE, ITALY, AND SWITZERLAND.

(Continued from vol. xiv., p. 741.)

September 13. At Florence.—Drove to Poggio Gherardo to see Mr. Ross' collection of Orchids, after breakfast. They are grown over tanks of water in shaded glasshouses, and we were surprised to find their temperature as much as 10° cooler than it was outside at mid-day.

September 14. — Visited botanical gardens at Florence, famous from the days of Micheli, 150 years or so ago. The oldest tree in the garden is a venerable Yew, said to have existed here since the garden was founded by the ancient Apothecary's Society of Florence. It is 50 feet high, its lower branches sweeping the ground. Here is also a fine Cork Oak (*Quercus suber*), with a clear stem of 20 feet, and at its thickest diameter the bole is 3 feet through, and the tree is 50 feet in height. In one of the hot-houses is a splendid *Cocos coronatus*, with five ranked, pinnate leaves. There is also a unique specimen of *Pandanus sylvestris*, and a noble plant of *P. odoratissimus*. *Cycas revoluta*, with a branched head, has a clear stem of 5 feet high. *Clusia rosea* has a stem 10 to 15 feet, and *C. flava*, with larger leaves, is nearly as tall. Here are also noble *Plumierias*, with stems 10 to 20 feet in height. A specimen of *Theobroma Cacao*, 12 feet high, flowers and fruits in the garden. There is a very fine plant of *Phoenix canariensis*, 20 feet high; and a plant of the rare *P. humilis* has a clear stem of 6 feet, and very handsome plumose head. Outside, there is a fine tree of *Tilia argentea*, the Silver-leaved Lime tree, which seems the best suited of all the varieties for a hot summer climate. The Japanese *Salisburia*, or *Ginkgo biloba*, fruits here freely every year; and there

is a stately old tree of the Hop Hornbeam (*Ostrya virginica*).

September 17. At Milan.—Went to the University and saw the botanical gardens. Here we saw a stately tree of Ginkgo, 90 feet in height, with a bole 3 feet in diameter, and clear for 30 feet. It is a male tree, but near it is a female tree 50 feet high, which was covered with its yellow drupes, not unlike the fruits of *Abelia Caffra*, or those of the Green Gage Plum. It is a cool and shady, sequestered old garden, hidden away behind the great tower of the observatory. *Magnolia Yulan* is 40 feet in height, so also *M. grandiflora*. A Black Walnut (*Juglans nigra*) is 50 to 60 feet in height, with a perfect trunk clear for 30 feet, and nearly 3 feet in diameter at its base. There is a very old Lebanon Cedar here, and a *Cupressus horizontalis*, 70 feet high, having a clear stem 16 inches in diameter.

September 18.—At Pellanza, Lago Maggiore.—Visited Isola Bella and Isola Madre, both islands laid out as gardens around palatial villas. Both contain a very rich and interesting garden flora, but the last-named is by far the more natural and pleasing. At Isola Bella we saw the Japanese Umbrella Pine (*Sciadopitys verticillata*), 14 feet high; a Camphor Tree, 60 feet high, with a stem 4 feet in diameter; *Olea fragrans*, 30 feet high, and scenting the air for yards with its small white flowers; and there are groves of Oleanders of all colours, and some bushes are 30 feet high, as also are Camellias. *Magnolias* are 60 feet high, and perfect to the ground. The Tea shrub (*Thea viridis*) is 9 feet high, and all in the open air, as if at home in India or China. On the Isola Madre the vegetation is similar, but much more naturally grouped.

September 19.—Left Domodossolo by diligence for Brieg, a long but delightful mountain drive. Saw here *Opuntia vulgaris* on dry rocks, beside the hot and dusty road. The Sea Buckthorn is abundant in river beds, covered with coral berries.

September 20.—Brieg to Martigny by rail, thence by diligence over the Tête Noire Pass to Chamounix. A very lovely drive, the mountain sides in places being coloured crimson with the foliage of *Vaccinium Myrtillus*. Saxifrages of several kinds were seen, also great tufts of the "Parsley Fern" (*Allosorus crispus*). On the mountain side *Gentiana lutea* was in places very abundant, and the short grass was studded with the stars of the dwarf Star Thistle (*Carlina acaulis*).

September 21, 22.—Left Chamounix at six o'clock in the morning for Cluses, through a fertile and well-peopled valley. The Apple trees near the villages were laden with fruit, and the last of the crops only remained in the little cultivated patches. Everywhere we heard the jingle of cow-bells, and noted the Ash trees stripped of their leaves, which are here used as fodder. At Cluses we took the train for Geneva, and reached that place. We visited the Botanical Gardens, where alpine plants are well grown in a special enclosure on eight long ridge-like rockeries. Aquatic plants have a special tank in two divisions, supplied by a constant flow of pure water.

On one of the outer walls here we saw the curious and new *Spinovitis Davidii* for the first time. It is a shrubby Vine, of which but little is as yet known, except that it grows luxuriantly at Geneva, and that it is a native of Northern China.

We next went to see the "Jardin Alpin" of M. Correvon, but we did not find the owner at home. Here we saw many alpenes, mostly in pots, as if for sale.

AFTER-THOUGHTS.

One of the main objects of our journey was to see the gardens of the Riviera, and, notwithstanding the fact that we saw them at their worst, we were delighted, and found much to admire. The almost tropical character of the climate permits of many of our stove plants, and most of our greenhouse plants, being grown in the open air. The Palms and Bamboos, the Agaves and Musas, and the great Reed (*Arundo Donax*) lend an exotic luxuriance to the sunburnt rocks, the sheltered terraces, or the more gentle slopes and declivities that fringe the shore of the blue sea. To see the gardens of the Mediterranean coast

at their freshest and best, one must leave our cold and murky fogs and mists behind us in December, and in less than two days we can reach this region of sunshine and of flowers. From a London frost and fog into a land of sunshine and Roses, Violets, Anemones, and Narcissus, is a great transition, and one that once made can never be forgotten. All along the shore, from Marseilles to Genoa, and beyond, may be described as the Land of the Olive and Fig, as also of the Vine. We saw this lovely district in all its fertility, rich in corn and wine and oil, but its reign of flowers, the flush of scented spring that, coming in our mid-winter, makes this district so attractive to northern minds, had long passed away. But flowery as are the winter gardens of the Riviera, even at their best there is an absent charm amid the groves and avenues of Palms, and a craving want is felt that no luxuriance of stiff Agave, or elegant Bamboo, can dispel. In the steep hill side, or rocky gardens, the soft and restful verdure of our grassy lawns is absent, if not always at least during the hottest and driest portion of the year, being sown annually and not permanent, as with us at home. As we gazed on the richness of exotic vegetation, and heard the cool rustle of the Palm leaves overhead, we could not avoid asking what had become of the native trees and shrubs—the natural vegetation of this sunny shore? Where were the Oaks, the green and feathery Pines, the wild Olives, the Lenticulus, Myrtle and Smilax, the Heaths and Tamarisks, once wild and luxuriant where now alone the alien reigns? Where was that subtle fitness or keeping, only possible when native tree or shrub, is rooted in its native soil? Now and then we saw noble remains of the native flora existing, and can never forget its exquisite charm; to wit, the Poplars and Willows of the Soane Valley; the groves of Aleppo Pines in the parks at Marseilles, the gigantic forest of Stone Pines at Viareggio, the Myrtles and Smilax, the Lenticulus and Heath and Asparagus, which forms a delightful jungle beneath the patriarchal Olives at Cap d'Antibes. The fact is, a good deal of sameness is common to all the gardens of the Riviera, and changes are rung on the notes eternal of Palm, Bamboo and Agave or Oleander, until one is glad of a restful day among the Oaks and Pines, or even among the Sweet Chestnut groves of the mountain side. The gardens at the Villa Pallavicini (and those on the Isola Bella) are wondrously rich in giant Camphor trees, Camellias and Tea Shrubs, Bamboo and Palms, but to enjoy these, one must endure sham ruins and fictitious monuments, and the trick and jugglery of water-squirts set here and there as traps for the unwary. Even in the best of these southern gardens there is evidence of too much artifice and of imitation, and too little of natural effects. The bizarre and the complex have been employed in place of the simple, the direct methods of garden art, and the result is disappointing. Isolated specimens and groups of certain plants we saw that claimed admiration, but in most of the gardens the real pictures were seen beyond their walls, rather than within their boundaries.

Of the abundance, quality, and cheapness of fruit in South France and Italy, one could not well say too much; nor do I think it ever will be possible for us to forget the delicious Melons at Marseilles, or the luscious Figs and Muscat Grapes of Italy. Even after being accustomed for years to Covent Garden and its wealth of delicious fruits, we were not quite prepared for the regal plethora of fruit, such as is to be seen in the market at Venice, or being taken hither and thither by the boat-load along the olive-green water of its many canals. Grapes, Peaches, Figs, and Melons, by the ton; and Tomatoes, setting the little vegetable shops and stands on fire, as it were, with their brilliant colour, everywhere. Italy is delightful in the autumn when the contadini are busy with the vintage, and the vivid orange-red cobs are garnered, or hung out to dry in the sun, on the walls of cottage and farm, lending an indescribable glow of colour to the whitewashed walls. Now and then you see the great meek-eyed bullocks at work

among the festooned Vines, great creamy fellows in quaint trappings, and apparently as gentle as they are strong. The terraced Olive-grounds, with their flickering shade and eternal greyness, were delightful, and it is nice to wander amongst the Vines early in the morning, or to rest at noon beneath the shady Fig trees, and get a fruit-luncheon or a siesta, as happy, and for the time being, as careless as the lizards of green and grey and gold that start at one's footfall, and sit here and there like shadows in the sunshine on the hot rocks, or on the old grey walls.

In conclusion, I should like to say how much I was indebted on this journey to the courtesy and camaraderie of my friends Dr. Wright, of the Dublin University (T. C. D.), and Mr. F. W. Moore, A.L.S., of our beautiful Glasnevin Botanic Gardens here in Dublin. I may also say that I was enabled to undertake this most interesting tour through the generosity of the Board of Trinity College, Dublin, who made me a special grant for the purpose from their Tercentenary Funds. F. W. B.

THE GENUS CISTUS.

This is a genus of beautiful shrubs, none too hardy, but living through ordinary winters. It is a pleasure to see that the many species and varieties are being again grown as they were before the fashion of flower-gardening known as "carpet-bedding" absorbed the attention, and misdirected the energy of the gardener. Doubtless many varieties have been lost to us, but their cultivation again will induce hybridists to get new forms. The principal points in the culture of the *Cistus* is sun and a warm soil; given these, the dwarf species and varieties grow to perfection, making a great show of bloom in the summer months. They cross freely, but their rather tender character is against their indiscriminate use. In very hard winters the plants get cut up, and, not infrequently, killed. They have, however, weathered fairly well the exceptional severity of the past few winters, damp being the greatest foe. Keen easterly winds, fogs, and wet after a spell of frost, are more injurious than actual cold. The soil should not be rich. As regards propagation, this may be done by cuttings, seeds, and layering. There are a number of kinds, both of tall and dwarf growth. We noticed the dwarf kinds blooming freely in the hot narrow border skirting the museum, facing the Palm-house at Kew; and near the entrance to the gardens is the beautiful *C. laurifolius*, which is quite hardy, the leaves smooth on the upper surface, and broader than in the better-known *C. ladaniferus*, popularly known as the gum *Cistus*. *C. laurifolius* is not so well known as it should be, although introduced from Spain about 160 years ago. The type has white flowers, but those of the variety are much larger, and blotched with intense purple-crimson at the base of each segment; it is a shrub that should be in every garden, being free-flowering and effective. The variety *C. maculatus* is distinct and handsome. A balsamic fragrance is given off by the shrub in hot weather, arising from a resinous exudation of the leaves. V.

SCOTLAND.

FRUIT, AND THE CROPS.

The drought has been terrible, but we have withstood it ever since last March. Fruit trees in the open have had a hard time, but I see the roots struggling away from home; only root-pruned trees, as we do them, are green as Leeks, whilst two or three trees, as other people generally mutilate roots, late in the season, are suffering. Those which were lifted, replanted, and mulched, are loaded with fruit. The Peaches, from which fine crops are gathered every year, are in capital foliage. All garden crops are as fine as we could desire, and a month earlier than usual. Deep tilth defies drought. M. Temple.

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1893.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

The counties are arranged in numbered groups, to correspond with those adopted in the Weather Reports of the Meteorological Department, and followed in our weekly Weather Tables.

* * Fuller comments will be given in the following number. See also Leading Article on page 85.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND—										
0, Scotland, N.										
MORAYSHIRE	Average; good	Under	Average	Average; good	Under	Over; good	Over; good	Under; small	.....	Chas. Webster, Gordon Castle, Fochabers
NAIRNSHIRE	Average; good	Average; good	Over; good	Bad	Average; good	Over; good	Over; good	Average; good	.....	D. Cunningham, Darnaway Castle Gardens, Forres
ORKNEY	Under; good	Over; good	Over; good	Average; good	Under; good	Over; very good	Over; good	Average; good	.....	Wm. Morrison, Kilravock Castle Gardens, Fort George Station
ROSS-SHIRE	Average	Under	Under	Under	Under	Under	Average; good	Under	.....	James Maitland, Cawdor Castle
SUTHERLANDSHIRE.....	Under	Average; good	.....	Average; good	Over	.....	Under	Under	.....	Thos. Macdonald, Balfour Castle Gardens, Kirkwall
ROSS-SHIRE	Under	Under	Under	Under	.....	.....	Average	Average	.....	Robert Massie, Ardross Castle
SUTHERLANDSHIRE.....	Under	Under	Under	Under	.....	.....	Average	Average	.....	D. Melville, Dunrobin Castle Gardens
1, Scotland, E.										
ABERDEENSHIRE	Under; good	Average; good	Over; good	Average; good	.....	.....	Average; good	Average; good	.....	John Forrest, The Gardens, Haddo House, Aberdeen
	Good	Average	Very good	Good	.....	Good	Very good	Good	.....	Simon Campbell, Fyvie Castle Gardens, Aberdeen
	Average	Under	Average	Under	Under	Under	Under	Average; good	.....	George Tait, Castle Forbes, Whitehouse, Aberdeen
BANFFSHIRE	Average; good	Average; good	Under	Average; very good	.....	.....	Average; very good	Average; good	.....	William Jamieson, The Gardens, Ballindalloch Castle, Ballindalloch
BERWICKSHIRE	Average; good	Average; very good	Over; very good	Over; very good	.....	Average; very good	Over; very good	Under; good	.....	Robert Aikman, Duns Castle, Duns
CLACKMANNANSHIRE ..	Average	Average	Average	Average; good	.....	.....	Over; good	Average	.....	Thomas Ormiston, Alloa House Gardens, Alloa
	Average; good	Under	Over; good	Over; good	Under	.....	Over; good	Average; good	.....	Geo. McLeod, Harvieston Castle, Dollar
EAST LOTHIAN	Average; good	Under; good	Over; good	Over; good	Over; good	Over; good	Over; good	Average; good	.....	R. P. Brotherston, Tyninghame, Prestonkirk
	Average; good	Under; good	Average; good	Over; good	Average; good	Over; good	Over; good	Under	Average	L. Dow, Newbyth Gardens, Prestonkirk
	Average; good	Average; good	Over; good	Over; good	Average; good	Over; good	Over; good	Average; good	Average; good	Wm. McKelvie, Broxmouth Park, Dunbar
FIFESHIRE	Average	Under	Under	Over; very good	.....	Average	Over; very good	Average; very good	.....	George Ramsay, Fordell Gardens, Inverkeithing
	Average	Under	Over	Average	Under	Bad	Very good	Under	.....	Robert Gossip, Crawford Priory, Cupar
	Average	Under	Under	Average	None grown outside	.....	Over	Average	.....	W. Henderson, Balbirnie Gardens, Markinch
	Over; good	Average	Average	Average; good	.....	Average	Average; very good	Over; very good	.....	A. McInnes, Falkland Palace, Falkland
FORFARSHIRE.....	Under	Under	Average	Over	.....	Average	Over; good	Average; good	.....	William McDowall, Brechin Castle Gardens, Forfarshire
	Average; good	Under; bad	Average; good	Under; good	Over; good	Average; good	Over; good	Average; good	.....	Thomas Wilson, Glamis Castle Gardens, Glamis
KINCARDINESHIRE ...	Under	Under	Average	Under	None outside	.....	Over	Over	.....	J. M. Cairns, Arbuthnot House Gardens, Forfar
	Under	Under	Under	Average; good	None outside	None outside	Average; good	Average; good	.....	William Knight, The Gardens, Fasque, Laurencekirk
KINROSS-SHIRE	Average; good	Average; good	Under; good	Over; very good	.....	.....	Over; very good	Average; very good	.....	John Fortune, Blair Adam Gardens, Blair Adam
MIDLOTHIAN	Average; very good	Average; very good	Over; very fine	Over; very fine	Under; good	Over; very fine	Over; very fine	Average; very good	Average; good	Malcolm Dunn, Dalkeith Gardens, Midlothian
PEEBLESSHIRE	Over	Average	Over; good	Over	.....	.....	Over; very good	Under; bad	.....	Wm. McDonald, Cardrona, Peebles
PERTHSHIRE	Over; good	Under; good	Average; good	Over; very good	Average; very good	Over; very good	Over; very good	Under; bad	.....	G. Goodfellow, The Gardens, Kinfauns Castle, Perth
	Over; good	Over; good	Over; good	Over; good	.....	.....	Average; good	Average; good	.....	John Robb, Drummond Castle Gardens, Crieff
	Average	Over average	Average	Over; very good	.....	.....	Over average	Over average	.....	George Croucher, The Gardens, Ochertyre, Crieff
	Under	Good	Very good	Good	Under	Very good	Good	Good	.....	P. W. Fairgrieve, The Gardens, Dunkeld House, Dunkeld
	Under	Average	Over	Over	.....	Over	Over	Average; very small	.....	J. King, Blair Drummond
	Over; good	Average; good	Average; very good	Average; good	Average; very good	Over; very good	Over; very good	Over; very good	.....	Thomas Lunt, Keir Gardens, Dunblane
ROXBURGHSHIRE	Under; good	Under	Average	Average	Under	Under	Over; very good	Under	.....	R. G. Milne, The Gardens, Minto, Hawick
SELKIRKSHIRE	Over; very good	Average	Average; good	Over; very good	Average	Average	Over; very good	Average	.....	W. G. Pirie, Sunderland Hall Gardens, Selkirk
WEST LOTHIAN	Average	Under	Average; good	Under; good	Average; good	Over; good	Average; good	Under; good	.....	Jno. Moyes, Dalmeny Park, Edinburgh
6, Scotland, W.										
ARGYLLSHIRE.....	Under	Under	Average	Average	.....	Under	Over; good	Average	.....	G. Taylor, Castle Gardens, Inverary
AYRSHIRE	Under	Average	Over; good	Average; good	.....	.....	Over; good	Over; good	.....	W. Priest, Eglinton Gardens, Irvine
DUMFRIESSHIRE	Average	Bad	Good	Under	None outside	.....	Very good	Good	.....	D. Thomson, Drumlanrig Gardens, Thornhill
LANARKSHIRE	Average; very good	Over; very good	Average; very good	Average; good	.....	Under; good	Over; good	Under; bad	.....	A. Angus, Dalziel Gardens Motherwell
RENFREWSHIRE	Over; good	Over; good	Under; bad	Average; small	.....	.....	Average; good	Over; good	.....	Frederick Fulford, The Gardens, Eastwood Park, Giffnock, Glasgow
	Average; good	Under; bad	Average; good	Average; good	.....	.....	Under; good	Under; good	.....	Thomas Lunt, The Gardens, Ardgowan, Greenock
	Average	Under	Under	Average	Under	Under	Average	Average	.....	John Methven, Blythswood Gardens, Blythswood
STIRLINGSHIRE	Average	Bad	Under	Average	.....	.....	Good; small	Under	.....	Henry Maxwell, Ralston, Paisley
	Average; good	Average; good	Average; good	Average; good	Under	Under	Under	Average	.....	Maurice Fitzgerald, Dunmore, Larbert
	Average; good	Under; good	Over; good	Average; good	.....	Average	Over; good	Average; good	.....	Alex. Crosbie, Buchanan Gardens, Drymen
WIGTONSHIRE	Average; very good	Under; good	Over; very good	Average; good	.....	.....	Over; very good	Average; good	.....	W. Cruden, Castle Kennedy

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND—										
2, England, N.E.										
DURHAM.....	Average; good	Average; good	Over; good	Average; good	None outside	Over; good	Over; very good	Average; good	.....	John Short, Hummersknott, Darlington
	Average	Average	Bad	Average	.....	.....	Average	Under	.....	R. Draper, Seaham Hall, Sun- derland
NORTHUMBERLAND.....	Average	.....	Under	Good	Good	Under	Good	Good	.....	J. M., Castle Hill Hall Gardens, Wylam-on-Tyne
	Average; good	Under	Over; good	Average; good	Under	Over; good	Over; good	Under	.....	George Harris, The Castle Gardens, Alnwick
	Average; good	Over; good	Average; good	Over	Fair	Average; good	Over	Over; good	.....	Wm. Fell & Co., Royal Seed, &c., Establishment, Hexham
YORKSHIRE	Average	Under	Average; good	Average	Under	Over; good	Average; good	Average; good	Under	David Inglis, Howick Hall, Leesbury
	Average	Under	Average; good	Over	Over	Over	Over; good	Under	Under	J. Riddell, The Gardens, Castle Howard
	Under; good	Under; good	Average; good	Average; good	Under; good	Average; good	Over; good	Under; bad	.....	Thomas Jones, Ribston Gar- dens, Wetherby
	Average; good	Average; good	Average; good	Over; very good	Average; good	Average; good	Over; good	Average; good	.....	Bailey Wadds, Birdsall Gar- dens, York
	Average	Average; good	Average	Good	Average	Average; good	Average; good	Average; good	Under	William Culverwell, Thorpe Perrow, Bedale
	Average; good	Average; good	Over; good	Average; good	Average; good	Average; good	Average; good	Average	Average	Robt. C. Kingston, Branting- ham Thorpe, Brough
	Average; good	Average; good	Average; good	Average; good	Over; good	Over; good	Over; good	Under; bad	.....	Geo. S. Purdy, Wilton Castle, Redcar
	Average	Under; bad	Over; good	Under	.....	Over; very good	Over; very good	Average; very good	Under	J. P. Leadbetter, The Gardens, Tranby Croft, Hull
	Over; very good	Average	Under	Over	.....	Over; very good	Average; good	Average; very good	.....	Jas. Batley, The Gardens, Wentworth Castle, Barnsley
	Average; very good	Over; very good	Over; very good	Average	Under; good	Over; very good	Average; good	Under; very good	Under	Wm. Chuck, Brodsworth Hall, Doncaster
	Average	Under	Average	Over	Average	Over	Average	Over	Average	Thos. Lambert, Burton Con- stable, Hull
3, England, E.										
CAMBRIDGESHIRE	Under	Under	Average; good	Average	Over; good	Over; good	Average; good	Average; small	Average	Jas. Hill, Babraham Gardens, Cambridge
ESSEX	Under; good	Under; good	Under; bad	Over; very good	Over; good	Over; very good	Over; good	Under; bad	Under; good	James Vert, Audley End Gar- dens, Saffron Walden
	Over; good	Over; good	Over; good	Average; good	Average; good	Average; good	Average; good	Under; small	Average	William Earley, Ilford
	Average; good	Average; good	Average; good	Over average; good	Average; good	Under	Over	Average	Over	Chas. Butler, Parndon Hall Gardens, Harlow
	Average; very good	Average; good	Over; bad	Average; good	Over; good	Over; good	Over; very good	Under; bad	.....	Arthur Ocock, Havering Park, Romford
	Over; very good	Average; good	Average; bad	Average; good	Over; good	Over; good	Average; good	Under; bad	.....	H. Lister, Easton Lodge, Dun- mow
LINCOLNSHIRE	Average; good	Average; good	Under	Under	Over; good	Over; good	Over; good	Under	Over	David Lumsden, The Gardens, Bloxholm, Lincoln
	Average; good	Under; good	Average; good	Average; good	Under; bad	Over; good	Over; bad	Average; good	Over; good	James Seth, Thurlby, Bourne
	Average	Average	Over	Over	Average	Over	Average; bad	Under	Over	Thomas Vinden, Harlaxton Manor, Grantham
	Average; small	Under	Average	Average; good	.....	Average	Under	Under	Average	J. Rowlands, The Manor Gar- dens, Bardney
NORFOLK	Over	Average	Over	Over	Average	Over	Over	Average	Average	H. Batchelor, Catton Park, Norwich
	Over	Under	Over; very good	Average	.....	.....	Average; good	Very bad	Under	Geo. Nisbet, The Gardens, Hunstanton Hall
	Under	Under	Over; very good	Average	Over; very good	Over; very good	Under	Under	Average	F. Lee, Lynford Hall, Mund- ford
	Average; very good	Over; very good	Over; good	Over; very good	Over; good	Over; very good	Under; good	Average; good	Average; good	Wm. Allan, Gunton Park
SUFFOLK	Over; good	Average; good	Over	Average; good	Over	Over; good	Average; good	Under; good	Under	A. Lancaster, Holkham Gardens
	Average	Over	Average	Average	Average	Much over	Over	Over	Over	Thos. Blair, Shrubland Park, Needham Market
	Average; good	Under; good	Average	Average	Over	Over; good	Under	Average	Average	H. Fisher, The Gardens, Flix- ton Hall, Bungay
	Over; very good	Over; very good	Average; good	Over; very good	Over; good	Over; very good	Over; very good	Over; good	Average	W. Messenger, Woolverstone Gardens, Ipswich
	Average; small	Average; small	Average; good	Over; good	Over; good	Over; good	Over; small	Under; small	Average; good	D. T. Fish, Bury St. Edmunds
	Over	Average	Over	Average	Average	Over	Average	Under	Average	John Wallis, Orwell Park, near Ipswich
	Average; good	Under; very good	Average; very good	Over; good	Over; good	Over; very good	Average; good	Over; very good	Average	G. W. Eden, Henham Gardens, Wangford
4 Midland Counties										
BEDFORDSHIRE	Under; good	Under; good	Over; good	Average; good	Over; good	Over; good	Over; good	Average; good	Under	Geo. Ford, Wrest Park, Ampt- hill, Beds
	Over; good	Average; good	Average; good	Average; good	.....	.....	Average; good	Under; good	Average	Thomas Hedley, The Gardens, Putteridgebury, Luton
	Over; good	Average	Over; average	Average	Average	Average; good	Average; good	Over; good	Average	Charles Turner, Cranfield Court, Newport Pagnell
	Average	Under	Under	Average	.....	Average	Under	Under	Average	Alex. McKay, Woburn
	Average; good	Under	Over; good	Under	Average; good	Average; good	Average; good	Under	Over	H. W. Nutt, Flitwick, Amptill
	Over	Over	Average	Average; good	Average; very good	Over; good	Average; very good	Under; good	Average	Geo. H. Maycock, The Gardens, Luton Hoo
BUCKINGHAMSHIRE ..	Under	Under; good	Over	Average	Over	Over; good	Over; small	Average	Under	Charles Herrin, Dropmore, Maidenhead
	Good	Under	Average	Bad	.....	Average	Average	Under average	Good	G. Bloxham, Brickhill Maner, Bletchley, Bucks
	Over; good	Under; good	Over; good	Over; very good	Over; good	Over; good	Average; good	Under; good	Average; good	Geo. Jas. Miles, Wycombe Abbey, High Wycombe
	Under	Under	Average	Very good	Very good	Average	Very good	Average	Good	W. Waters, Bulstrode Gardens, Gerrard's Cross, Slough
	Over; very good	Over	Under; fair	Average; good	.....	Average; good	Over; good	Under; poor	.....	J. Jaques, Waddesdon, Ayles- bury
	Over average	.....	Over average	.....	.....	.....	Average	Under average	Over	J. W. Shrimpton, Aston Clin- ton, Tring
	Average; good	Average	Average	Average; very good	Average; good	Average; good	Under	Under; bad	Average; very good	Jas. Thomas, Shardiloes Gar- dens, Amersham
	Over; very early	Under	Over	Under	Average	Over; very early	Over	Over	Over	J. Smith, Mentmore, Leighton Buzzard
CHESHIRE	Over; good	Average	Under	Under	.....	.....	Over	Average; good	.....	Robert MacKellar, Abney Hall, Cheadle
	Under	Under	Under	Average; good	Average; very good	Under; good	Average; very good	Average; very good	.....	Chas. Terry, Tatton Park Gar- dens, Knutsford
	Under; good	Under; good	Over; good	Over; good	Average; good	Average; small	Over; except black Currants	Under; small	Over; good	Wm. Whitaker, Crewe Hall, Crewe
	Over	Average	Over	Over	Over	Over	Over	Average	.....	John Heamen, Eaton Hall Gar- dens, Congleton

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4. Midland Counties.										
CHESHIRE	Average	Under	Under	Under	Under	Under	Average; good	Average; good	.....	Ino. V. Smith, Arley Hall Gardens, Northwich
DERBYSHIRE	Average; good	Over; good	Average; good	Average; good	.....	Average; good	Average; good	Average; good	Average	Thos. Keetley, The Gardens, Darley Abbey, Derby
	Average	Under	Average	Average	.....	.....	Average	Under	Under	W. Elphinstone, The Gardens, Shipley Hall, Derby
	Under; bad	Under; bad	Under; bad	Average; good	.....	Under; bad	Average; good	Under; good	.....	Wm. Chester, Chatsworth
	Under	Under	Under	Under	Average	Over	Over; good	Under	Under	I. G. Bedford, Newton Park, Burton-on-Trent
HERTFORDSHIRE	Average; good	Under	Average	Over; very good	Good	Over; very good	Over; good	Under; bad	Over; very good	E. Martin, The Hoo Gardens, Welwyn
	Over; good	Average; good	Over; good	Average; good	Over; very good	Over; very good	Over; very good	Under	Average	J. Kipling, Knebworth House Gardens, Stevenage
	Average; good	Over; very good	Under	Over; good	Average	Over; very good	Average; good	Under	Over	J. C. Mundell, Moor Park Gardens, Rickmansworth
	Under	Average; good	Average	Over	None grown outside	Under	Over; good	Under	Over	E. Hill, The Gardens, Tring Park, Tring
	Average	Average	Over	Over; good	Over; good	Over; good	Over	Average	Average	George Norman, The Gardens, Hatfield House
	Over; very good	Over; very good	Average; good	Average; good	Over; good	Average; good	Average; very good	Under; bad	Over	J. Turk, The Gardens, Pottersfield, Little Berkhamstead
LEICESTERSHIRE	Over; good	Average; good	Over; good	Over	Over	Over; good	Over; good	Average; good	Average	Alfred Hamshire, The Gardens, Beau-Manor, Loughborough
	Under; good	Under; very good	Under; good	Average; very good	Under; bad	Average; good	Average; very good	Average; good	Average; good	G. Cooke, Estate Office, Quorn, Loughborough
	Average	Average	Over	Average	.....	.....	Over	Under	.....	W. Whait, Wyndham Lodge Gardens, Melton Mowbray
NORTHAMPTONSHIRE	Average; good	Under	Average; good	Average; good	Average	Over; very good	Average; good	Under; bad	Average	Peter McGreadie, Wakefield Lodge, Stony Stratford
	Average; good	Under; good	Average; good	Over; very good	Over; good	Over; very good	Under; good	Under; good	Average; very good	Silas Cole, Althorp Park Gardens, Northampton
	Over	Average	Average	Over	.....	.....	Over	Under	Over	A. S. Miller, Whittlebury, Towcester
	Average; good	Over; good	Over; good	Average; good	Average; good	Under	Average	Average; small	Over; good	H. Turner, Fine hals Abbey Gardens, Stamford
	Under	Average	Under	Under	Under	Average; good	Average; good	Under	Under	James Trigger, Milton Park Gardens, Peterborough
NOTTINGHAMSHIRE	Under	Under	Over; good	Over; good	.....	Under	Over; good	Over; good	Average	A. Henderson, Thoresby, Ollerton
	Average; good	Average; good	Over; good	Average; Under	.....	.....	Under; bad	Under; bad	Over; very good	John Horton, Welbeck Gardens, Worksop
	Under; good	Under; good	Under; good	Average; very good	Under; good	Average; good	Over; very good	Average; good	Average; good	Amos Parr, Holme Pierrepont Hall, Nottingham
	Under	Under	Under	Average; very good	Average	Average	Average; good	Average; good	Under	S. A. Woods, Ollerton Gardens, Worksop
	Under	Under	Average	Good	.....	Over	Over; good	Under; good	Under	Robert Doe, The Gardens, Rufford Abbey, Ollerton
OXFORDSHIRE	Average; good	Average; good	Over; good	Over; good	Over; very good	Over; good	Average; good	Under; good	Over; good	George Stanton, Park Place, Henley-on-Thames
	Average; good	Under; good	Under; bad	Average; good	Under; bad	Average; good	Over; very good	Average; very good	Under; bad	Benj. Hope, Middleton Park Gardens, Bicester
RUTLANDSHIRE	Over; good	Under	Average	Over; good	Average	.....	Over; good	Under	Average	C. Buckenfield, Shirburn Castle
	Average; good	Under	Over; good	Over; good	Over; very good	Over; very good	Over; very good	Under	Over	W. H. Divers, Ketton Hall Gardens, Stamford
	Over; very good	Average; good	Average	Average; very good	Average	Over; very good	Average; good	Under	Average	Henry Mason, The Gardens, Bisbrook Hall, Uppingham
	Average; good	Average; good	Average; good	Average; good	.....	.....	Over	Under	Under	William T. Kaines, Cold Overton Hall, Oakham
SHROPSHIRE	Average; good	Over; very good	Over; good	Average; very good	Average; good	Over; good	Average; very good	Average; very good	Under; good	James Loudon, The Quinta, Chirk
	Over; good	Average	Over; good	Over; good	Over; good	Over; good	Over; good	Average; good	Average	A. S. Kemp, Broadway, Shifnal
	Over; good	Average	Over; good	Over; good	Over; good	Over; good	Over; good	Average; good	Over	Neil Sinclair, The Gardens, Park Hall, Oswestry
	Over; very good	Average; very good	Over; very good	Average; good	Good	Over; very good	Average; good	Average; good	.....	S. Backhouse, Onslow Gardens, Shrewsbury
STAFFORDSHIRE	Under	Under	Under	Average	Good	Over; good	Over; good	Over; very good	Over; good	Wm. Halliday, Patchall Gardens, Wolverhampton
	Good	Good	Under	Good	Under	Good	Good	Good	Average	Edward Gilman, Ingestre Gardens, Stafford
	Under	Average	Over	Over; good	.....	.....	Over; good	Under	.....	James Campbell, Biddulph Grange Gardens, Congleton
	Over; very good	Very good	Over; very good	Over; very good	Over; very good	Over; good	Over; good	Over; very good	Over; good	F. H. Rabone, Alton Towers, Cheshire, Stoke-on-Trent
	Average; good	Average	Over; good	Average	Average	Average	Over	Average	Average	H. Wilks, Sandon Hall Gardens, Stone
WARWICKSHIRE	Average; good	Under	Average; good	Average; very good	.....	Average; very good	Over; very good	Over; very good	Under; bad	William H. Ward, The Gardens, Aston Hall, Sutton Coldfield
	Under	Average	Under	Over; very good	Not grown out-doors	Good	Very good	Under	Average	John Bowler, Caldecote Gardens, Nuneaton
	Average; good	Average	Under	Under	Over; very good	Over; very good	Over; good	Under; bad	Under	James Rodger, The Gardens, Charleote Park, Warwick
	Bad	Bad	Bad	Good	.....	Under	Average	Average	Plentiful	W. Miller, Combe Abbey, Coventry
	Over; good	Over; good	Over; good	Average; good	Average; very good	Over; good	Under; bad	Under; good	.....	H. Dunkin, The Castle Gardens, Warwick
	Average	Under	Average	Good	Good	Good	Good	Under	.....	Thomas Beddard, Stoneleigh Abbey, Kenilworth
	Average; good	Under; good	Average; good	Under; good	Average	Over; good	Average	Under; good	Under; good	F. Porter, The Gardens, Studley Castle
5. Southern Counties.										
BERKSHIRE	Under; bad	Under; bad	Under; good	Over; good	Over; good	Over; very good	Under; good	Average; good	Under	Dion Thomas, Royal Gardens, Windsor
	Under	Under	Under	Average	Average	Average	Average	Under	Average	Robt. Fenn, Sulhamstead, near Reading
	Under	Under	Under	Average	Average	Average	Under	Average	Average	I. Tigg, Fearwood, Wokingham
	Average	Average	Average	Average; good	Average	.....	Under; good	Average; very good	Under	I. Strachan, Rose Hill Garden, Henley-on-Thames
	Average; good	Under	Under; good	Over; good	Average; good	Over; good	Average	Under	Average	J. Howard, The Gardens, Benham Park, Newbury
	Average	Average; very good	Average; good	Over; good	Over; very good	Over; very good	Average	Average; good	Over; very good	F. Turton, The Gardens, Maiden Erlegh, Reading
	Average; very good	Under; good	Average; good	Over; good	Over; very good	Over; very good	Average; good	Average; good	Average; good	J. W. McHattie, Strathfieldsaye Gardens, Mortimer
DORSETSHIRE	Under; bad	Average; good	Under; good	Under	Under; bad	Over; good	Average; good	Average; bad	Under	The Gardener, Canford Gardens, Wimborne
	Average; good	Under; good	Under; very good	Over; good	Over; good	Over; good	Over; very good	Over; very good	Under	Jas. Beck, Criche! Gardens, Wimborne
	Average; good	Under; good	Average; good	Over; good	Over; very good	Average; good	Average; good	Under; good	Average; bad	W. G. Pragnell, Castle Gardens, Sherborne
	Average; good	Average	Average	Average; good	.....	Over; very good	Average; good	Bad	Average; very good	Thos. Denny, Down House Gardens, Blandford
	Over; good	Over; very good	Average; good	.....	Average; good	Over; good	Average; good	Under; good	.....	Joseph Bentow, Abbotbury Castle Gardens

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5. Southern Counties.										
HAMPSHIRE	Over; good	Over; good	Over; very good	Over; very good	Over; very good	.....	Over; good	Average; good	Average	Ed. Molyneux, Swanmore Park Gardens, Bishop's Waltham
	Average; small	Average; small	Over; good	Average	Average	Over; good	Under	Under; bad	Average	A. Maxim, Heckfield Gardens, Winchfield
	Average; good	Average	Very good	Over average	Good	Over; very good	Under; very small	Under; small	Under	J. Bowerman, Hackwood Park, Basingstoke
	Over; very good	Average good	Over; very good	Average; good	Over; good	Average; good	Over; good	Average; good	Average	Wm. Smythe, The Gardens, Basing Park, Alton
	Average; very good	Average	Average	Average; very good	Under	.....	Over	Average; good	Under	H. Ireland, Wentworth Lodge, Bournemouth
KENT	Over; good	Average; good	Average; very good	Average; good	Average; very good	Average; very good	Average; very good	Good, but small	.....	Henry Downer, Northcourt, Shorwell, Isle of Wight
	Under	Under	Bad	Average; very good	Average; good	Average; over	Very good	Average; under	.....	F. Moore, The Gardens, Blen- don, Bexley, Kent
	Average; good	Average; good	Over; good	Over; ver y good	Over; very good	Over; very good	Over; very good	Average; good	Over; good	Wm. Craik, Hotfield Gardens, Ashford
	Over; good	Good	Average	Over; good	.....	.....	Under	Under	Over	V. Court, The Greys, Lynsted, Sittingbourne
	Average; good	Average; good	Average; very good	Over; extra good	Average; extra good	Average; good	Over; good	Average; good	Over	George Woodward, Barham Court Gardens, Maidstone
MIDDLESEX	Average	Average	Average	Average; good	Over	Over	Average	Average	Over; good	H. Markham, Mereworth Castle Gardens, Maidstone
	Over; very good	Average; good	Very good;	Over; very good	Over; good	Over; very good	Over; very good	Average; very good	Over	Henry Elliott, The Gardens, Wilderness, Sevenoaks
	Under; good	Average; good	Under; bad	Average; good	Under; good	Average; good	Over; very good	Over; very good	.....	A. J. Ballhatchet, The Gardens, Fulham Palace
	Average; good	Over; very good	Average; good	Average; good	Average; good	Under	Average; good	Under; good	Average; good	John W. Odell, The Grove, Stammore
	Under	Under; good	Under	Over; good	Average; good	Over; very good	Average	Average	.....	Geo. Wythes, Syon House Gardens, Brentford, W.
SURREY	Average	Average	Under	Average	Average	Average	Under	Under	Average	William Bates, Cross Deep, Twickenham
	Average; bad	Under; good	Good	Good	Average; good	Under; bad	Good	Over; very good	Average	W. Watson, Harefield Place, Uxbridge
	Under average; poor	Under average; poor	Under average	Average	Average	Over average; good	Under average	Over average; good	Under average	A. F. Barron, Chiswick
	Average; good	Average	Over; very good	Average; good	Over; good	.....	Very good	Under	.....	James Friend, Rook's-nest Gar- dens, Godstone
	Under; good	Under; good	Average; good	Average	Average; good quality	Over; good	Average; good	Under; very fair	.....	E. Burrell, Claremont
SUSSEX	Over; good	Over; very good	Over; very good	Over	Over; good	Over; very good	Over; very good	Over; good	Over	A. Evans, Lythe Hill, Hasle- mere
	Average; good	Average; good	Under; bad	Under; bad	Average; good	Average; bad	Average; bad	Under; bad	Under; good	W. Whalley, Addington Park Farm, Croydon
	Under; good	Under; good	Over; very good	Over; good	Over; good	Over; good	Over; very good	Under; good	Over; good	G. W. Cummins, The Grange Gardens, Carshalton, Surrey
	Over	Very good	Average; good	Over	Over	Very good	Over	Very good	Very good	W. C. Leach, Albury Park Gardens, Guildford
	Average	Under; good	Average	.....	Average	Average	Average	Under	Over	G. B. Baskett, Eashing Park, Godalming
WILTSHIRE	Average; very good	Average; good	Over; good	Under; good	Average; good	Over; very good	Over; good	Over; very good	.....	J. F. McLeod, Dover House Gardens, Roehampton
	Under	Under	Average; good	Under	Average	Average	Average; good	Average; good	Average	Thos. Oman, The Gardens, Ottershaw Park, Chertsey
	Over; very good	Average; good	Under; good	Over; good	Average	Over; good	Over; bad	Under; bad	Average; good	C. Papworth, The Gardens, Rid- dingscourt, Caterham Valley
	Under	Under	Under	Under	Very good	Very good	Average; small	Over, and large	Over	Jno. Miller, Ruxley Lodge, Esher
	Over	Over	Under	Average	Average	.....	Average	Under	Average	C. J. Salter, Woodhatch Lodge Gardens, Reigate
7. England, N.W.	Over; very good	Over; very good	Average	Over; very good	Over; good	Average	Average	Good	Average	Joseph Rust, Eridge Castle [hurst]
	Under; good	Under; good	Under; good	Average; good	Over; good	Over; good	Average; small	Under	Over	F. Geeson, Cowdray Park, Mid- Alex. Reid, Jun., Posingworth Gardens, Cross-in-Hand, Hawkhurst
	Average	Under	Under	Average	Over; small	Over; very good	Over; good	Average; good	Over	H. C. Prinsep, Buxton Park, Uckfield
	Over; good	Over; very good	Over; good	Average; good	Average; good	.....	Over; good	Average; soon over	.....	N. J. O., Handcross Park, Crawley
	Over; good	Average; very good	Over; good	Under; bad	Average; good	Average; good	Over; good	Average; good	Average	W. H. Smith, West Dean Park Gardens, Chichester
8. England, S.W.	Average	Over; very good	Over; good	Average; good	Over; good	Average, but small	Over; very good	Good	Over	E. Burbury, Castle Gardens, Arundel
	Under; small	Under; small	Under; good	Average; good	Over; very good	Over; very good	Over	Average	Average	H. W. Ward, Longford Castle Gardens, Salisbury
	Over	Over	Over	Average	Over	Over	Under	Under	Under	Thomas King, The Castle Gar- dens, Devizes
	Over; small	Good	Over; good	Average; good	Over; small	Average; good	Over; good	Average	Over; good	J. Trollope, Longleat Gardens, Warminster
	Over; good	Average; good	Over; good	Over; very good	Over; good	Over; good	Over; very good	Average; very good	Under; very good	W. A. Cook, Compton Bassett, Calne
7. England, N.W.										
LANCASHIRE	Average; good	Under; fair	Under	Over; good	Over; good	.....	Over; good	Average; good	Under	J. Hathaway, Lathom House, Ormskirk
	Over; good	Average; good	Over; good	Average; good	Over; good	.....	Average; good	Average; good	.....	Wm. P. Roberts, The Gardens, Cuerden Hall, Preston
	Over; very good	Average; good	.....	Over; good	.....	.....	Average; good	Average; very good	.....	W. B. Upjohn, Worsley Hall Gardens, Worsley
	Very good	Good	Good	Average	.....	.....	Very good	Fair	.....	F. Hargreaves, The Gardens, Ashton Hall, near Lancaster
	Average	Fine	Fine	Average	.....	.....	Very good	Good	.....	S. M. Master, Gawthorpe Hall, Burnley
DEVONSHIRE	Average; good	Over; very good	Over; good	Average	Average; good	.....	Average; good	Under; good	Over	George Hall, Port Eliot Gar- dens, St. Germans
	Average	Over	.....	Over	Average	.....	Over	Under; very good	.....	A. Mitchell, Tehidy Park, Comborne
	Over; very good	Over; very good	Over; very good	Over; very good	Average; small good	Over; very good	Over; good	Over; very good	Over; good	Chas. Lee, Boconnoc, Lost- withiel
	Over	Average	Over; bad	Average	Over; good	Average	Over; good	Under	Average	James Murton, Pencalenick, Truro
	Over; good	Average; good	Average	Over	Average	.....	Average; good	Average; good	.....	Geo. Baker, Membland, Ply- mouth
CORNWALL	Average; good	Average; good	Over; very good	Over	Average	Over	Average	Over; very good	Average	James Enstone, 38, Temple Road, Exeter
	Over; good	Average; good	Over; good	Average	Average	.....	Over; very good	Average; good	.....	W. Stewart, The Gardens, Arlington Court, Barnstaple
	Under	Under	Under	Good	.....	Under	Over; good	Over; good	Under	J. Ollerhead, Rousdon, Lyme Regis
	Average; good	Average; good	Above average	Average; good	Average	Above average	Average	Average; good	Above average	D. C. Powell, Powderham Castle, Exeter

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
8, England, S.W.										
GLOUCESTERSHIRE.....	Over; good	Average	Over; good	Average; very good	Over; very good	Over; very good	Over; good	Under; bad	Average	Wm. Greenaway, Dodington Gardens, Chipping Sodbury
	Over; good	Under	Over; good	Over; good	Average; good	Over; good	Over; good	Average; very good	Under	T. E. Arnold, The Gardens, Cirencester House
	Average	Under	Over; good	Average	Average; good	Average; good	Average	Average	Average; good	John Sowray, Highnam Court, Gloucester
	Average; Good	Under; bad	Over; good	Average; good	Average; good	Over; good	Average; small	Average; small	Average	Alexander Scott, Sherborne House, Northleach
	Average; bad	Under	Average	Average	Average	Over; very good	Over; good	Average	.....	William Nash, Badminton Gardens, Chippenham
	Over; good	Average; good	Average; good	Average; good	Over; good	Average; good	Average; good	Under; good	Average; good	J. Cleare, The Gardens, Tod- dington, Winchcomb
	Over; good	Over; very good	Over; good	Average; good	Over; good	Over; good	Average; good	Average; good	Over; good	Thomas Shingles, The Gardens, Tortworth, Falfield
HEREFORDSHIRE	Average; good	Average; good	Over; bad	Average; bad	Over; good	Over; good	Over; good	Under; bad	Over; good	John Watkins, Pomona Farm, Willington, Hereford
	Under	Under; good	Under; bad	Average; good	Under; good	Over; good	Average; good	Average; good	Average; bad	Thos. Spencer, Goodrich Court Gardens, Ross
	Average; good	Under; good	Over; good	Over; very good	Over; good	Over; good	Over; very good	Under; bad	Average; very good	Frank Harris, The Gardens, Eastnor Castle, Ledbury
	Average; good	Under; good	Average; good	Over; very good	Average; good	Over; very good	Over; very good	Average; good	Over	A. Ward, Stoke Edith Gar- dens, Hereford
	Average; good	Under; good	Under; good	Over; very good	Average; very good	Average; good	Over; very good	Over; very good	Average; good	Geo. Milne, The Gardens, Tit- ley Court, Titeley
MONMOUTHSHIRE	Average	Average; good	Under	Average	.....	Average; good	Average; good	Average; good	Over	Thomas Coomber, The Hendre, Monmouth
SOMERSETSHIRE	Average	Average	Over	Average	Average	Over; very good	Average	Average	Over	W. Hallett, Cossington House Farm, Bridgewater
	Under	Under	Under	Under	Over	Good	Good	Average	Average	H. Noble, Ashton Court Gar- dens, Bristol
	Average; good	Under; very good	Average; good	Over; very good	Average; good	Over	Average	Under	Average	W. Iggliden, Marston House Gardens, Frome
WORCESTERSHIRE	Over; small	Average; good	Under	Average; good	Over; good	Over; good	Over; good	Over; good	Walnuts abundant	A. Young, Abberley Hall Gar- dens, Stourport
	Under; good	Average; good	Over; good	Over; good	Over; very good	Over; very good	Over; very good	Average; very good	Over; good	John Austen, Witley Court Gardens, Stourport
	Under	Under	Average	Average; good	Average	Over; good	Average; good	Average; good	Under	James Aston, Cotteridge Court, near Worcester
	Good	Under	Very good	Average	Good	Very good	Good	Under	Good	I. Matthews, Burford, Tenbury
	Under; good	Under; bad	Average; good	Average; small	Over; very good	Over; very good	Average; small	Under; small	Average; good	W. Crump, Madresfield Court, Malvern
WALES.										
BRECONSHERE.....	Average; good	Under; good	Over; good	Over; very good	Over; good	Over; very good	Over; very good	Average; good	Over; good	Albert Ballard, Glanusk Park, Crickhowell
CARDIGANSHIRE	Over; very good	Average	Average	Average; good	Average; good	Average; good	Over; very good	Average	Under	R. C. Williams, Crosswood Park, Aberystwith
CARMARTHENSHIRE ...	Average	Average	Over	Over	Average	.....	Over	Average; good	.....	L. Bowen, Edwinstford, Llandilo
	Average	Average	Under	Average	Under	Under	Average	Average; good	.....	Allan Calder, Vaynol Gardens, Bangor
DENBIGHSHIRE	Average; good	Good	Under; good	Average; good	Over; good	Over; good	Over; good	Average; very good	Average; good	P. Middleton, The Gardens, Wynnstay, Ruabon
	Average; good	Under	Average	Over	Over; good	Over; very good	Over; good	Under; bad	Under	Walter Weir, Acton Park Gar- dens, Wrexham
FLINTSHIRE.....	Average; good	Average; good	Over; very good	Under; bad	Average; good	Over; very good	Average; very good	Under; bad	Under; bad	James Barnard, Mostyn Hall Gardens, Mostyn
GLAMORGANSHIRE	Good	Very good	Very good	Average	Good	Very good	Good	Good	Average	John Forsyth, Hawarden Castle
	Over; very good	Average; very good	Over; very good	Over; very good	Over; very good	Average; very good	Over; very good	Over; very good	Average	R. Milner, Penrice Castle Gar- dens, Swansea
	Over; good	Over; good	Average; good	.....	Average	.....	Average	Average; good	.....	A. Pettigrew, Castle Gardens, Cardiff
	Average	Over; very good	Over; very good	Average	Over; very good	.....	Average	Average	Over	J. Muir, Margam Park, Port Talbot
	Over; very good	Over; very good	Under; bad	Over; very good	Average; very good	.....	Average; good	Average; good	Average; good	C. Hibbert, Craig-y-nos Castle Gardens, Swansea Valley
MERIONETHSHIRE	Over; very good	Average; good	Over; good	Over; very good	.....	Over; good	Over; very good	Average; good	Average	Jas. Bennett, Rhug, Corwen
MONTGOMERYSHIRE ...	Average; good	Average; good	Average; good	Over; good	Over; good	Over; good	Over; very good	Average; good	Average; good	John Lambert, Powis Castle Gardens, Welshpool
	Average; good	.....	Average; good	.....	.....	.....	Over; very good	Average; good	.....	T. H., Garden House, Gregy- nog Newtown
PEMBROKESHIRE	Over; good	Over; good	Over; good	Over; good	Average	.....	Average; good	Good	Average	Geo. Griffin, Slebeck Park, Haverfordwest
IRELAND—										
9, Ireland, N.										
ANTRIM	Under; bad	Under; good	Under	Under	.....	.....	Average; good	Average; very good	.....	Geo. Porteous, Garron Tower, Belfast
ARMAGH	Over; good	Average; good	Over	Average	Under	Under	Average	Under	Under	T. Sheasby, Castle Dillon Gar- dens
CAVAN	Over; very good	Average; good	Average; good	Average; good	.....	.....	Over; very good	Under; bad	.....	Edward Reilly, Castle Saunde- rson, Belturbet
DOWN	Under	Under	Average	Under	.....	.....	Average; good	Average	.....	Jas. Taylor, Mountstewart, Newtownards
	Average	Average	Over	Under	.....	.....	Over; very good	Under	.....	Thos. Ryan, Castlewellan Gar- dens
GALWAY	Over; very good	Average; good	Over; very good	Average; good	.....	.....	Over; very good	Average; very good	.....	J. C. C. Garbally Gardens, Ballinasloe
MEATH	Average; good	Under	Over; good	Average; good	Average; good	Under; good	Under; good	Over; good	Under; bad	J. Hounslow, Headfort Gns, Kells
WESTMEATH	Over; very good	Over; very good	Under; good	Under	Under	Under	Over; good	Average; good	Average	John Igoe, Garden Vale, Ath- lone
10, Ireland, S.										
CORK	Over	Average	Over; good	Average	Average	Average	Over; very good	Over; very good	Average	R. J. Wilson, Mitchelstown Castle Gardens
	Average; good	Under; good	Under; bad	Average; good	.....	.....	Over; very good	Under; bad	.....	J. Woolford, Gardener, Castle Bernard, Bandon
KILDARE	Over; good	Average	Average	Average	Average	Under	Over	Average	Walnuts full crop	J. Wyke, The Gardens, Bishops Court, Straffan
KILKENNY.....	Over; very good	Average; good	Under	Average	.....	Average; good	Abundant; very good	Under; good	Walnuts good	H. Carlton, Kilkenny Castle Gardens
WICKLOW	Average; good	Average	Over	Over	Average	Average	Over; good	Average; good	Over	W. Cooper, The Gardens, Kill- ruddery, Bray
CHANNEL ISLANDS.										
ISLE OF JERSEY	Over; good	Average; good	Over; good	Over; good	Average; good	Average; good	Average; good	Average	.....	Charles B. Saunders, St. Saviour's, Jersey
ISLE OF GUERNSEY ...	Over; good	Over; very good	Over; good	Over; good	Average; good	Average; good	Average; good	Average; good	.....	J. Smith & Son, Caledonia Nursery, Guernsey
ISLE OF MAN.....	Average	Average	Under	Over; very good	.....	.....	Over; very good	Average; good	.....	James Murphy, Cronkbourns Gardens, Douglas
ISLES OF SCILLY.....	Average	Average	Average	.....	.....	.....	Average	.....	.....	Jas Jenkin Treco Abbey Gdns.

THE CAMPHOR TRADE IN FORMOSA.

It is satisfactory to note, from a recently-issued report on the trade of Tainan, China, that the trade in camphor shows an improvement, and bids fair to become a very important factor in the commerce of South Formosa. This product of *Cinnamomum camphora* has for some years past been a fluctuating commodity, but we are told that during the past year 5441 cwt. of camphor were exported from Tainan to Hong-Kong, as compared with 2542 cwt. in the previous year. The Government monopoly for a long time rendered it impossible for foreigners to take any part in the trade. In 1889, 759 cwt. only were exported. In 1891 the export reached 2524 cwt., but owing to the heavy so-called frontier defence-tax, which was imposed at the time the Government monopoly was abolished, it did not seem likely that any expansion of the trade would take place. The high prices ruling in Hong-Kong have, however, induced foreign merchants to take an interest in the trade, and there are now several foreign firms employing Chinese agents to purchase camphor in Mid-Formosa. The result is, that the export for the year under review has risen to 5441 cwt., and the trade seems to show every prospect of increasing. The price for camphor delivered in Hong-Kong ranged from £4 16s. to £7 10s. per picul of 133½ lb., and at one time rose to £3 14s. At these rates very handsome profits were made, and merchants could afford to pay the heavy tax alluded to above. The central districts of Formosa are very thickly wooded, and there is no fear of the camphor supply becoming exhausted for many years—some hundreds, the Chinese declare; still, it is a matter of much regret that the officials take no steps to enforce planting. These districts are apparently more accessible to Chinese than those further north, for, so far, they have not suffered from savage raids, and the camphor distillers work in peace, undisturbed by their neighbours on the other side of the frontier. From the north, on the contrary, we hear, not unfrequently, of distilleries broken up, and distillers murdered.

Although the Government monopoly has been abandoned, there are not wanting signs of an attempt on the part of certain subordinate officials to create a monopoly in one of the richest of the central camphor districts. In Yün-lin, lying to the east of Changhwa, there are one or two Chinese hong engaged in the camphor business. These hong give employment altogether to six camphor distilleries, the only ones at present in the place. Foreign merchants are anxious to start a business in Yün-lin, but are prevented by the action of the so-called camphor office, the official in charge asserting that under the camphor regulations of 1869 foreign merchants or their Chinese employes are allowed to purchase camphor up country, but that no provision is made for their employing natives to distil camphor; that, in consequence, unless they can purchase camphor from the distilleries already at work, they cannot be permitted to engage in the business, as to hire labour for the distilling of camphor is contrary to the regulations since made by the Governor of the Island. The objection raised is, of course, frivolous in the extreme, but not the less likely on that account to seriously interfere with the interests of the foreign merchants engaged in the camphor trade in Tainan.

THE ALPINE GARDEN.

CAMPANULA LACTIFLORA, *Bieb.*

A few months ago a nurseryman in Switzerland announced in the *Gardeners' Chronicle* that he had a new alpine from the Caucasus named *Campanula lactiflora*, which grew 1 foot high, and was very good for rockeries. I sent a note in reply, saying that *C. lactiflora* (M. B.) had been cultivated in English gardens for at least fifteen years, and that it grew in my garden from 5 to 8 feet high, having flowers which varied in colour from dark purple to nearly white. It was answered that my plant must be something else, and could not be true *C. lactiflora*. I now send a piece of a plant which I have just measured, and which is 7 feet 6 inches high, with a large number of primary and secondary branches

full of flowers. Will you kindly add its correct name to this note? *C. Wolley Dod, Edge Hall, Malpas.* [The plant sent is *C. lactiflora*, which is very variable. *Ed.*]

THE WEEK'S WORK.

THE FLOWER GARDEN.

By T. H. CRASP.

HERBACEOUS BORDERS.—The Delphiniums, perennial Phloxes, and a host of other good plants, will be in flower this month, giving a good deal of work in staking and tying the plants. Any patches of annuals which may be past their best, should be cleared away. If seed-sowing is desired, it is a good plan to cut the flower-spikes directly the lower seed-pods begin to ripen, stick them in pots filled with wet sand, and place under them a large sheet of paper, to catch the seed; this is best done under glass, and it prevents seed being lost by the wind blowing it away. Viola and Pansy seed, if sown now upon a shady border, and kept moist, will soon germinate. They may then be pricked out in beds, and transplanted when large enough to the sites where they will all flower. Pansies which flowered late should now be cut back, the soil stirred between them, and a good mulching of well-decayed manure afforded. Seeds of *Digitalis*, *Aquilegia*, *Antirrhinum*, &c., should be sown at this time. *Gladiolus*, *Hollyhock*, *Lilium auratum*, *Hyacinthus candicans*, *Asters*, *Anemone japonica*, *Sweet Peas*, *Helenium autumnale*, and many others should be afforded liquid manure in large quantity, and a mulching of rotted manure. Choice varieties of rhizomatous sections of *Iris* may be increased at this season by division, and there is time to get them well established before winter. In the case of large clumps of *Iris* in the border, it is a good plan to lift them entirely, and properly renovate the soil by digging into it rotted manure and burnt earth, and then to plant a few pieces of the rhizomes according to the size the clump is required to be. Those not wanted for the border may be planted in nursery beds for future use. The propagation of *Iris* by seed is slow work unless new varieties are wished for; and in such case the seed may now be sown in boxes or pans of sandy soil placed in a cold frame. The seed will germinate next spring, and with attention in regard to pricking off, &c., the seedlings will be sufficiently large to plant out next year. The plants will flower in two or three years. *Phlox subulata* is the best of the creeping species of *Phlox*, and it and its varieties are well adapted for rockery planting, the front row of the border, or for spring bedding. They are raised from cuttings inserted at this season in pans of sandy soil or cold frames. The cuttings must be shaded from bright sunshine until they root. These form good plants for use next spring. Cuttings of the alpine Wallflowers, such as *Cheiranthus mutabilis*, *Helveticus Marshalli*, &c., will also root under the same treatment. Carnation seed, if sown at once in pans or boxes, will also produce flowering plants next year. Seed may be saved of good varieties. Beds or clumps of *Narcissus*, *Colchicums*, &c., that have been in the soil for two years, should be lifted, dried, and stored away for planting again in the autumn. No time should be lost in planting out the various species of autumn *Crocus*.

PLANTS UNDER GLASS.

By B. WADDS, *Gardener, Birdsall Manor, York.*

STOVE FLOWERING-PLANTS.—Considerable attention will be required at the present season to eradicate and keep in check the insect-pests which prey on the inmates of the stove, which this season in particular are very abundant. There are not many gardens or nurseries in the country where considerable numbers of stove-plants are grown, that are not troubled with mealy-bug, and I think greater vigilance should be shown everywhere in exterminating it. This can be done. In those private places where it does not exist, great care should be taken when plants are introduced from nurseries or other gardens. I have pitched many bug-infested plants into the furnace at the risk of severe censure by my employers, rather than run the risk of having the houses overrun, but at the present time so many effective remedies can be obtained, that there is no need to be troubled with it at all. Where a stove is badly infested, apply either Chelsea Blight, Lemon-oil, Petroleum Emulsion, or Fowler's Insecticide, and follow up the dressings till the houses and plants are thoroughly clean, syringing weekly for two months afterwards, whether a mealy-bug is seen or not; and

not only the plants, but every bit of the woodwork and walls twice over, each time backwards and forwards, turning the plants round after the first syringing where possible. For strength of insecticide to use, follow the directions. It is not one or two applications that will prove effective, but continued syringings; and the cost may be considerable, but it will be paid for in the end. Let the insecticide dry on the plants before the daily washings of clean water are afforded. When stocking new houses with plants, or when houses have been thoroughly cleared of the pest, a house should be set apart in which to place new plants till it is certain that they are clean. Thrips, red-spider, aphid, and scale are easily kept out, compared with mealy-bug.

CLEODENDRON BALFOURIANUM AND C. THOMPSONI, that were started early, should have the old flowers removed as soon as possible, the shoots thinned where crowded, affording good waterings, and keeping the foliage clean till the wood is ripe; then less water will be needed, and a cooler house.

FOLIAGE PLANTS FOR DINNERTABLE DECORATION.—A suitable selection of these plants for cultivating in small pots for the coming winter should be made, as many of each sort according to the needs of the family and size of the table. The plants will require to be kept in as small pots as possible consistent with their good development, and the habit should be light, and of pleasing outline, not so dense as to obstruct the view across the table. The height of the plants may range from 6 to 18 inches. During growth they should be placed where they will not be crowded with other plants, and will get light and air, so that they may grow into nice form. Generally speaking, liquid or other manure will have to be afforded, and perfect cleanliness must prevail; being grown in small pots, care must be taken that they do not get dry at the roots. A useful size of pot is the large 60 and small 48. Palms and *Crotons* may be used as pairs in 6-inch pots, when vases have to be filled, but usually this size is too large for the dinner-table, and difficult to cover with foliage. Some of the most useful plants are *Cocos Weddelliana*, *Cyperus alternifolius*, *C. a. variegatus*, *Pandanus Veitchii*, *Aralia Veitchii*, *A. gracillima*, *Curculigo recurvata*, *Rivinia humilis*, also small-flowering plants of *Primula sinensis* and *P. obconica*, small seedling plants of the common *Asparagus*, *Adiantum cuneatum*, *A. gracillimum*, *Pteris tricolor*. The above do very well in 3-inch pots. Of others there are *Croton majesticus*, *C. Wismanni*, *C. Heathii elegans*, *C. angustifolia*, *Cordylina indivia*, *Kentia Balmoreana*, *Euterpe edulis*, *Dracaena gracilis*, *D. elegantissima*, *D. albo-marginata*, *D. terminalis*, *D. rubra* do well in the larger sized pot. *Selaginellas*, *Panicum variegatum*, *Tradescantias*, *Fittonias*, and *Caladium argyrites*, also small plants of scented *Geraniums* are nice things when grown in small pots, and for a change pairs of small *Araucaria excelsa* are effective in 4-inch pots.

FRUITS UNDER GLASS.

By M. TEMPLE, *Gardener, Carron House, Falkirk, N.B.*

THE PINERY.—It is a practice with some gardeners to have certain dates for potting and arranging Pine-houses, but it is a better system to attend to the requirements of the plants as soon as they indicate that more room in the pots or for the leaves is necessary. Crowding is often practised when there is not space to hold all the plants when fruiting, and the suckers, in such cases, are rendered weakly; but it would be better to throw away some of the stock of plants rather than crowd them together, especially whilst actively growing. Where the pots are of various sizes, some will become full of roots, while others are not half filled; the watering in such cases requires great attention, or some plants may become sodden, while others suffer from lack of moisture; moreover, soils vary much, and a heavy clore loam will need less water than a sandy loam, or the kind of peat which some cultivators make use of. Loosely-potted plants are also more likely to suffer from excess than those that are firmly potted. Pines bloom prematurely by allowing the roots to become pot-bound, or the soil too dry at this season; and they show fruit during the autumn, when only large well developed plants can produce finely-swelled Pine-apples; extreme dryness causing the Pine to fruit, but at expense of size and general excellence.

VINES.—The cracking of soil in outside borders should be prevented by the use of the prong or digging-fork, mulching it afterwards. The shanking of the berries is often caused by mere surface-watering whilst the soil at a lower depth is dry. The roots are by this state of things forced to descend into perhaps inert cold subsoil; and with abundant

surface-dressings of suitable artificial manure the roots low down may be starving, because the waterings have not been copious enough to reach them, certainly a dry state of the lower parts of a border will set up shanking. All bunches should be carefully examined, and if there should be any stoneless or shanked berries, these should be removed. Over-cropped Vines suffering by reason of cessation of nutriment from the roots, are liable to become limp and sometimes rusty before they are quite ripe. Allow laterals to grow, and keep the temperature steady while the fruits are colouring. It is better to have a moderate crop of fine fruit than a heavy crop of poor quality.

PEACHES.—The stopping of gross wood is very necessary, but the relieving of the trees from wood which has fruited, can only be of service where growth is weak, and to aid the fruiting of the shoot-wood for next season. Crowding should never be allowed to exist, but the removal of gross growth indiscriminately, and all at one time, may induce the wood which is left to form prematurely prominent buds; and then when forcing is progressing, bud-dropping may be a source of trouble.

STRAWBERRIES.—It is often necessary for want of more suitable space, to place newly-potted Strawberries on walks and other places where worms abound, but it would save much trouble if such spaces were drenched with clear lime-water before the plants are placed upon them. There are worm-destroyers which serve the purpose of ridding the gravel of these pests effectually. When the roots have grown freely, the water supply must be increased, under watering causes splitting of crowns.

MELONS.—It is a mistake to allow Melon plants to become pot-bound before planting them in their fruiting quarters. Though firm soil is conducive to free fruiting, the roots cannot remain cramped in firm soil with safety.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

PEACHES AND NECTARINES.—The rains generally experienced have brought cooler weather, the prevailing conditions being favourable for vegetation. New growth on Peaches and Nectarines should be tied in, first dipping the points of the shoots in tobacco-water, if the black aphid is present. The operator must be careful not to let any of the liquid drop on to the fruits. Expose the fruits of mid-season and late varieties to the sun by removing leaves, or placing them behind the fruits. In some cases it may be necessary to push out the fruits from the wall, which can be easily done by placing bits of plasterer's laths behind them. The syringing of the trees must cease directly the first fruits show signs of ripening.

APRICOTS.—If wasps are troublesome, fruits may be gathered before they are quite ripe, and placed in shallow nicely-papered boxes, in a vinery where the Grapes are ripe, and from which wasps are excluded. Here, in two or three days the fruits will ripen perfectly, and be fit for preserving or dessert.

APPLES.—Where the fruits were thinned some weeks ago, it will in some cases be found that some trees are yet carrying a too heavy crop, and these should again have fruits thinned off. Where there are many trees thinning, the thinnings cannot be used in the kitchen, and rather than allow the trees to be too severely cropped, till the fruits may be required for use it will be best to give them away. Where fruits are required for exhibiting of Peasgood's Nonsuch, Duchess of Oldenburgh, &c., which carry such a beautiful bloom, and which are much impaired in appearance if they get rubbed, should have all the leaves that may cause such injury removed, cutting them off with a pair of scissors.

STRAWBERRIES.—All layering should be finished very shortly, especially if a full crop of fruit be looked for next year. Runners may also be cut from the mother plants, planted out on a shady border in rows at 1 foot apart and 9 inches in the row. Here they will make good plants for forming plantations next spring, and these plants, if they are not allowed to bear fruit next year, will produce fine crops the following year. All plantations from which runners are not required must have the same trimmed off, and the litter and weeds cleared up. In the case of young beds of Vicomtesse Héricart du Thury which may promise an autumn crop, unless the ground is foul with weeds, the strawy litter may be allowed to remain, thus saving the same amount of labour.

GRAFTED TREES.—The stem-growths on late-grafted trees should be cut off, as well as the ties round scions that are increasing in size, securing the latter to sticks. If American blight be observed when the grafting clay is removed, at once use the petroleum and Gishurst Compound insecticide as advised in a former Calendar.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

WINTER SPINACH.—The surface-soil being now moist, is in good condition to receive the seed for the main crop of Spinach. It is a mistake to suppose that this plant withstands frost the best if the plants are small at that season, and my experience is that the opposite holds good, strong well-grown plants being better than small weak plants. The drills should be at least 1 foot apart, and if the ground be in very good heart, $1\frac{1}{2}$ foot will be found a better distance, the foliage having then space for full development. As soon as the seedlings have grown to a size large enough to be handled conveniently, they should be thinned to at least 3 inches apart, and when the leaves touch there should be a further thinning. If the plants that are drawn at these thinnings are not required for filling-up purposes, they may be used in the kitchen. When finally thinned, the plants should be left at 1 foot apart. Spinach does best on land which is rich at the surface, the plants growing then freely, whilst of small size. It is not prudent to dig into the land a quantity of fresh manure, as it induces rank growth at a late part of the autumn when the roots have reached it; and such foliage is often cut down by the early frosts, and the plants rendered almost useless.

AUTUMN ONIONS.—Though it is yet a little too early for the sowing of Onions to stand the winter, it is well to take advantage of the moist condition of the soil, as the seed will germinate now more freely than if the land became dry. If the plants should get too forward they may be transplanted early in the month of September, which will check growth and leave time for the roots to take fresh hold. For early use, the Queen is a good variety to sow, fair bulbs being obtainable usually early in April; and by the middle of May, they are fully grown. Since this variety was introduced, a more trustworthy crop of spring Onions can be obtained than formerly, the plants seldom running to seed.

TURNIPS.—When Potatoes are dug up, the ground may be levelled and sown with Chirk Castle, Black Stone, Veitch's Red Stone, Golden Ball, &c. If the seed be sown to produce greens in the spring months, it is not necessary to thin the plants so much as when roots are the main thing, still ample space should be left in each case, so as to ensure strong plants.

GREEN CROPS.—Savoy for late use, Broccoli Kale, and late Sprouts, may still be planted.

SALADS.—These will now grow more freely than during the drought. Mustard and Cress, which is apt to damp off in very wet weather, should be protected from rain. Radish seed should be sown at intervals of a fortnight, Endive and Lettuce transplanted as occasion serves.

HERBS.—Make a sowing of Chervil on a warm border. Put in cuttings of Lemon Thyme in a cold frame, as it is a plant that gets destroyed by severe frost. Sage shoots should be layered, choosing strong ones for the purpose. Savory, and the supply of Basil, herbs in frequent request, should be kept up. Young Celery for flavourings, and any other herbs required in a young state, should be sown, to keep up the supply.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

MASDEVALLIAS.—Those of the Chimarra section of Masdevallia should now be examined as to the state of the materials, drainage, &c. All of ours are grown in baskets, which are hung up in the house where the Miltonia vexillaria are grown. At this overhauling, the plants should be dipped in a weak solution of Fir-tree oil, which will kill the red-spider, which sometimes infests them, and causes the undersides of the leaves to become of a brown colour. The compost that best suits these plants is one consisting of peat and sphagnum moss, rather more of the latter than of peat, the flower-spikes more easily finding an exit through it to the bottom and sides of the basket.

Miltonia vexillaria rubella and M. v. superba are

varieties worthy of being included in the choicest collections, and they come into flower one month later than the large-flowered forms. Miltonia v. superba is a very distinct and pleasing form, and I find that M. v. rubella is a better grower than those M. vexillaria with larger flowers.

CATTLEYAS.—Cattleya Dowiana, C. D. aurea, and the supposed natural hybrids between C. aurea and C. Sanderiana, are finishing up their pseudobulbs and flower-sheaths, and should not lack water at the root. The bright weather we have hitherto had has just suited these species, the spikes and the plants will flower next month and September, which is the period when a number of these so-called hybrids flower. After flowering at this season, they should be removed to a cooler and airier part of the house. C. aurea is the freer flowering of the two, besides being the most gorgeous species of Cattleya, and it does not require the great amount of heat that is often recommended for it, as there are plants of it at Pickering Lodge which are grown in various parts of the Cattleya-house which differ as much as 10° , and those plants at the cooler part are quite as strong and as forward as those placed at the hotter. These plants are cultivated in shallow Teak baskets, with a very small quantity of materials about the roots; these consist of crocks, peat, and sphagnum moss. The plants hang close up to the roof, and there is no difference in their health or flowering whether hung on the north or south side of the house. Cattleya Rex will turn out to be a grand addition to Cattleyas when fully established.

THE APIARY.

By EXPERT.

WASPS.—These are almost as great a nuisance to the bee-keeper as to the fruit grower, and the warm dry weather has suited them so well that they have in some places increased and multiplied to an alarming extent, and commenced their depredations earlier in the year than usual. They not only find their way into the hives, bent on stealing the honey, but they attack and kill the bees as well, and carry their bodies off piecemeal to their nests. Strong stocks are able to defend themselves better than the weak ones, and it is a great help to them to narrow the entrances to the hives, so that only one or two wasps can pass at a time. Chilly nights and mornings seem to place the bees at the greatest disadvantage, as wasps are active and able to fly at a lower temperature than bees, and at such times they seem to have it all their own way. One of the best ways of catching the wasps is to place small-necked bottles about the hives containing a little beer, sweetened with treacle or sugar, into which they will find their way and get drowned. The bees will be quite safe, as they will not touch this mixture. The wasp nests, too, should be sought out and destroyed, and if they are in the open, one of the easiest and most expeditious ways of doing it is to pour in some tar. Should the nest be in a bank or other place where tar cannot be applied, they will rarely be able to get out if the entrance is blocked up with wadding soaked in turpentine.

CONDEMNED BEES.—Where bees are wanted they can be obtained in most country districts to almost any extent for the asking, or at the rate of 6d. per skep from cottagers who are in the habit of sulphuring their bees. Arrangements should be made to drive them as early as possible, so that they may have plenty of time to get established as fresh colonies. It is generally necessary in order to make a good colony to put the bees from two or three straw skeps together into one frame hive; and they do much better if built-out combs can be provided, as the labour and exhaustion of building comb is saved them. These bees are very useful for strengthening weak stocks, but great care must be taken in uniting, or fighting is sure to take place. The safest way is to get the new-comers established in a hive stood at the side of the colony to which they are to be joined, and then unite in the ordinary way, by transferring the frames after both lots have been dusted with flour.

CLOSE OF THE SEASON.—The season of honey gathering has almost finished, and the sooner extracting is completed the better, as the honey will leave the combs better now than later on, when it gets thick. Filled sections should be taken away, and those not finished put back in the hive, in the centre of the crate if it is thought there is any chance of getting them completed. If not, they too should be passed through the extractor, and then returned to the bees to be cleared out.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited; but the Editor cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, JULY 25 { Royal Horticultural Society: Committees, at the Drill Hall, James Street, Westminster.

WEDNESDAY, JULY 26 { Royal Botanic Society: Musical Promenade.

SHOWS.

TUESDAY, JULY 25—Tibshelf Rose.

WEDNESDAY, JULY 26 { Gardening and Forestry Exhibition: Carnations and Picotees. Beckenham Horticultural.

THURSDAY, JULY 27 { Halifax Rose. Southwell Rose.

SATURDAY, JULY 29—Bedale Rose.

SALE.

FRIDAY, JULY 28 { Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63° 4.

A new forage plant. Few perennials have a nobler effect on a lawn, or anywhere where there is sufficient space, than *Polygonum sachalinense*. One drawback it has, and that is, that it throws up its great Asparagus-like shoots in profusion, and not always where they are wanted. A gravel path, as we know, offers no obstacle to this very "pushing" intruder. In the following letter, M. BALTET calls our attention to the value of the plant for forage purposes. *P. cuspidatum*, which has a similar habit, but which is of smaller dimensions, might, in its degree, answer equally well, but we have no personal knowledge whether or not the leaves, fresh or dry, would be acceptable to stock:—

"The severe drought we have passed through this year, will, we think, enable horticulture to come to the aid of agriculture as it did with regard to Vine-growing twenty-five years ago, in introducing the practice of grafting vines on the American stocks. *Polygonum sachalinense*, the subject now under consideration, is a perennial plant, hardy and vigorous, bearing with equal indifference extremes of heat in summer, and cold in winter.

"We have cultivated this plant since its introduction into France, for purely decorative purposes. The young white shoots are eatable, but they do not rival Asparagus, while its splendid foliage may be made use of for garnishing dessert and for packing fruit.

"Moreover, the trials of M. DOUMET-ADAN-

SON on the forage uses of our *Polygonum sachalinense* transmitted to the Académie des Sciences by M. DUCHARTRE, and the communications we have made to the Société Nationale d'Agriculture of France have brought the plant into notice, and called the attention of cultivators to it.

"The *Persicaria*, or *Sakhalin Polygonum*, was discovered by the Russian explorer, Maximowicz, in the Isle of Sakhalin, situated in the Sea of Okhotsk, between Japan and Siberia, a moderately large island, ceded to Russia by Japan in exchange for the Kourile Archipelago.

"In 1869, our friend EDOUARD ANDRÉ noticed this new introduction in the Jardin d'Acclimatation of Moscow, where it was exceedingly decorative, and brought it into France, telling us of its vigorous growth both above and below ground.

"The roots in fact branch on all sides, and pass horizontally from the rhizomes, penetrating the hardest soils, and giving origin to new shoots which further increase the size of the clump.

"The stems are numerous and closely set; they vegetate early, and are not long in attaining a height of nearly 10 feet, although the first frosts may attack the tips. Small, long, zig-zag ramifications develop in the middle and at the top of the plant.

"The foliage is most effective, the leaves being alternate, distichous, oval-oblong, measuring 12 to 15 inches long, by 9½ broad, and smooth with no trace of hairs. The petiole is carmine, the stem when developing shows a reddish tinge on a green background. The dull white flowers appear in small axillary bunches, growing together in long paniculate fascicles and clusters which bend slightly under their own weight. The bees visit freely the plant in autumn, but it is remarked that the bloom does not appear on a plant regularly cut for forage purposes.

"The experiments made at Baleine are sufficiently conclusive as regards the question of fodder. A young plant put into the ground is not slow in covering a surface 3 feet square with its leafy branches. The first cutting is made when the stems are from 3 to 4½ feet in height; if the second growth is strong enough, a second harvest is gathered, but on the following years three or four annual cuttings can be made.

"The total produce of the green yield may rise from about 44 to 88 lb. per square yard (20 to 40 kilogrammes per metre), it can therefore be reckoned at about from 95 to 190 tons per acre. According to the observations of the President, M. DOUMET, cattle are extremely fond of it. M. EDOUARD ANDRÉ has tried it under these conditions, also M. GUSTAVE HUOT, Président du Comité Agricole de l'Aube, and so have other growers with equal success. The *Sakharin Polygonum* not yielding seed, we multiplied it by the rhizomes, and quickly raised thousands of available plants which we were able to give to the Ecoles d'Agriculture, and in answer to daily demands for it.

"The best plantations are made in August and September, or in spring; an ordinary soil suffices, nevertheless, a little moisture serves to increase the strength and facilitate a second green crop.

"The cultural difficulties are not worth mention, and during winter no protection is needed. The dormant stems should be cut down in spring before the new buds develop. In spacing the plants, 3 feet of ground will not fail to be covered by their abundant and nutritive vegetation. CHARLES BALTET, Troyes."

DENDROBIUM FIMBRIATUM.—This is a Nepalese species, introduced so long ago as 1822, but one which holds its ground as "the finest of the orange-yellow *Dendrobies*," and "remarkably floriferous," *Veitch Manual* (*Dendrobium*), p. 43. The illustration we give, fig. 20, bears out this statement. It represents the variety *oculatum*, which differs from the type in the possession of a large purplish-brown spot on the lip. Mr. GRANT, gr. to Viscount GALWAY, Serlby Hall, Bawtry, who favoured us with the photograph, says the plant figured bore 500 blooms, and made twelve growths last year. The lip is elegantly fringed at the margin.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society will take place on Tuesday, July 25, at the Drill Hall, James Street, Victoria Street, Westminster, the Fruit, Floral, and Orchid Committees assembling, as usual, at 12 o'clock. At 3 o'clock, a paper on "Alpine Houses and Plants," will be read by Mr. H. SELFE LEONARD.

—This Society intends to hold, from August 22 to September 1, 1893, at the Royal Agricultural Hall, Islington, what is expected to be one of the greatest shows of fruit, flowers, and vegetables that has been held in this country. The amount of money offered in prizes exceeds £400. It is felt that the time has come when large numbers of nurserymen, professional and amateur gardeners, should be brought together once a year to study the advances made in horticulture, the latest inventions, and the most approved methods, in the same manner as is annually done by agriculturists at the Royal Agricultural and Smithfield Club shows. When the vast number of persons who are interested in horticulture and arboriculture is considered, this show should be made second to no other held in London during the year; and it should prove as profitable to the exhibitors as the annual cattle show held in the same building, and on the lines of which it is intended to carry out the exhibition. Cultivators are taking a lively interest in this new scheme, and it is thought that the central area of the great hall (the whole of which is allotted for competitive products) will not be any too large for the numerous exhibits. Special awards will be offered for heating apparatus, greenhouses, appliances, &c., and for these exhibits space is being largely appropriated. This part of the show is under the direction of the officials of the Royal Agricultural Hall Company, and it is anticipated that all the manufacturing firms of repute will make a good display on this occasion, and practically demonstrate to buyers the value of their productions. Those who may be desirous of securing space should make written application for the same without delay. We earnestly trust that something will on this occasion be done to break away from routine, to ensure artistic effect, and, above all, by careful arrangement and instructive labelling to enhance the educational value of the show.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual outing of the members and friends of the Society took place as announced in the grounds of Wycombe Abbey, High Wycombe, on the 17th inst., and brought together a large company, including visitors from Oxford, Aylesbury, Maidenhead, Slough, &c. The grounds and gardens, after the recent invigorating rains, were seen at their best, and Mr. G. T. Miles was foremost in making arrangements for the comfort and convenience of the company. One important part of the day's proceedings was a cricket match between members of the Aylesbury Floral and Horticultural and National Chrysanthemum Societies, in which the former proved successful by eight wickets. Many availed themselves of the opportunity to look through the Abbey, and to walk about the gardens and grounds. Early in the afternoon nearly 150 persons partook of dinner in the spacious new hall adjoining the Abbey, under the chairmanship of Mr. ROBERT BALLANTINE; the health of Lord CARRINGTON being drunk with enthusiasm. In the afternoon, visits were made to the chair-making factory of Mr. WILLIAM BIRCH; and also to the grave of the late Earl of BEACONSFIELD at Hughenden Church. A very large party assembled in the Hall to tea, and the great bulk of the visitors left by the 8 o'clock train for London. An extensive collection of seedling Carnations, now in bloom in the Abbey gardens, raised from seed sent by Mr. MARTIN R. SMITH, was an object of great interest.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—The arrangements for this Society's annual floral fête, which is to take place in the Central Park, Aberdeen, on August 17, 18, and 19, are well advanced. The schedule contains the following

intimation, which gave so much satisfaction last year:—"In the event of the fête being a financial success, 50 per cent. will be added to the prize-money offered in this schedule." The gala promises to be a very successful one. Competitors are reminded that entries close on August 14, at 12 noon.

CALATHEA ALLOUYA.—During the year 1890 (as stated by Mr. HART in the *Report of the Trinidad Botanic Garden*), attention was called to the sale of a curious tuber in the local markets, which was named "Topitamboo" or "Topi-nambour." The source of this tuber, and the scientific name of the plants producing it, were then unknown. They have now been authentically determined as the produce of a Scitamineous plant known as *Calathea Allouya*, Lindl. The smaller tubers, boiled, and eaten with salt, form a very agreeable and palatable food, and will possibly prove a welcome addition to the table in many

These will eventually prove very valuable records. Among novelties, mention is made of *Gongora Charlesworthii*, Rolfe, staged at the Temple Show; of *Cattleya intermedia* var. *picturata*, *Brassia Lewisii*, Rolfe, exhibited at the Temple Show; *Ansellia nilotica* var. *Rossiana*, *Odontoglossum baphicanthum* × var. *immaculatum*, *Lælia purpurata* var. *discolor*, *Odontoglossum Kramerii* album, *Neodryas Sacciana*, *Oncidium zonatum*, and *Cymbidium grandiflorum* var. *punctatum*.

PATENTS.—British patents are taken out at the risk of the applicants, who are expected to cause a search to be made as to the novelty of their inventions. To facilitate such inquiries, the Comptroller-General of Patents, Designs, and Trade-marks, has caused to be compiled an abridged list of all specifications between 1877 and 1883. From 1884 onwards, similar provision is made, so that the intending patentee may satisfy himself that he is not infringing

catcher. Although there is only one invention relating to fly-papers, there is a considerable number of compositions and apparatus for destroying phylloxera, caterpillars, slugs, wire-worms, lodging-house pests, beetles, field-mice, moths, Potato-bugs, &c. It is curious, also, that although silos were in use five centuries before the Christian era (according to Prof. THOROLD ROGERS), and were experimented with in America in 1876, and in France as early as 1852, the first English applications for patents appear to have been made as late as 1883. Gardening appliances are included under the head of "Agricultural Appliances." The latter list, comprising pp. xviii. and 246, with illustrations, may be had for 9d. All the publications referred to may be seen at the Science and Art Department, South Kensington, the Guildhall Free Library, and other like institutions.

THE FERMENTATION OF MANURE.—When stable manure is allowed to ferment, much of its "goodness" is lost; and it is the practice with some people to add gypsum, iron sulphate, and other chemicals, in order to prevent or retard this decomposition, the idea being that such substances will absorb the free ammonia, and then prevent it from being lost. The practice, however, is quite useless, for it has recently been shown by M^{rs}. A. HÉBER that it is only necessary to keep the manure sufficiently moist in order to prevent the loss of nitrogen through the ammonia being given off. The fermentation of manure is at once an advantage and a disadvantage; the latter may be obviated entirely by moistening the heap occasionally when the manure gets dry, the so-called "methane" fermentation is retarded, and the ammonia evaporates; the addition of water promotes this fermentation, and reduces the risk of loss of ammonia. (*Vide Comptes Rendus*, vol. cxv., pp. 1321 to 1323 for further details.)

MR. BARRON.—We observe in the *Bulletins d'Arboriculture*, that a portrait of this well-known horticulturist, reproduced in its pages, is said by an oversight, to have been taken from the *Gardeners' Chronicle*. The portrait in question was taken from the *Garden*, as indeed obvious from the woodcut itself.

LIQUORICE AND ORANGE CULTURE IN ALEPPO.—The cultivation of Liquorice seems to be attracting a good deal of attention in new countries, and developing in others. In Aleppo, for instance, it is stated to have very largely developed, and is considered to be of sufficient importance to merit special attention. It is now collected on a large scale throughout the province, and in some degree compensates for the losses caused by bad harvests; 6145 tons, valued at £43,231, were exported to the United States last year, as compared with 4293 tons, of the value of £28,077, in 1891. The export of Oranges also from Aleppo, which has hitherto been insignificant, is stated to be yearly increasing, new plantations having been made on the seaboard, and the sales in the English markets giving very satisfactory results.

REV. H. H. D'OMBRAIN.—The many friends of this gentleman will hear with sympathy of the great sorrow that has befallen him and Mrs. D'OMBRAIN in the loss of their elder daughter.

A NEW GREEN PIGMENT IN PLANTS.—The first green pigment not identical with chlorophyll, has recently been isolated from the succulent part of the fruit of *Trichosanthes pubera* by Herr TSCHIRCH. His method was to extract the fruit with ether, and then dissolve out the pigment from the residue by means of alcohol. It is a dark powder, and has been named *Trichosanthin* (*vide Chem. Centr.*, 1892, ii., p. 80).

TRINIDAD.—At this island, at 130 feet above the sea-level, the mean annual temperature for 1892, according to Mr. HART, was 78°·7; the maximum, 88°·7; the minimum, 67°; the range being very slight. Ninety-one inches of rain fell in the year, mostly in June, July, and October.



FIG. 20.—DENDROBIUM FIMBRIATUM OCLATUM. (SEE P. 96.)

tropical countries. With regular and improved culture, it is probable that the tubers could be much increased in size, and possibly in flavour. It is certainly a vegetable which should find a home in every tropical garden, and also well worthy of being tested for use in sub-tropical countries.

GARDENING AND FORESTRY EXHIBITION AT EARL'S COURT.—At the suggestion of the Directors, a committee of ladies organised a Rose Sale at the Earl's Court Exhibition on Saturday evening last in aid of the Victoria Fund. A number of stalls was arranged in the centre of the building around the band of the Hon. Artillery Company, and after 8 o'clock a scene of busy excitement ensued. Although the idea was hastily developed, upwards of £40 was realised. Among those who rendered valuable assistance were the Misses MILNER, Mrs. and the Misses DODSON, and Mrs. HARRY TURNER.

"THE ORCHID REVIEW."—In the current number, the history of Orchid hybridisation in general, and that of the genus *Odontoglossum*, is continued.

existing rights. The abridgment class, "agricultural appliances, farmyard, and like (including the housing, feeding, and treatment of animals)," contains short descriptions of over 300 inventions, from 1877 to 1883 inclusive. Of this number, about one-fourth relate to food for cattle and other animals, and the remainder to such subjects as barns and sheds, chaff-cutters, cages, and pens, oilcake-crushers, rick-covers, feeding and drinking appliances for animals, litter for live-stock, peat-openers, root-cutters and pulpers, and sheep, &c., dips and insecticides. Amongst the incubators also included, some are proposed for the rearing of infants and snakes, and even for propagating bacteria, as well as for hatching chickens. Inventive genius has also devoted its attention to the comfort of the ostrich in the matter of pens and foster-mothers. Traps are described which are intended not only to catch rats and mice, but also cats and dogs, birds and cockroaches, locusts and moles, &c.; there are only two man-traps, however, one being available also for rabbits, &c., and the other an electric burglar-

MR. JOHN KNIGHT.—We are pleased to learn that this gentleman has been appointed District Superintendent of Parks and Open Spaces, North of the Thames, under the auspices of the London County Council.

WALNUT TIMBER TREE.—It is stated in *Zeitschrift*, a new horticultural magazine published in Berlin, that for planting for timber the best kind of Walnut is that known in France as *Conturas*, *Conturie*, and *Pointue*—*Juglans regia rostrata*. The fruit has a point at each end, that at the stalk end being similar in form to the other, but is easily detached, whilst the other point can only be removed by the use of much force. The tree grows vigorously in the climate of northern Germany, is not at all injured by frost, and is very prolific. The kernel is not large, but it has excellent flavour. The variety can be recommended for road-side and forest planting.

THE "BOTANICAL MAGAZINE."—The plants figured in the July number are the following:—

Acanthorhiza aculeata, t. 7302.—A very handsome Fan Palm, 27 feet high, discovered in the mountains of S. E. Mexico by MM. LINDEN and FUNCK in 1840. It is remarkable for the rigid spinous adventitious roots that are thrown out from the base of the trunk. The flower-panicle now figured for the first time is pale yellow, the densely-crowded flowers dark creamy-pink. Hort., Kew.

Lasiosiphon anthyllioides, t. 7303.—A South African Thymelaceous shrub, with sessile linear-lanceolate revolute leaves in many ranks, and terminal heads of yellow tubular flowers. It flowered in the Cambridge Botanic Garden.

Miscanthus sinensis, t. 7304.—A handsome grass, with the habit of the Pampas-grass, but with linear leaves and looser flower-panicle. It is nearly allied to the Sugar-cane and to *Eulalia*; indeed, it is the *Eulalia japonica* of gardens. The plant figured under the latter name in the *Gardeners' Chronicle*, 1877, p. 565, fig. 89, referred to this species by HACKER, agrees better, says Sir JOSEPH HOOKER, with *M. japonicus*.

Vaccinium padifolium, t. 7305.—A Whortleberry, native of Madeira, closely allied if not identical with *V. arctostaphylos* of Asia Minor and the Caucasus. This wide severance of habitat is paralleled by the case cited by Sir JOSEPH HOOKER of *Rhododendron ponticum*, which is found nowhere between Asia Minor and South Spain. These cases point to Spain and the Atlantic islands as the western home of the fragments of a flora that once extended over Europe and North Africa, but which is now exterminated by adverse circumstances.

Crotalaria longirostrata, t. 7306.—A handsome winter-flowering Leguminous under shrub, with long-stalked trifoliate leaves, and racemes of yellow Laburnum-like flowers. The plant flowers freely in the temperate-house at Kew from December to March; it is, therefore, a desirable winter-flowering greenhouse plant. It is a native of Mexico.

VANILLA.—The only species which Mr. HART deems worthy of cultivation in Trinidad is *V. planifolia*.

CAMPANULATE FOXGLOVE.—An Australian correspondent, Mr. HACKETT, Adelaide, has kindly sent us a photograph of a spike of a Foxglove in this condition, which is due apparently to the running together in the embryonic condition of several flowers. In this country the change is very frequent, but we are not able to say what causes co-operate to induce it—probably, the causes are complex. An Australian climate is evidently no bar to its production.

STOCK-TAKING: JUNE.—As will be seen by the accompanying table of excerpts from the Board of Trade Returns for the past month, there is a falling off in the imports, which may be taken as an exceptional condition of affairs, in the face of increased exports. This falling off amounts to £908,687. Though there is a decrease in the imports of food, there is no improvement in the condition

of agriculturists at home, and the issue of a Royal Commission to take this matter into serious consideration, will be viewed by those interested with satisfaction. It is all very well to reduce the rents here and there by ten, twenty, and even occasionally, twenty-five per cent.; but however kindly meant, this is not the best method of relieving existing distress or of helping to make things better for the future. Owners and occupiers alike are interested in the thorough sifting of the matter from beginning to end; there is nothing sentimental involved, only the question of "letting live" as well as "living." The excerpts above noted are as follows:—

IMPORTS.	1892.	1893.	Difference.
	£.	£.	£.
Total value for month	£32,777,479	£31,568,792	—908,687
§II.—(A.) Articles of food and drink—duty free	13,323,160	12,462,886	—860,274
(B.) — do., dutiable	1,421,963	1,636,895	+214,732
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)... ..	4,425,523	4,519,062	+93,536
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,721,372	3,462,845	—258,527
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	908,295	1,024,584	+116,289
(B.)—Parcel Post ...	35,214	53,727	+18,513

Whilst noting a decrease in some of our colonial supplies, we are reminded of the stock-taking at the dinner of the Cobden Club the other day, when attention was directed to the fact that many colonists are kicking against protective tariffs—so protective in some cases as to be nearly prohibitive—consequently industries languish in towns, and the land is not cultivated as it might be, and certainly ought to be, when there is so very much surplus labour at home, and the "cry of the poor" is no new thing in colonies which ought not to be so burdened. The diminution in the imports of Apples last month, as compared with the same period in 1892, seems to point to greater care in selection, and probably the higher prices for those imported. This note brings us to the following extracts from the general mass of figures, and they will be found to possess more than the usual interest:—

IMPORTS.	1892.	1893.	Difference.
Fruits, raw:—			
Apples bush.	71,872	39,857	—31,815
Cherries "	115,918	196,213	+80,295
Plums "	6,103	28,053	+21,950
Pears "	23	4,732	+4,709
Grapes "	3,398	5,186	+1,788
Unenumerated "	93,535	236,708	+143,173
Onions "	132,926	139,120	+6,194
Potatoes cwt.	794,081	1,100,643	+306,562
Vegetables, unenumerated, raw, ... value	£110,369	£184,241	+£73,872

It may not be inopportune to note here that, notwithstanding the competition with outsiders in the item of Hops, there is no diminution in the area of land devoted to the cultivation of this plant. If there be an occasional decrease in the area where profitable growing is somewhat problematical, there is an increase where profit is assured by geographical position, and this we note as an item of interest to all concerned in the brewing interest.

THE EXPORTS

for June of goods manufactured in Great Britain and Ireland show an increase of £714,953 as compared with the month of June, 1892. This increase is pretty generally distributed, but the exports to India show the greatest value—a fact which may certainly be attributed to the "fixing" of the rupee,

and consequent steadying of the rate of exchange. The Indian Government is generally lauded for the steps they have taken, and a still further increase in our exports to our Eastern Empire may with some confidence be now anticipated.

MENTONE PRODUCTS.—Referring to the cultivation of economic plants in Mentone, the British Vice-Consul says that in consequence of the mountainous character of the country, the natural products are few, the principal one being Olives, which of late years have suffered much from disease, and also from the competition of the towns round about, where the expression of the oil is carried on in a scientific manner, whereas the old method is still employed at Mentone. A few Olive plantations are well cultivated, and appear profitable to their owners; this must be considered an exception, as the Olive culture for this part of France seems to be rapidly declining, and put aside as unprofitable, the ground being employed for building purposes or for Lemon and flower culture. A special mention must be made of the growing of Lemons, which has regained its former celebrity. During the summer months Lemons of the first quality fetch as much as £2 5s. per 1,000. The total crop may be estimated at 200 tons per annum. Lemons from this part are superior in quality to those of Sicily, although not so large. The exceptional climate of Mentone renders flower growing comparatively easy, and with a scientific knowledge of gardening, and a little capital, good results can be obtained during the winter. Flowers and vegetables reared under bell-glasses thrive well, and vegetables, such as Potatoes, Asparagus, and Green Peas are successfully reared in the open air. These articles when sent to the London and Paris markets fetch very high prices.

HYBRID WATER LILIES.—We learn that several of M. MARLIAC's hybrids and seedlings have been very beautiful in the Trinity College Botanic Garden, Dublin, since May. The colours range from white to rose-crimson or yellow. *N. Marliacea chromatella* (sulphur), *N. exquisita*, *N. odorata rosea*, *N. Leydeckeri rosea*, *N. pygmaea Helvola* are perhaps the best, but all are beautiful. Their hardiness is shown by the circumstance that they have passed the last two winters in a cold-water pond.

M. A. DE LA DEVANSAYE.—We are pleased to have the opportunity of congratulating our French horticultural colleagues on the recognition paid to horticulture in France by the appointment of M. DE LA DEVANSAYE as a Chevalier of the Legion of Honour. M. DE LA DEVANSAYE has been President of the Horticultural Society of Angers for twenty years, and is well known not only as a connoisseur, but for his direct contributions to the progress of horticulture.

THE ACTIVE PRINCIPLE OF ANEMONE SYLVESTRIS.—Dupuy finds this to be a well-defined solid, which crystallises in needles. He says (*Nouv. Rem.*), "From a therapeutic point of view, anemonin is an agent of great value, acting efficaciously in acute and chronic bronchial catarrh, and as a calmate of the spasmodic and irritative cough of whooping-cough. It is also of value in eye troubles, dependent upon the rheumatic diathesis, and possesses powerful emmenagogue properties!" Who would have thought it of the simple little *Anemone*!

SOME CHEMICAL PRINCIPLES OF THE PINE FAMILY.—A great deal of attention is at the present moment being given by chemists to a class of substance mostly occurring in the vegetable world and called terpenes, on account of their close relation to turpentine. The most important of these is called pinene, which occurs in most of the Pines; then there is camphene, which is closely connected with the product of the camphor tree. Limonene is found in the fruit of the Lemon-bergamot, Cummin, Dill, Fir-needles, and in *Erigeron canadense*. Dipentene is very similar to Limonene; it occurs in the camphor tree and in the Elemi. Sylvestrene is found in some of the Russian and Swedish Pine trees; phellandrene in the Bitter Fennel, the Water Fennel, Elemi,

and Eucalyptus. Terpinene occurs in the Cardamon, and there are two or three others that are only slightly known.

THE PRODUCTION OF ORRIS-ROOT, ATTA OF ROSE, AND VANILLA.—*The Chemist and Druggist* states that the cultivation of Orris (*Iris florentina*), which was introduced into southern France a few years ago by a Grasse perfumer, is assuming larger dimensions, and it is considered that there is every prospect that it will be a permanent addition to the list of products cultivated in the maritime Alps. At present, the Orris grown around Grasse, is all consumed locally in the preparation of oil of Orris-root. We also gather from the same journal the following interesting notes on the Rose crops at Kezanlik and the Vanilla crops at Mahé (Seychelles). Regarding the former, the following letter is given from a Bulgarian correspondent:—"I have just returned to Kezanlik from a tour through the Rose district, and

auctions during the week ending May 13 was very small, there have nevertheless been considerable imports lately, and indications favour a further decline in the article at an early date.

ROSE BUDDING.

THE season for budding Roses having arrived, we insert, for the benefit of amateurs and others who may not be well acquainted with the operations, several figures, which will make it perfectly clear to them. We need merely add to the information found under each figure, that in separating the bud from the shoot of which it forms part, the inner part, or core of the bud, must not be drawn out, and there is less risk of this being done if it be stripped off from top to bottom; and there must be no bruising of the bud, or loss of time in inserting it on to the shoot of the Briar, &c.



Fig. 21.—Making Slit in Bark of Stock.

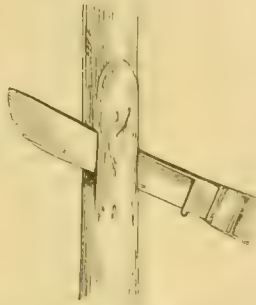


Fig. 22.—Sheling-off a Rose Bud.

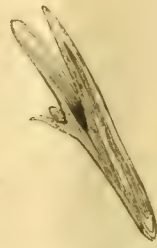


Fig. 23.—Separating Shield from the Wood.

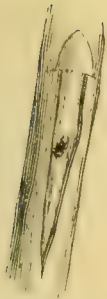


Fig. 24.—The Bud Inserted, but not cut off at top.



Fig. 25.—The Bud Tied-in.



Fig. 26.—Loosening the Tie, after the Bud has begun to grow.

ROSE-BUDDING DIAGRAMS.

can assert that there is no truth in the rumour that the gardens have been damaged by the severe cold weather. The fact is, that in spite of the harsh winter, the heavy fall of snow has acted as a protection from the frost which followed. There are some few gardens damaged, especially those exposed towards the north, but they are few and far between, and practically all the gardens are in very good condition. The real danger to the Rose crop is the white-frost, which usually comes on in April during the budding season. This danger has been successfully passed this year, there having been but little frost. The next danger to which the crop will be exposed will be excessively dry or hot weather in the gathering season. Should this also be averted, the harvest will be more than an average one. There is every probability that this will be so, as the season is very backward, and danger of frosts is almost passed now. On the subject of Vanilla, it is reported under date of May 6, from Mahé, that the crop was estimated to yield from 35,000 to 40,000 lb. Although the quantity declared for sale at the London drug

The bast, which should be new and soft, is best when used in a wetted state, and it must be drawn firmly, but not tightly, and fastened by slipping the loose end through the last coil.

Some persons prefer worsted as a binding material, and there is this to be said for it—it is elastic and soft. The idea is to close the slit made in the stock, and press home the bud, that no rain may enter—the air cannot be excluded.

PLANT PORTRAITS.

ANGRECEM ARTICULATUM, *Lindenia*, t. 380. A very beautiful species, introduced originally from Madagascar by Rev. W. Ellis.

BISMARCKIA NOBILIS PALMACEÆ, *Garden and Forest*, June 7.

BRASSIA BICOLOR, Rolfe, in *Lindenia*, t. 378. Flowers nearly 5 inches in greatest length, sepals linear, very acute, yellow, with the lower third purplish-brown; lip broadly ovate acute, yellow, with purple spots at the base.

CHERRY LÉON LECLERC, *Bulletins d'Arboriculture*,

July. A small but prolific and highly-flavoured Cherry.

CHRYSANTHEMUM VICE-PRESIDENT BARIGNY, *Revue Horticole*, July 1.

CLERODENDRON TRICHOTOMUM, *Garden*, June 17.

CUCUMIS SATIVUS VAR. **SIKKIMENSIS**, *Garten Flora*, t. 1392.

DIANTHUS HYBRIDUS PRINCE BISMARCK, *Neubert's Deutsches Garten Magazin*, July.

EPIDENDRUM UMLAUFTII, *Zahlbruckner, Wiener Illustrirte Garten Zeitung*, t. 2.

JUSTICIA CARNEA, *Revue de l'Horticulture Belge*, July.

LYCASTE SKINNERI VAR. **PURPUREA**, *Lindenia*, t. 379.

MAXILLARIA CALLICHROMA, Rehb. f.; Rolfe, in *Lindenia*, t. 377. The three long narrow sepals are white at the base, and yellow at the tips. The petals are of the same colour, but recurved below the middle, and again near the summit; lip three-lobed, the front lobe white with a yellow disc, side lobes purple.

PELARGONIUM CAPITATUM, *Revue Horticole*, July 1, woodcuts.

PLAGIANTHUS LYALLI, *Garden*, July 8.

RHODOCHITON VOLUBILE, *Garden*, July 1.

STRAWBERRY, THE COMET, *Bulletins d'Arboriculture*, June.

TEA ROSE, ETHEL BROWNLOW, *Gardeners' Magazine*, July 1.

TRICHOMANES PETERSII, Gray, *Meehan's Monthly*, June.

ORCHIDS.

MESSRS. SEEGER & TROPP, LIMITED.—The compact little nursery at 112, Lordship Lane, East Dulwich, has always a number of interesting things, as well as the showier specialties of Vandas, Masdevallias, and Cypripediums, all of which are well represented there. The Vandas, consisting chiefly of varieties of *V. suavis* and *V. tricolor*, are in a very good state of cultivation, and occupy the greater part of one house. To these have lately been added a fine importation of *V. cœrulea*, *V. (Esmeralda) Cathcartii*, and another promising species, which is supposed to be *V. Arbuthnotiana*. In the same house are a fine plant of *Renanthera Storyi*, supposed to be the largest in cultivation; the extremely rare *Sobralia Beyeriana*, a large mass of the old, but still not common, *Aspasia lunata*, and other rare species.

The collection of Masdevallias has been very difficult to keep in good condition throughout the late hot weather, and two expedients have been adopted in order to lessen the effects of the great heat. In one case, a large collection of the showy species have been placed outdoors, standing on inverted flower-pots placed in a set of large trays containing water, and arranged beneath the shade of trees. In the other case, the plants have been allowed to remain in their low, span-roofed house, but spent manure has been thickly banked against the walls, and short litter placed over the glass of the roof. Both these methods have been productive of good results. But few of the Masdevallias are in bloom, but we noted the rare *M. guttulata*, *M. calura*, *M. Peristina*, *M. gibberosa*, and a quantity of *M. infracta*, varying from nearly white to purple.

In another house we noted the curious *Angræcum armeniacum*, with flowers somewhat resembling those of *A. bicaudatum*; *Bulbophyllum brevidens*, several pretty *Octomerias* and *Pleurothallis*, *Sarcanthus insectifera*, *Cologne Thuniana*, and among fresh imported things, a grand lot of *Cymbidium Devonianum*, *C. eburneum*, *C. Mastersii*, &c.

CATTLEYA LABIATA GASKELLIANA.

Flowers of two beautiful and dissimilar varieties of this free-growing and useful Cattleya come from the gardens of Joseph Broome, Esq., Sunny Hill, Llandudno. The one has grand flowers, over 7 inches across, the petals being 3 inches wide; the whole flower is of a bright rosy-lilac, with a base of a yellow colour, the front of the labellum of a rich crimson. The other flower is of a pale blush hue, without a blotch of crimson on the lip. It is a charming form. Both flowers have the delicate fragrance usually found in the Gaskelliana division of *C. labiata*.

FAIR OAK LODGE.

The owner of this compact and pretty garden, W. A. Gillett, Esq., has, during the last few years, acquired a nice collection, the plants of which, under the care of his gardener, Mr. Carr, are in the best of health. In this part of South Hants (Eastleigh), Orchids are not much cultivated, therefore a collection like this one becomes all the more interesting. At the time of a visit made to the place recently, the following were in or just going out of bloom:—*Cattleya Mossiæ* was represented by 130 spikes of grandly-coloured flowers, making a rare display; *C. Mendeli* was a prominent variety, so well was it flowered, as were plants of *C. gigas* and Veitch's variety of *Vanda suavis*. *Lælia purpurata*, and the white form of it, were in perfection of bloom; the somewhat rare *Schomburgkia tibicinis* had sixteen flowers on one spike. A house nearly full of *Odontoglossum Alexandræ*, *O. Pescatorei*, *O. (Miltonia) vexillarium*, *O. cordatum*, and *O. inoculatum* exhibited these species in their best forms, and made a fine display. *Epidendrum vitellinum majas*, *Cypripedium Warnerianum*, and *Dendrobium suavisimum* were noteworthy plants. *E. M.*

CARNATIONS.

MESSRS. VEITCH & SONS, CHELSEA:—The beds were well filled with flowering-plants, very floriferous, but like almost everything else this season, showing in their small blooms the lack of moisture in the soil. The rain had indeed come, but it was too late to do much in adding size to the blooms. We take the novelties by preference, viz., Ruby (Turner), cerise-pink, a good thing, but this year it wanted shade to bring out its beauty; Queen of Bedders is another from the same source, of a red cherry tint. The Lady, a fancy Carnation, with a yellow ground, flaked and stained with scarlet—a fine flower, that is said to force well; another—Almira—is one of the best of this class. Grant Allen is a flower with a calyx that does not split, and possesses a long footstalk; it is a cherry-red self. Empress is a white self, not quite new, free in flowering, and the flower of good shape and substance. Amy Herbert is not what the florists would call a good variety of Carnation, the edge being fringed, but it is excellent for cutting, being very free; and equally fine for cutting purposes is the scarlet self, Montague. Another self is Border Maid, of a shade of flesh-pink. Winter Cheer has done well this year; Oxonian is a bright cherry-red self of much merit; as is Cantab, a scarlet self, with the true Clove scent; Sultan is a crimson self. In Dr. Parke we have a dwarf pink Carnation, with a good calyx, and altogether a capital variety. William Toby is a free-flowering dark purple self. The Earl of Beaconsfield is a dark crimson, flaked Carnation, one of the best of the dark flakes. Alice Ayres, now fairly well known, has done better this year than others. It is always a variety that may be depended upon to give satisfaction.

In Picotees and Pinks we noted nothing that is novel. The marginal colours of the Picotees, and the colours of flake and fancy Carnations in general, it was observed, have run a good deal this season.

The collection is a large one, and the plants succeed admirably, notwithstanding smoke, fog, and a want of light in the winter season, which render cultivation in a London nursery so difficult.

MR. JAS. DOUGLAS, BOOKHAM.

In one of the most picturesque localities in Surrey, and one where but little business is carried on except for the accommodation and entertainment of the thousands of excursionists who go from London every week during the summer time, has been established Edenside Nursery by Mr. Jas. Douglas, of Great Gearies, Ilford. Only about four minutes' walk from the Great Bookham Station of the L. & S.-W. Ry.—18 miles from Waterloo—is the spot that has been chosen, and here Mr. Douglas intends to cultivate his especial favourites for sale, such as Carnations, herbaceous Calceolarias, Cinerarias, and Auriculas. At present only one house has been erected, the dimensions of

which are 100 feet long and 18 feet wide, and a more admirable house for such plants it would be difficult to build. Two more houses will be erected shortly, and about 6 acres of land have been acquired, which will be available at Michaelmas. This nursery being in its infancy, until the other two houses have been built—and excepting a few Auriculas—the Carnations are the only plants which can be dealt with.

About ten days ago, when we had the pleasure of visiting it, the house we have mentioned presented a glorious picture, being full of Carnation plants in full bloom. The finest varieties were there, including the whole of Mr. Martin Smith's seedlings, and many of very considerable merit, which have been raised by Mr. Douglas himself. The large experience that Mr. Douglas has had with this class of plants ensures good culture; the plants were all healthy in appearance, the "grass" plentiful and strong, and if some of the blooms were not quite so large as they should be, this is easily accounted for, when we remember the dry, scorching atmosphere that has prevailed, and at the very time the plants were all stood out-of-doors. Each section or group of this beautiful family is well represented by its very best productions up to the present date; and it may be seen that it is Mr. Douglas's intention to cultivate an exceedingly choice collection of named florist's varieties, as distinguished from merely decorative or border ones. On looking at the yellow-ground Picotees first, we noticed Mrs. R. Sydenham, a seedling raised by Mr. Douglas; pure in ground, it has an excellent rose margin, long calyx, and robust habit. Mrs. Henwood is another good thing, heavily suffused with rose, and particularly compact in habit; Hercules, one of Mr. Smith's latest seedlings, is a large, handsome flower, with rose edge, but it breaks its calyx rather frequently. A very free-flowering variety is Lillian; the yellow ground is pure, and the rose flaking very fine. Others we may mention are Mrs. Whitbourne, Eurydice, and Diomedé, a large Picotee, with very pretty yellow ground, and rose fringe (Douglas).

It is easy to select a few pretty bizzarres of exceptional quality from the collections here. Phœbe (Smith) is a pink and purple-flake, tube long, the habit and form excellent; the flaking most harmoniously mixed. Then there is Chas. Henwood (Douglas), a purple-flake; the flowers are large and striking, deserve considerable commendation. Miss Constance Grahame (Smith) is a type of what a scarlet-flake ought to be—the scarlet is thoroughly distinct and most brilliant, and the form very fine. Gregorius (Douglas) is a pale scarlet flake, the flower rather thin, but of good form, and the flake excellent. One of the best of the rose or red-edged Picotees is Ganymede; it obtained a First-class Certificate last year, is of good sturdy growth, and the flowers are heavily edged with red. Desdemona is pure white, with pretty rose edge; flowers not extra large. Melpomene is another fine one in this section.

The self Carnations are, perhaps, after all, as useful and as fascinating as any of the numerous groups, and here we see some of the most excellent types yet produced. Duke of Orleans (Smith) must be acknowledged a decided advance upon Germania, both in colour and growth; Hayes, scarlet (Smith), has a large flower and splendid petal, of the most wonderful scarlet; The Hunter (Smith) is of fine form, and a deep Apricot colour; Corunna is, perhaps, one of the prettiest of Mr. Smith's self-coloured varieties, primrose-yellow in colour, and it has a remarkably strong habit; Louis Philippe (Smith) is a flower very similar in colour to the last-noticed, has a fuller and more dense flower, and its short petals have wavy margins—a very effective flower; a velvety dark crimson of good form and large flower is Mephisto (Smith); and Waterwitch (Smith) is a delicate blush-white, full and large flower.

A very fine group of King of Scarlets (Douglas) will thoroughly convince any who have the pleasure of a like glimpse of the value of this for effect. Its petals are broad, and the colour of exceptionally

bright scarlet. Oriflamme (Douglas) took the special prize for twelve bunches of a seedling Carnation last year at the National Carnation and Picotee Society. It is bright scarlet, and altogether free from objectionable features. Lady Marie Currie is a large flower of delicate fleshy rose colour, of value as being a good self, and has been obtained from the fine flaked variety of this name; both the forms are good, and will be propagated for sale. Mrs. Louisa Jameson has a perfect bloom in form, with very smooth edges, in colour it is dull red. Other good ones are Abigail, Niphotos, and Royal George, the latter a good purple if it were less inclined to force the calyx.

We have referred to the best of those we noticed when at Edenside, but there are many to which we cannot do justice, and a number of unnamed seedlings, which will undoubtedly be heard of later. Mr. Douglas has made a good start, and we doubt not but that he will meet with success.

MR. F. GIFFORD, WHITE HART LANE.

At this place, and about 1 mile from Tottenham, Mr. F. Gifford acquired, some two years ago, what is now known as the Montague Nursery. What until then was a farm-field has been transformed, until now it is well covered with herbaceous plants and Carnations; it is to the latter, however, that more care is given, and upon which most interest centres. Mr. Gifford has had considerable experience, for it was only a few minutes after we first met that we elicited the fact that he was an old "Kewite;" and beside many other places, he has had a considerable time at the Hale Farm Nurseries of Mr. Thos. Ware. Evidently Carnations are his pet subjects, and the border varieties, rather than the fancy and wonderfully-edged flowers of the florist.

When we visited this establishment, we found that there were many thousands of plants in rows in the open, and the only building consisted of a few frames, so that pot culture is not at present practised to any extent. Of the border varieties, however, there were many very fine ones, most of the old ones that are really standard varieties, and can still claim recognition in the face of their newly-born rivals, were there, and in good groups, and what new ones we noticed were principally varieties that have been raised by Mr. Gifford himself, some of which are deserving of note and praise. Empress is not new, but it is a seedling of Mr. Gifford that looked extremely well—a useful white one; Leander, another one, and of a pretty yellow, has good stiff petals and worthy of a place in most borders. A good scarlet is that named Montague, whilst a magnificent white one, flowers very delicate and light, especially useful for decoration, has been called Mrs. F. Gifford. Brethardt is an especially noteworthy variety, a good doer, compact in bloom and of deep purple, which, when the bloom is passing, goes almost black. Amy Herbert is a bright pink colour, pleasing, and its petals are wide and good; and a good robust grower is Professor Goodheart. Mrs. Frank Watts is a yellow seedling of considerable merit; and Fair Rosamond is a large white flower, sometimes having a splash of scarlet, but not often. It throws the petals well back, and would be extremely desirable if the calyx would not split. Two other good border varieties are Edith Brill, clear white, and good smooth petals; and Cantab, a very fine scarlet, powerfully scented. The best of all the seedlings, however, is that called Duchess of York, and noticed in our columns on p. 48. It is a good grower, and is the earliest to bloom of all the varieties that Mr. Gifford has in the open ground; the delicate flesh-colour is exceedingly pleasing, and the flower is large and full.

SUMMER PRUNING.

THE accompanying figures serve to illustrate the system of pinching fruit trees, a matter now attracting much attention, and show the effects of the process in a period of three years. The operation of pinching the young shoots is commenced nearest the leader, sometimes only one, two, or even three at the same time, according to circumstances, as soon as they are from 2½ to 3 inches long, as seen in figs. 27 and 28, at *a, a, a, a*, all other shoots being allowed to grow till they are a certain length, when they in turn are pinched at *b, b, b*, in fig. 28. Severe pinching often causes the shoots operated upon to die off, as will be seen in fig. 27 at *c c*, and to convert the existing spurs into shoots. In general, however, the



FIG. 27.—SUMMER PRUNING. (SEE P. 100.)

young shoots after they are pinched will remain stationary, with only one or two leaves on them, and in the year following will form spurs, see fig. 27, *d d d*. Under certain circumstances, when the trees are very vigorous, they will break again, so that they require to be pinched a second, and even a third time, as will be observed in fig. 28, *e e f f*, and *g*. When the tree is found to have too much sap, those branches which have been pinched a second or third time are left untouched at the winter-pruning, and they are only cut-in after they have produced some young shoots, which prevents a too great development of those branches. The branches *h, h* in fig. 28 illustrate the case, and they will be cut off at *i, i*. The dead stumps will sometimes produce spurs at their bases, as is seen at *k* in fig. 27. The pinching of the young shoots on the upright leading shoots differs a little from that practised upon the lateral branches. Supposing fig. 28 to be a leading shoot, instead of pinching the shoots, *a, a*, as they are represented, they should be allowed to grow to the length of the others, *b, b, b*, before they are pinched, so as to insure sufficient wood for the next winter-pruning.

HOME CORRESPONDENCE.

SUMMER PRUNING.—Your correspondent, "Extension," describing the shoot of an Apple tree sent to the editor of the *Gardeners' Chronicle* (p. 749, vol. xiii.), says, "Now, under the aimless pinching manoeuvres of Mr. Fish and 'W. S. C.' this shoot would have been much less productive, and worried to a stump, and the tree would have been about one-quarter its present size, and proportionally less fruitful." In reply to "Extension," I would say that I am not aware that the teachings and practices of either Mr. Fish or myself afford any grounds whatever for "Extension" to accuse us of teaching and following aimless methods of procedure. Speaking for myself, I can assure him that I am an extensionist myself in the matter of training fruit trees, and have practised and advocated extension for several years in the horticultural press, and in a work recently published by a London firm, my object, like that of many other fruit-growers, being to build up a fruitful tree in as short a space of time as is possible. To maintain it in vigorous health and fruitful condition as long as I can, I encourage a productive growth in the tree, pinching the summer-growths of vigorous-growing varieties two or three times during the season, so as to divert the flow of sap into useful channels, i.e., the promotion and formation of fruit-buds. Trees of less vigour are, on the other hand, treated accordingly, judicious and not indiscriminate pinching of the shoots being practised, and no "aimless" pinching permitted. It is a well-known fact that several varieties of Apple, Pear, and Plum are naturally free-bearing, and need but very little pruning of any kind, as they make but trifling superfluous growth, the energies of the trees finding an outlet in the development of the fruit and fruit-bud. In conclusion, I would make reference to the prolific "20-inch long Apple shoot" which "Extension" sent to the Editor in support of his condemnation of summer pinching. It is a pity that "Extension" did not give at the same time the name of the variety, the age of the tree, and the depth and nature of the soil in which it grows. This self-same shoot, "Extension" avers, would have been worried to a stump under the "aimless pinching" of Mr. Fish and "W. L. C." I should say that no practical man would consider it necessary to pinch such a tree as "Extension" describes. It has not, we are told, been root-pruned for more than fifteen years. The shoot of this tree, sent to lend emphasis to his remarks, is, as stated above, 20 inches long, and the full growth of three years, and was, as well it might be under the circumstances, studded with fruit-buds and Apples, having an average of a little more than $6\frac{1}{2}$ inches of growth for each year! And this shoot, we are told by "Extension," has never been "pinched or pruned!" and that the tree from which it was taken was planted by himself, and is past the "gross stage!" Truly the growth was sufficiently "pinched or pruned" by Nature to render artificial pinching and pruning unnecessary. It would be interesting and useful to have the particulars as to soil furnished, and to know if all "Extension's" orchard and wall trees make the same fruitful growth as that from which the branch was cut, and his means for checking gross growth. Trees growing in a light shallow soil on a gravelly subsoil will neces-

sarily make less growth than would the same varieties in a deep retentive loam, and require different treatment. Free-bearing varieties, as a rule, make a small amount of growth annually, and this is short-jointed, bristles with fruit-buds, and requires little, if any, pinching or pruning of root or branch. There is no use in "Extension" and "E. M.," coming before the readers of the *Gardeners' Chronicle*, which is a very large and important one, with the side-issue of a question of national importance. *W. L. C.*

ROOT-PRUNING.—I do not think Mr. Crowley is altogether justified in attributing, as he does at p. 15 of the *Gardeners' Chronicle*, July 1, the bad set of Apples, and the subsequent dropping of the fruit that did set, to the fact of his trees having been root-pruned, as the principle, under certain conditions, is perfectly sound, assuming that the work is skilfully carried out, and as it appears to have been done in this case. Of course, no practical man would for a moment think of root-pruning a fruitful tree—that is, a tree which bore fairly good crops of fruit every year, when the blossom escaped injury by frost, and which consequently make growth sparingly, this being, as a rule, short-jointed and consolidated, and only sufficient to maintain the tree in a healthy condition. As a matter of fact, trees growing in light shallow soil, resting on a substratum of chalk or gravel, rarely, if ever, need root-pruning. It is almost certain that Mr. Crowley's trees would have behaved in an identical manner had they not been root-pruned at all in the last or previous year, as it is certain that there was no moisture left in the soil surrounding them, which an extended growth of root could have absorbed at about the time the fruit dropped from the trees. In the 4-acre orchard at this place, as well as in other places in the district having the same kind of soil (light), the sheets of blossom with which the trees were clothed flagged so badly towards the end of the month of April through sheer lack of moisture in the soil, that they were nearly all parched up by the tropical heat which has prevailed up to last week, and these trees had not been root-pruned for several years. Some fine specimen Apple trees in the park a few hundred yards distant from the orchard in question, were similarly affected, and with the same result of stunted growth and very thin crops of unusually small dried-up-looking fruits. Mr. Crowley states, towards the end of his note, "from the result of this year I think root-pruning may be carried too far." This is quite true, and, according to his own showing, I am inclined to think that he erred in that direction. "For some time," he says, "these trees which are now six or seven years old, had, when the growth was over-luxuriant, been root-pruned, and the roots shortened back to about 2 feet from the stem, and the ground made up with good loam and brick-rubbish." Thus it would appear that the trees had been root-pruned at least two or three times during the six or seven years of their existence! I should say that trees which had been root-pruned and treated in the manner described by Mr. Crowley, say, the end of September, 1891, would, as the result of that operation, have emitted a mass of fibrous roots during the interval elapsing between then and February, 1893, and these small roots would have pushed into and gathered more nutriment from the surrounding soil than the unpruned trees would have done growing at the same depth and in the same kind of soil. Fruit trees which had been root-pruned after the fall of the leaf last autumn would not, as your correspondent points out, have had time to make much root-growth before the spell of hot dry weather set in early in the month of March last, and therefore would feel the pinch if they were not watered and heavily mulched as trees are generally after being root-pruned. In conclusion, I repeat that the principle of root-pruning under certain conditions is sound, but sometimes, as in the case of Mr. Crowley's trees, the conditions of the weather closely following upon the operation, were unfavourable to the well-being of the trees. *H. W. Ward.*

—The indictment brought by Mr. Crowley against the practice, or, shall I say, the art, of root-pruning is a severe one; and, although not by any means an enthusiast in its favour, I should like to point one or two things in relation to what has been written that may merit attention. In the first place, and apart altogether from the nature of the weather we have had this year, did the requirements even of the severest form of root-pruning compel the cutting back of roots only 2 feet from the stem? I should say not so, most certainly. For trees some six or seven years old I should not

have root-pruned nearer than $3\frac{1}{2}$ feet at the most, and then to have found and severed roots only that were large and productive of gross wood. Where roots were cut all round, as seems to have been the case at 2 feet from the stem, I think that was practice which no root-pruner, however enthusiastic, would justify. Obviously, root-pruning is a part of the system of artificial culture which must prevail so long as fruit is produced under modern conditions. If trees have to be of certain forms and sizes, and restricted to prescribed areas, there is no other course open but to check branch or wood developments, for mere top-pruning will not secure the desired result. Then, it is well known that free roots means free growth, and where the soil is deep and good, free growth means unbounded wood production, and little fruit. In thousands of cases the pruning of the roots, where done with judgment, has produced the happy mean and plenty of fruit. The nurseryman who grows his thousands of trees is practically always root-pruning, because he annually lifts and replants his trees, but he does not unduly injure the roots by severe cutting. The private grower can hardly lift his trees every year—indeed, prefers not to have to lift them at all, but does so sometimes at intervals usually with good results. Generally his root-pruning consists of severing the largest roots a few feet from the main stem, and that drastic remedy is rarely finished in one season, as it is good practice to root-prune one-half the tree in each of two successive years. Now, it is obvious that where root-pruning is done, some special assistance should be given to the tree to help it weather the first season, if needed, both by liberal mulching and watering. Never within the memory of man, perhaps, has such treatment been needed to even many established trees, more fully than this year, much more, therefore, to hard root-pruned trees; nay, many large trees, never root-pruned, have suffered even worse than have Mr. Crowley's, for I have but recently seen on good holding soil, fruits lying about thickly beneath, cast off by the trees entirely from want of moisture. Such being the case, is it fair to condemn root-pruning from such a comparatively isolated failure as the present exceptional year has produced, especially when, as admitted, the pruning seemed to have been hard almost beyond precedent? But even in that case, with ordinary care, had we experienced an average moist season, would there have been failure to produce a crop? I think not. *A. D.*

—I have carefully read Mr. Crowley's case, pp. 15, 16, and can only marvel that he did not water his trees before losing the fruit, if that was at all possible, rather than describe this obvious cause of loss so clearly after it had shrivelled up, and fallen. We root-prune fruit trees, lift their roots nearer the surface, and limit their area to 2 feet run from the bole, and from 18 inches to 2 feet deep from the surface; and we are bound to come to their assistance during such a spell of three months drought as we have had. Mr. Crowley's logic is quite sound. Place a tree vertically in a pot—practically, it matters little whether it be in a pot or tub, or a limited area of ground—and to maintain it and its produce in health, it must be subjected to good culture as to water, and, to some extent, heat. Had Mr. Crowley shut in the moisture, and shut out the sun-heat with a good surface mulch of spent manure or litter for 6 inches to a foot thick, his crops would have been safe. Neither should root-pruning be carried too far, nor repeated too often. It is a heroic remedy for the stingy complaints, meagre crops, or absolute sterility, but as soon as it has forced the trees into fertile ways it should be allowed to fall into abeyance. The practical men will easily see whether or not it should be repeated. But as fertility is almost sure to repeat itself, and as root-pruning should result in fertile roots placed at the most fruitful depth, the probability is that root-pruning may not need repeating often or at all in the life of any particular tree. One great difficulty with many cultivators is to get them to start in such useful directions as root and summer-pruning. But a greater difficulty is to get them to stop when the operation is no longer necessary. *D. T. F.*

—I have read with interest Mr. Crowley's note on the above, and with regard to our getting too artificial in the culture of fruits, I think, as yet, we have a little more to learn and practise before we are perfected. In a season like the present one, the like of which may not occur in a life-time, trees, be they root-pruned or not,

are casting their fruit in many gardens from lack of moisture in the soil, so that it is scarcely the kind of season to build any sound theories or practice upon. That root-pruning may be carried to extremes does not admit of a doubt, and cases in which that is so are not infrequent; but the root-pruning of fruits, when it is properly carried out, has good results. There are, however, a few points in the practice which should be duly considered before any interference with the roots is commenced. We have to take thought of the nature of the soil, its quality, depth, subsoil, and drainage; and then the room, whether the heads of the trees are restricted, or allowed to grow in size. If the trees are standards, and planted at a good distance apart, and the soil is fairly good, resting on a well-drained subsoil, I would say, "Don't touch the roots, and prune the tree sparingly after the foundation of the head is formed." The trees, good sorts, will soon come into bearing, after which time they will need liberal treatment. The case is different when space is limited, and the knife must be freely used to keep the trees within the allotted space, and the roots must then be taken in hand. I have root-pruned several trees in this garden at various times with good results, but not large trees, at one operation; I always do these in twice, the work being done in the autumn. In the case of young trees in orchards, the pruning is frequently over-done; and if the branches were allowed a little more freedom, the trees would produce sooner more fruit-bearing wood, but at no time should the heads become crowded in the interior with small shoots, which lack of light and air render barren and useless. Moderate extension should be the aim of the orchard cultivator, and it is doubtful whether, in the majority of cases, the roots of standard Apples and Pears should ever be pruned, provided the roots were evenly spread out, and not buried too deep in the ground at the time of planting. *H. Markham, Mere-worth Castle Gardens.*

—Mr. Crowley does well in calling attention to this matter in his note in a recent issue of the *Gardeners' Chronicle*. I am sure that root-pruning is too much resorted to. I allude to those persons who may be called the older school of gardeners. There is certainly less root-pruning practised now-a-days, and I will venture to say that more fruit is obtained under what may be termed the newer system, which is simply to let the roots alone when the trees have been planted in the right manner. I assert that Apple trees, in the majority of cases, can be so managed as to bear full crops of fruit without ever root-pruning them at all, no matter how rampant the growth. The exception to this rule is generally when the trees have but limited space to grow in; for instance, those planted close alongside the garden paths. Strong growers, as Warner's King, Bismarck, Gascoigne's Scarlet Seedling, or Grenadier, sorts which occur to one at the moment, cannot readily be induced to bear freely when the space allowed the trees is not large enough for considerable development. It is sometimes requisite to plant rather thickly so as to obtain a collection of Apples for kitchen and dessert uses; but it is then useless to expect the trees to make much growth and to bear fruit in sufficient quantity to satisfy the average of cultivators without restricting the roots in some way; and root-pruning is absolutely necessary to gain the end in view, and to lessen the growth of branches, and induce the formation of fruit-buds. If under the conditions such as those Mr. Crowley points out the trees were root-pruned, and no opportunity presented itself to supply the trees with water after the fruit was set, there are still three other devices open to the cultivator to hinder the fruit from dropping in large numbers: first, by thinning it to a reasonable quantity on each tree directly it can be seen which are the most promising fruits, a very important point with young trees, which should not be over-taxed whilst young, especially if the roots have been recently interfered with. I not only thin the fruit on all the young trees here—1000, or more—but the bloom-buds are lessened in number, which relieves the strain on the trees. The second point is to mulch the roots with partly-decayed stable manure, or with leaf-soil, wood-ashes, and decayed vegetable refuse. Those who do not practise mulching when watering is not possible, cannot realise the benefits derived by the trees from the practice, not only so far as the current season's crop is concerned, but the following season. When the roots are exposed to a hot sun, and the ground is rendered hard by the winter rains, the roots are driven down in quest of moisture, not finding it at or near the surface, with the consequence that much strong growth is made. The



FIG. 28.—SUMMER PRUNING. (SEE P. 100.)

third and alternative practice, where neither watering nor mulching can be carried out, is to maintain the surface soil continually in a loose friable state, to prevent its cracking, and affording openings for the escape of moisture by evaporation. By this means alone I have been enabled to keep some hundreds of Apple trees in a thriving state during the recent hot and dry weather, and preserve a full crop of fruit on them, too. The trees in question were planted in the autumn of 1890 and winter of 1891, and not a drop of water or a handful of mulching material have I been able to provide them with, but I am satisfied with the results. I will now refer to some trees which have been planted about six years, and have, as yet, not borne a good crop, but have made abundance of wood. Some persons would say, the only way to make these trees fruitful would be to root-prune them. This, I say, is absolutely unnecessary, except in the case of one or two sorts, where the width and height are available, which I may assume is always obtainable in an orchard. There may be other reasons why these trees make so much growth and so little fruit; in the first place they may have been planted too deeply, and if that is so, it is useless to expect fruit in quantity until the roots are brought nearer to the surface, and enabled to derive more benefit from sun-heat than is otherwise possible, and induce the forming of fibrous roots, which would bring about better ripening of the wood, which alone is the means of obtaining abundance of fruit. Simple root-pruning of such trees might check luxuriant growth, but it would not ensure a crop of fruit. The evil of deep planting in heavy soil is a serious one, and I should, under such conditions, replant the trees, bringing the roots near to the surface, and by care in regulating the branches, mulching the soil, and so on, I should expect in a very few years a full crop of fruit; and once this is obtained, there should not be much difficulty afterwards in having an annual supply, unfavourable seasons of course excepted. If trees are planted in such a manner that their roots are near the surface, whether they are standards or bushes, no matter how vigorously they grow, it is unnecessary to root-prune them, but there should be no close pruning or pinching of the leading shoots; and the branches should be bent outwards in such a manner that all parts of the tree can receive a full share of light and air. Surplus shoots not required for filling gaps in the tree, being pinched in the month of June, to within 3 inches of their base, allowing the leaders to extend at will; and assuming that the latter have reached from 2 to 3 feet in length by the autumn, instead of pruning them back to within 1 foot of their base, or less as some do, I cut off the tip at about 6 inches, as a means of inducing the buds behind to plump up, and form either fruit-buds eventually, or lateral shoots to furnish that part of the tree in the near future. Where the leading shoots are less than 2 feet long, and these promise to push their base-eyes, as well as those situated nearer the point, I do not interfere with them at all, but allow them to grow. The season following, the trees will be found to be less productive of wood, and there will be more signs of a fruit crop. By the let-alone-plan, or a modification in pruning, the trees very soon exhaust themselves of much, there is less of gross growth, and this is followed, as everyone knows, by a full crop of fruit. The less growth of an objectionable kind is apparent, the greater will be the increase in fibrous roots. Persons who have a heavy soil to deal with, would act wisely in planting their trees on the surface, and forming a slight mound over the roots, just sufficient to cover these. In all this, I assume that the land has been properly prepared, by digging the soil to a depth of not less than 18 inches. If this method of planting were more practised than now, we should hear less lamentation about the fruit crops, the need of root-pruning, and canker of the branches. There is another aspect in the question of Apple-growing, viz., the obtaining the greatest amount of crop in the shortest space of time. I allude to the question of stock upon which the trees are worked. I know some persons stick to the Paradise stock, but give me trees that are worked upon those of the seedling Apple stocks, raised mainly, I believe from the pips of cider Apples. Some persons aver that the Paradise stock induces an earlier fruit crop, but that is impossible, as I have experienced in the heavy soil of this place. Give me a tree worked upon a seedling Apple stock [Crab?] for freedom of growth, early and continuous bearing. Waltham Abbey Seedling and Ashmead's

Kernel Improved are varieties of Apples which have given me the most trouble in inducing them to bear anything like a full crop of fruit; and for several years I tried them upon the let-alone principle, but I was compelled at last to severely root-prune the trees. Now I have no trouble whatever with them. *E. Molyneux.*

ACHIMENES LONGIFLORA.—On looking through the tents at Chiswick last week, I noticed a small collection of Achimenes nicely bloomed, some of which were marked "new," one being Achimenes longiflora. This must surely, I thought, be a mistake, and on referring to my Thompson's *Gardeners' Assistant*, p. 807, on reaching home, I found in the list of varieties there given, "A. longiflora major, large flower, blue." I know that we used to have forty years ago both A. longiflora and a rather larger flower, A. l. major, neither now cultivated so much as they deserve, people running after the gaudy but far less elegant tuberous Begonias. All the same, we ought not to have a plant as "old as the hills" dubbed new. *The Old-un.*

EUCALYPTUS AND THE "TIMES."—In the *Times* of Monday it was stated, in an article on the colonies and a paragraph about Uganda, that it was useless to congratulate Sir Gerald Portal on his Eucalyptus planting, because that tree (varieties were ignored) takes six months to sprout and sixty years to become a tree. Whence the *Times* correspondent's experience has been derived I do not know, but I myself have planted the Eucalyptus in good soil, under a hot sun, and in eight months had my seedlings of 1 foot high become small trees of 9 feet high—an average growth of a foot a month, which few other plants can rival; and I have seen the Eucalyptus in thirty years become a magnificent forest tree. *D.*

AVENUES OF ELMS.—Has your correspondent who made enquiries on this subject seen the avenues near Ham House, Petersham, the residence of Earl Dysart? *X. Y.*

WHICH IS THE EARLIEST PEA FOR MARKET PURPOSES, LIGHTNING OR ECLIPSE?—I notice in the issue of the *Gardeners' Chronicle* of June 17 a paragraph relating to "High prices of growing Peas," from which comparisons may be drawn by novices in Pea culture as to which is the earliest variety. Practical men are, of course, aware that to do so would lead to erroneous conclusions; there cannot, however, be any denial of the fact, that £18 10s. per acre is a remarkable price for Lightning, which appears to have been realised about June 8. The following incident, which I have not seen noted in the press, was probably not considered by those immediately concerned of sufficient importance to call the attention of the public to it at the time. It is a fact, nevertheless, that on May 17, three weeks before, a field of the Eclipse, measuring a little over 2 acres, was sold by Messrs. Moore & Son by auction in Tewkesbury market, which brought the still more remarkable price of £45 for the lot. Here, then, is a case in which some may reasonably infer that the blue Pea was the earlier of the two. We frequently see in the pages of the horticultural press notices of the earliness of certain individual varieties of the Pea tribe, and without questioning the *bona fides* of the reports given, unless these are tried against others of the same class, and under the same conditions, they are really mere testimonials in favour of the skill of the cultivator and the resources at his command, and no criterion as to the intrinsic merits of the Pea itself. Now, I think it would be of the utmost value if a market grower who had grown the two Peas in question in large breadth, say, by the acre, and under exactly similar conditions, would give us the benefit of his experience. Mine has been, so far as Lightning is concerned, that it is much after the style of the old Ringleader and Carter's First Crop—very suitable for a gentleman's garden, where extra attention and protection can be given, but too tender for field culture, while it is too pale a green to be attractive to market buyers; consequently my old favourite, the Eclipse, being of a hardier constitution, reaches a marketable state, all things being equal in its cultivation, generally before its electrical competitor. *An Old Gardener.*

MILDEW ON PEAS.—When at Rousham Park, Oxfordshire, at the end of last summer, I was much struck with some lines of Ne Plus Ultra Peas, which appeared to be entirely unaffected by mildew at a season of the year when this variety is often much subject to it. I found that Mr. Wingrove, the gardener, immediately upon the mildew putting in

appearance, dusted the soil about the roots and the lower part of the foliage with soot, with the result that the spread of the mildew was at once checked. While the Peas were manured by the soot being placed upon the soil, Mr. Wingrove stated he always found soot to be an unfailing remedy against the mildew. *R. D.*

LINUM GRANDIFLORUM.—Blue, rose, and white, are known garden varieties, parentage uncertain; the crimson-red Linum is indigenous to Algeria, and is probably a distinct species, although generally permitted to pass as a garden variety. It is hardly fair to make our seed list answerable for a general horticultural error. *S. A., Harlesden, N.W.*

IMPROVED WROXTON ONION.—This is one of the best keeping Onions in cultivation, testimony to this effect being borne by some of the leading Onion cultivators in Oxfordshire. It is of a large globular shape, intermediate in tint between the brown and the White Globe varieties, and when matured it takes on a golden-brown skin colour. In its long-keeping quality it follows the old Brown Globe, or James' Keeping, which might have been one of its parents. I was at Rousham Park, Oxon, last summer just as Mr. Wingrove had pulled his crop of the Wroxton Onion; they were of good size, even, and very solid and heavy. As the old school of Onion growers held to the Brown Globe as a keeper, the newer school are equally satisfied with the Wroxton. *R. D.*

THE R.H.S. EXAMINATIONS.—I would like to suggest that following upon the publication of the questions set in the respective grades at the recent Royal Horticultural Society's examinations, should come the publication of the answers by the leading candidate in each grade. These would prove of educational value, in helping novices in examinations to understand the sort of method and matter required from them at any future examination. The great thing just now is to encourage effort in this direction, and there is an immense amount of timidity to overcome. In the meantime, the publication of the replies being deferred for a few weeks, it would be capital practice did prospective candidates but have a try at the questions, and then see, when the best replies are published, how near they may have arrived at exactness. Work of this kind should prove of exceptional interest, as well as of value to young gardeners. *A. D.*

SEED CATALOGUES: THE TRUE LORD ANSON'S PEA, LATHYRUS MAGELLANICUS.—This plant disappeared suddenly from commerce nearly forty years since, and L. azureus, in a Mahatma-like manner, appeared in its place, and has been tacitly supported in its usurped position throughout seed-growing Europe. The original species is being sought after, and may soon be reinstated. *S. A.*

BLUE HYDRANGEA HORTENSIS.—I remember, many years ago, when living at Lionton Park, Kent, under the late Mr. J. Robson, all of the above plants, which were growing in a certain part of the park, produced flowers of a blue colour; the soil was a stiff clay, and contained a quantity of iron. Cuttings taken from these plants and flowered in pots invariably gave pink flowers of the ordinary kind; in another part of the grounds, where we had a light limestone soil, the plants always had pink flowers. I have somewhere seen a statement that a solution of alum given to the plants occasionally before flowering commences, will cause the flowers to become blue, but have not been able to try it here, as the plant is too tender for this place. *W. H. Divers, Ketton Hall Gardens, Stamford.*

SOCIETIES.

ROYAL CALEDONIAN HORTICULTURAL.

JULY 12.—On this date considerable enthusiasm among all classes of horticulturists was witnessed in the Waverley Market, by exhibitors who came from far and near, to show their devotion to the queen of flowers. Though rain had fallen heavily the day previously, and on the show day also, the Roses were tabled in wonderfully fine condition. The nurserymen came forward in their usual strength, but gardeners and amateurs were not more than half the number which are often taking part in the contests at this season. Plants and fruits also hold prominent

positions at the summer shows. The former were less than usual, but fruits, especially Grapes and Peaches, made up for a deal which was lacking in the other classes. The entries were 170 of plants, 140 of cut flowers, 101 of fruits, and 200 of vegetables. In the nurserymen's classes there were 20 of plants and 80 of cut flowers. The tables filled with plants and cut flowers from the local nurserymen as usual were conspicuous in the large hall, and many objects of beauty and interest were exhibited. Entering at the east end a brilliant display of Pansies and Violas were most attractive, by a table well-filled from Dickson & Co., who had their choicest flowers on exhibition. Among Pansies, Holyrood, White Sylvia, Tory, Dorothy Tennant, and Bullion, held their own among many novelties. The centre of this table was ornamented with Palms, and the margins were neatly clothed with dwarf Ferns, Roses, and other cut flowers. From this firm was also a good collection of Carnations and Cloves, in pots and as cut flowers, in variety.

From Messrs. Methven came a fine collection of Figs in pots, loaded with fruit, Brown Turkey, Negro Largo, White Marseilles, Brown and White Ischia, and Brunswick were the most promising for small-pot culture. From the same firm was also a collection of Clematis in pots; White Enchantress, Lord Nevil, Lady Bovill, Gipsy Queen, Duchess of Teck, and Princess of Wales were among the choicest. They were placed with numerous Lilies, auratum platyphyllum being specially attractive. From Mr. Watt, Newstead, came an attractive exhibit of Disa grandiflora, about five dozen plants in small pots. Beside these was a very interesting collection of alpine plants from Mr. Cuthbertson, Rothsay.

Messrs. Laing & Mather, of Kelso, were, as usual, strong in Carnations; their Lady Nina Balfour (a pale pink Carnation) was again exhibited, and showed its fine character, with strong stems and bold flowers. The yellow Germania and pink Malmaison were in fine condition.

Collections of alpine plants from Messrs. Cocker, Aberdeen, had their admirers; and a table of Araucaria excelsa, in various sizes, from Mr. Phillips, Granton Road Nurseries, were finely arranged with Ferns, Carnations in pots, and plants with striking foliage.

A finely-arranged table of flowering plants, interspersed with Ferns and many plants with fine foliage, came from Mr. John Downie, Beech-hill Nursery, the glass in which is to be devoted to the class indicated. Double Begonias (Triomphe de Nancy was very fine), Dracæna Lindenii, and some well-coloured Crotons gave a fine effect to the gay flowers.

The tables arranged for competition were confined to gardeners. Mr. Geo. Wood, Oswald Road, was 1st, with a display of Crotons of fine colour, Liliums, Vandas, a few Odontoglossums (grande), Thunia Marshalliana, Dracænas, &c.; Mr. A. Crichton, gr. to Mrs. Croll, was placed 2nd, with a very fine table arranged for effect.

Stove and greenhouse plants were contested in the various classes by Mr. McIntyre, The Glen; and Mr. Bald, Cannon House, but not equal to what these keen exhibitors often table in the Waverley market.

Foliage plants brought forward stronger and better competition, Mr. Crichton, Liberton, taking 1st prize—Dracæna angustifolia, Pandanus Veitchii, and a variegated Pine-apple were in fine health and colour. Mr. John Forester as 2nd had well-grown Dracænas, and a fine Croton Williamsi. Mr. McIntyre was 3rd, with finely grown plants of Tillandsia Zebrina, Rhopalacanthus, Dracæna Lindenii (finely coloured), and Alcasia Sanderiana.

Passing long tables of Ferns, Palms, Dracænas, Fuchsias, Alpines, cut flowers in great variety, we stopped at the long line of table plants, where Mr. John Downie was placed 1st with twelve neat and healthy plants. Croton superba, C. Thomsoni were prominent in this exhibit. Messrs. Laird was a good 2nd. This long line of plants separated the Roses, and was effective.

The Roses were most attractive, and crowds assembled round the tables throughout the day. For forty-eight distinct varieties, the 1st prize was awarded to Messrs. Croll, of Dundee. These were of high colour, and the flowers spotless, many of which were of great size. Her Majesty, Ulrich Brunner, Maid of the Mist, Countess of Oxford, Comtesse de Serenye, Chas. Lefebvre, Silver Queen, Sénateur Vaisse, Marguerite de St. Amand, Duchess de Morny, Viscountess Folkestone, Marie Van Houtte, S.-M. Rodocanachi, Francis Lacharme, Marguerite de Roman, Madame Victor Verdier, Lady Alice, General Jacqueminot, White Lady, Mons. A.

Lapère, Merveille de Lyon, Prince de Rohan, Marie Baumann, Madame Lambert, Gloire de Margottin, Baroness Rothschild, Heinrich Schultheiss, Margaret Dickson, Prince Arthur, Lady Mary Fitzwilliam, Etienne Levett, The Bride, White Baroness, Mons. E. Y. Teas, Louis Van Houtte, Mrs. John Laing, Rosieriste Jacobs, Souvenir de S. A. Prince, Duke of Edinburgh, Violette Bouyer, Constantin Tetrikoff, Marchioness of Dufferin, Victor Verdier, La France, Harrison Weir, Helène Paul, John Stuart Mill completed a most creditable collection. The 2nd prize went to Mr. Dickson, of Belfast, with a fine collection, but we have seen that distinguished cultivator table finer blooms; they had been slightly injured by rain, but many remarkable flowers were in this exhibit. Mr. Cocker had a good 3rd.

For twenty-four blooms, Messrs. Cocker took the lead; Prince Arthur, General Jacqueminot, Duc de Rohan, Margaret Dickson, La France, and White Lady were of fine form, colour, and of good size. Mr. Croll was 2nd, and Mr. Smith, of Stranraer, 3rd; both of these exhibitors also showed well in this class.

For twenty-four Teas, Messrs. Cocker & Sons 1st prize; the most of their flowers were very finely formed. Devoniensis, Souvenir d'un Ami, Princess Beatrice, Cleopatra, Souv. d'Elise, Rubens, and Madame Hoste were extra fine. Mr. Robertson, nurseryman, Helensburgh, was 2nd; his Maréchal Niel, The Queen, and Archduchess Thérèse were of extra merit.

In the class of twelve trusses, three of each, Messrs. Cocker was 1st, and Mr. Croll 2nd. Great numbers of "Scotch" and Ayrshire Roses were exhibited by Mr. Cocker. Baskets of Roses and bouquets were in great numbers.

The gardeners' classes were not strongly represented. Mr. Henderson, Clemerston; Mr. Thomson, of Kinglassie; Mr. W. Parlange, Rosslea Row; and Mr. Harper, Perth, were the leading prizewinners, and they exhibited many remarkably fine flowers. It is worthy of remark that among the Scotch exhibitors there was less "dressing," or it might be termed disfiguring, of Roses, than we have seen. There is a rule in the schedule to disqualify these unnatural flowers, and we learned from members of council that this rule was to be put more strongly in force in future. We think it should have been applied with decisive force years ago. Nature may be assisted, but should not be distorted.

Leaving many fine exhibits of Roses unnoticed, we had to give a loving glance to some choice Orchids. Mr. Wood, gr., Oswald Road, was 1st, with Cattleya Sanderiana and Vanda suavis in good form; and Mr. Sharpe of Freeland was 1st, with a collection of four, Cattleya Gaskelliana, Odontoglossum vexillarium, Disa grandiflora, and Cypripedium Lawrenceanum rubellum. This exhibitor had a very good plant of Cypripedium Veitchii with fifteen fine flowers. Among the cut flowers and bouquets many good species of Orchids were prominent.

The fruit, especially Grapes, was of great merit in most of the classes. Pines from The Glen, Culzean Castle, and Archerfield, were fair for finish, though some would have been better elsewhere. A good rule to prevent small Pines, unsuitable for an exhibition table being exhibited, has been inserted in the schedule, which does not admit a Queen under three and a-half pounds, and Cayennes not less than five and a-half pounds.

The collections of fruit were contested by four exhibitors, Mr. Kirk, Alloa, out-distancing others by his grand Grapes—Hamburgs of great size and bunch, and finely coloured; Madresfield Court very perfect in form, size of bunch and berry; and fine Buckland Sweetwater. Peaches, Melons, and Figs were very good in this collection of eight sorts. Mr. Smith, Oxenford Castle, had a capital 2nd, his Peaches, Nectarines, and Figs were first-rate. Mr. McIntyre, The Glen, was 3rd, with a fine lot. Some others competed well in this class.

First for four fine bunches of Grapes went to Mr. Murray, Park Hall, for large bunches of Black Hamburg, and Muscat of Alexandria. Mr. Kirk was 2nd, with capital Black Hamburg and Buckland Sweetwater, and Mr. Smith was 3rd. In this class there were many fine exhibits. For two bunches of white Grapes, a splendid pair of Duke of Buccleuch came from Mr. Rutherford, Airthrie Castle, Bridge of Allan. For "any other black" Mr. Kirk was 1st with a splendid pair of bunches. For two bunches of Black Hamburg Mr. Rutherford had 1st, with compact finely-finished bunches. Peaches were fine in size, though some were inferior in colour. Many of the exhibits were over-ripe; Cherries and

Strawberries were strongly represented in quantity, but there were few remarkable dishes among them. Melons were not numerous, but appeared to be good. Vegetables were good, especially Cauliflowers, Peas, Cabbages, Turnips, Carrots, and Potatoes. In the collection of twelve sorts were some fine Cucumbers, and Tomatoes. The best Tomatoes came from Mr. Jaffrey, gr., Harewood, Leeds.

Though this fine show was not so remarkable for bulk as some previous exhibitions, it was altogether remarkable for absence of inferior quality among the exhibits.

WOLVERHAMPTON FLOWER SHOW.

JULY 11, 12, 13.—Unsettled weather, with a thunder-storm on the first day, greeted this exhibition; still, there was a very large attendance on the second day, and an immense attendance on the third.

For sixteen stove and greenhouse plants, Mr. Cypher, Cheltenham, was 1st, and had in his lot very fine examples of *Ixora Pilgrimii*, a superb *Erica Parmentieri rosea*, *Kalosanthes coccinea*, in brilliant colour; a grand *Allamanda nobilis*, *Statice profusa*, amongst the blooming plants; 2nd, Mr. Alderman Marriott, Coventry (gr., Mr. W. Finch), in whose collection were a monster *Ixora Williamsii*, an example of fine culture; a dwarf, beautifully-flowered *Allamanda grandiflora*, and a model *Erica impressa*, and two grand *Crotons*.

For six stove and greenhouse plants, 1st, Mr. Cypher, with *Stephanotis floribunda*, *Aphelexis prolifera Barnesii*, *Allamanda nobilis*, *Ericas Thompsonii* and *Parmentieri rosea*, *Ixora salicifolia*—a capital six; 2nd, Mr. Alderman Marriott, with *Dipladenia amabilis* in grand form; *Ixora Fraseri*, and the very distinct and fragrant *Allamanda Williamsii*, a variety evidently a hybrid, with a strong parentage of *A. nerifolia*, and profuse blooming; and two other plants.

Ornamental plants, Palms, and Ferns, were well shown.

In the class for eight Exotic Orchids, Mr. Cypher was the only exhibitor, and he had *Miltonia vexillaria*, *Cattleya Gaskelliana*, and *C. Sanderiana*; a very fine *Odontoglossum Harryanum*, *Epidendrum prismatocarpum*, *Odontoglossum Pescatorei*, *Cypripedium Curtisii*, and *C. Selligerum*.

Liberal prizes were offered for groups not to exceed 450 feet, and five very fine groups were staged: 1st, Mr. Cypher; 2nd, Mr. F. Denning, florist, Birmingham; 3rd, Mr. W. H. Dyer, Birmingham.

ROSES.

Several classes were devoted to these flowers, and there was a very good display, the northerners getting it all to themselves in the open classes, the southern growers being unable to compete. Messrs. Harkness & Sons, Bedale, were 1st respectively for seventy-two blooms, thirty-six and twenty-four blooms; and 2nd for forty-eight blooms. Messrs. Robt. Mack & Son, Catterick, were 2nd for seventy-two blooms and for twenty-four; and 1st for forty-eight blooms. Mr. H. Merryweather, Southwell, was 3rd for seventy-two and for forty-eight; and 2nd for thirty-six blooms. Messrs. D. & W. Croll, Dundee, was 4th for seventy-two, 1st for twelve light-coloured Roses, very superb blooms of *Etoile de Lyon*; and 1st for twelve Teas.

In the amateur classes, Mr. Budd, Bath, and the Rev. Mr. Pemberton led, the former being 1st for thirty-six and twenty-four blooms, and for twelve Teas.

PANSIES.

Messrs. Dobbie & Co. easily won the 1st prize, with an extensive well set-up display; 2nd, Messrs. W. Paul & Co., Bridge of Weir; 3rd, Mr. Campbell, Blantyre, Silver Medals being awarded to the last-named. In Messrs. Dobbie's display were six new Violas, which received Certificates, viz, Miss Gibson, Prince of Orange, Duchess of Rothesay, Lady Dufferin, Lillie Langtry, and Avondale. In addition, this firm had a very fine display of Sweet Peas, striped French and models in form of African Mari-golds, Pelargoniums, Carnations, herbaceous blooms, &c., to which a handsome Silver Medal was awarded; 30 yards of tabling was required for this superb display.

In the gentleman gardeners' classes, open to the neighbouring counties, a good display was made. There was an excellent display of Gloxinias, some good stove and greenhouse plants. Six fine Orchids, which obtained the 1st prize, exhibited by Mr. J. Palmer, gr. to W. Bown, Esq., Birmingham, containing a wonderfully fine *bona fide* specimen *Epidendrum prismatocarpum*, with twenty-four fine spikes of

bloom; *Cattleya Sanderiana*, very fine; *C. Mendeli* and *C. Mossii*, *Epidendrum vitellinum majus*, and *Cypripedium Lawrenceanum*.

Some fine Fuchsias, Caladiums, and exotic Ferns, were staged, also two lots of good Begonias and one lot of six excellent pyramidal *Coleus* and medium-sized zonal Pelargoniums. In this section good prizes were also awarded for groups of plants not to exceed 400 square feet: Mr. Powell, gr. to G. H. Kenrick, Esq., Birmingham, was 1st; and Mr. Horton, gr. to W. Fowler, Esq., Sedgley, 2nd. Other flowers, fruits, and vegetables were competed for in this section.

AMATEURS.

Another division was set apart for amateurs who do not keep a gardener, and who reside within ten miles of Wolverhampton, and there was a spirited competition for groups and other plants, cut flowers, &c.

Another section was for cottagers only of the district, and the exhibits were so numerous and so good as to give the judges plenty of work. There were ten excellent exhibits of vegetables, ten exhibits of collections of herbs, seventy dishes of capital Peas, fifteen lots of three dishes of Potatoes, and other classes, well filled with good all-round exhibits.

FRUIT.

There was a fair display of fruit, some of which was of excellent quality. In the class for ten kinds, Mr. Gilman, Ingestre Hall, was 1st, with Foster's Seedling and Black Hamburg Grapes, both well coloured; Violette Hâtive and Royal George Peaches, and a fine Hero of Lockinge Melon. Mr. Bannerman, gr. to Lord Bagot, was 2nd; with two other exhibits.

For four bunches of Grapes.—1st, Mrs. Meakin, Stafford; 2nd, W. H. F. Hayhurst, Esq.

For two bunches of Black Grapes.—1st, Rev. Mr. Coventry; 2nd, Mr. W. H. F. Hayhurst.

Rev. Mr. Coventry was 1st for two bunches of white Grapes, Foster's Seedling. There were other classes for fruits.

VEGETABLES.

Messrs. Sutton & Sons and Messrs. Webb & Sons offered prizes for collections of vegetables, and those two champions, Mr. Waite and Mr. Wilkins, out-distanced all other exhibitors. Mr. Waite was 1st for Messrs. Webb's prizes, and 2nd for Messrs. Sutton's; and this position was reversed for Messrs. Sutton's prizes.

MISCELLANEOUS.

Two fair lots of twenty-four herbaceous blooms were staged in the open class, 1st, Messrs. Townsend; 2nd, Mr. G. Newell, Edgbaston, Birmingham.

In the three open classes for bouquets, Messrs. Perkins & Sons, had no competitors, as the excellent exhibits from this firm have a deterrent influence on many others.

There was a class for twenty-four varieties of hardy flowers most suitable for park decoration, given by the Chairman of the Parks Committee, but it brought out only one exhibit from Messrs. Townsend & Son, and that not of any particular merit, being chiefly annuals, some not of a very decorative character.

Mr. Paul Lutz, of Wolverhampton, gained a Gold Medal as a 1st prize for "the finest display of Pansies and Violas;" and three large exhibits were staged from Scotland.

Honorary exhibits were numerous, and several Medals were awarded, notably to Messrs. White & Son, Worcester; Messrs. Hewitt & Co., Birmingham; Messrs. Thomson & Co., Birmingham; Messrs. Birkenhead, Sale; Messrs. Edwards & Sons, Sherwood, Nottingham; Mr. W. P. Bason, Wolverhampton, for excellent Mushroom-spawn; Messrs. Richard Smith & Co., Worcester; Messrs. Wright & Holmes, for greenhouses; Messrs. Bayliss & Inman, for rustic-work, and other exhibits of garden requirements.

The arrangements were good, thanks to the energy of Messrs. Green & Son and Mr. Powell, who had the bulk of the work to do.

CHERTSEY, WALTON, AND WEYBRIDGE HORTICULTURAL.

JULY 13.—This exhibition was held in the pleasant grounds of Oatlands Lodge, Weybridge, on the above date. Groups of plants arranged for effect were a distinct feature, in the larger class five competing, Mr. G. J. Cook, gr. to J. S. Sassoon, Esq., Ashley Park, Walton, won with a creditable arrangement. Mr. Hopkins, gr. to Mrs. Wodderspoon, Walton-on-

Thames, was the 1st prize-winner in the smaller class with a charming arrangement.

Foliage plants were best shown by Mr. Cool, and also exotic Ferns. Mr. Millican won for hardy Ferns. In the class for a specimen flowering-plant, Mr. Hopkins staged a well-flowered *Bougainvillea glabra*, and won premier award.

Tuberous Begonias were very well shown, Mr. W. Steadman, gr. to Miss Verity, Moorcroft, Weybridge, winning easily.

Mr. T. Cheesman, gr. to W. Riddall, Esq., Ryden Road, Walton, was 1st for Fuschias.

Mr. E. Gardner, gr. to R. H. Turner, Esq., Ryden Road, Walton, won for zonal Pelargoniums, with freely-flowered specimens.

Gloxinias were well represented by the six plants that won premier award for Mr. Steadman.

Cut flowers made a bright display. Mr. Will Taylor, Osborn Nursery, Hampton, was 1st for twenty-four distinct varieties of Roses. Mr. Osman, Ottershaw Park, won for twelve trusses miscellaneous flowers. Mr. Pagram, gr. to A. Hobhouse, Esq., Byfleet Road, won for twelve varieties herbaceous flowers.

Fruit made an interesting display. Mr. Swann, gr. to Murray Smith, Esq., Brackley Lodge, Weybridge, secured 1st place for six dishes, for two bunches of black Grapes, and for two of white Grapes. In all classes the exhibits were good. This exhibitor also took premier award for a dish of Peaches, with extra fine Princess of Wales. Mr. Carpenter staged Lord Napier Nectarine in the single dish class.

Mr. Prothero, gr. to Miss Green, Oakwood, Weybridge, had the best Melon in a spirited competition. To Mr. Swann, for his two bunches of black Grapes, was awarded the Silver Medal given by the proprietors of the *Gardeners' Magazine*, for the exhibit which displays the most cultural skill.

Messrs. J. Laing & Sons were very highly commended for a group of miscellaneous plants, not for competition; as also was Mr. G. Jackman, Woking, for eight dozen Rose blooms.

NATIONAL ROSE SOCIETY'S SHOW AT WORKSOP.

JULY 13.—The provincial show of the National Rose Society was held on the above date, in connection with the annual exhibition of the Worksop Rose and Horticultural Society. Great interest was, as usual, taken in the nurserymen's competition for the Jubilee Challenge Trophy, for which there were five entries. Messrs. Harkness & Sons, of Bedale, proved successful, and they also secured a Silver Medal. This makes the fifth time the firm has won the trophy. Their collection was a grand one, and conspicuous in it was a Horace Vernet and a Reynolds Hole. There was also an exceedingly well-grown specimen of Pierre Notting. Ireland provided the 2nd prize-winner in Messrs. Alex. Dickson & Sons, Newtownards, co. Down, and their specimens were rather more varied in colour than the victors. Prominent amongst them were Madame Hoste and Comtesse Nadailac.

In the seventy-two distinct, single trusses, Messrs. Harkness again took 1st honours, their best blooms being a Dr. Sewell, Duke of Connaught, and Suzanne-Marie Rodocanachi.

Messrs. Dickson & Sons were to the fore with thirty-six distinct, of three trusses each; and Mr. H. Merryweather of Southwell came out 1st in the thirty-six distinct single trusses; he had a fine sample of the Duc de Wellington. Messrs. Mack & Sons were successful in the eighteen distinct, with a splendid case, which included flowers of Victor Hugo, Rodocanachi, and Duc de Rohan, of very fine quality. Dr. S. Budd of Bath showed, among others, a fine Merveille de Lyon.

Mr. H. V. Machen of Gateford, Worksop, who was expected to make a grand show, had his chances somewhat spoiled by the heavy rain of the previous day, but he staged a remarkably nice lot.

The amateurs' trophy also went to Bedale, being secured for the first time by Mr. A. Whitton. There was a Comte de Raimbaud, which was perfect, and its equal has rarely been seen this season; and the Victor Hugo and Catherine Mermet were both lovely flowers. Mr. Hutchinson of Kirmoreside took 2nd honours with a meritorious collection.

The remaining classes were only open to amateurs. The thirty-six, distinct, single trusses, was a very strong class. The Rev. S. H. Pemberton was 1st, and he also was awarded a piece of plate, given by the Duke of Portland; and a Silver Medal. The

latter was won by a Mrs. John Laing, which was undoubtedly the best Rose in the show.

There were some choice flowers in classes 6 and 7, and Mr. Machin, Mr. Hutchinson, Mr. Whitton, and Mr. W. Boyce of Derby, gained the coveted honours.

In Class 9, Miss Mellish, of Hodssock Priory, Worksop, had to take 2nd place to Mr. Grahame, of Croydon. Mr. Boyes was to the fore in another class, and Miss Mellish had again to take 2nd place. The competition was very close, however. Miss Jebb of Firbeck Hall, succeeded in capturing a winning ticket with a charming case. The same lady took premier honours for six Teas or Noisettes; Mr. A. Stewart, of Carlton, being placed 2nd; and Miss Mellish, 3rd. In the Tea and Noisette division some grand blooms were shown. Mr. Merryweather, Mr. J. Mount of Canterbury, Messrs. Dickson & Son, Dr. Budd, and Mr. Machen were the principal winners, and competition was keen in all the classes. Staged in this tent were the Roses of the exhibitors to the local show, and they proved a most meritorious lot; some of them were worthy of a place amongst the National exhibits. Messrs. Dickson, Brown, & Tait, of Manchester, had a stand of lovely blooms, not for competition.

With respect to the other part of the show, no fault could be found. There were monster vegetables, finely-grown plants, and a fine collection of fruits. In the latter division, the Duke of Portland, the Duke of Newcastle, Mr. F. J. S. Foljambe, and Mr. Frank Huntsman were amongst the competitors, and, as might have been expected, the display was a finer one than has been seen in the district for some time. In the large groups arranged for effect, Mr. A. Webb, Kelham, Newark, came 1st, with a group full of colour; and the Duke of Portland was 2nd. Messrs. Fisher, Son & Sibray upheld their reputation by a charming display of plants, including some choice Orchids. Their exhibits were not for competition, and the same remark applies to the flowers and Tomatos sent by the Shireoaks Market Garden Company. *Sheffield Telegraph.*

PEOPLE'S PALACE, MILE END.

JULY 13.—It seemed quite appropriate to the general purposes of this institution that a flower show should be held in connection with it. The Governors are desirous of encouraging the growth of plants and flowers in the houses and gardens of the residents in this crowded district, and for this purpose they issued a schedule of prizes for plants, window boxes, Fern cases, cut flowers, Tomatos, and Cucumbers; two of the classes being devoted to exhibits by children. It was required that exhibitors be *bona fide* residents in the Tower Hamlets and Hackney divisions of the London School Board, and a very encouraging response for a first attempt resulted; small collections of plants, of a very credible character were shown, which must have been grown with great care, being so bright, clean, and on the whole well flowered. Among the subjects were Gloxinias, tuberous and Rex Begonias, India-rubber plants, Tomatos in pots, Coleus, Ferns, Plumbago capensis, Fuschias, zonal Pelargoniums, Asters, Lilies, &c. *Bona fide* window plants consisted largely of Fuschias, some of them trained to large fan-shaped trellises, very finely grown and bloomed; the best plant in the show was one of these Fuschias, covering several feet each way, grown by George Haydon, a labourer, living in the Longfellow Road, Mile End, and which well deserved one of the Medals of the Royal Horticultural Society; for besides being covered with clean and healthy foliage, it had some thirty racemes of bloom. Some capital Ivies were shown in this class; and one poor woman, looking as if she was feeling the pinch of poverty, brought in a mass of Sedum acre growing in an old pie-dish, upon which plant she seemed to set great store. Many of the plants were awarded extra prizes, so generally good were they.

For once the large hall of the People's Palace held a most attractive flower show, for many groups of plants and cut flowers were sent for exhibition by ladies and gentlemen interested in the movement. In the centre of the hall was a fine collection of plants sent by Mr. Thomas from Frogmore by command of Her Majesty; and the Duke of Norfolk, Duke of Fife, Duchess of Wellington, Lady Rothschild, Lady Hothfield, Lady Henry Somerset, and many others, contributed, these exhibits being tastefully arranged round the sides of the spacious hall, and on tables down the centre, formed an exhibition of an extensive character. Among the trade contributors were Messrs. Cutbush & Son,

J. Cheal & Sons, Mrs. Holmes, Hackney; J. R. Chard, who delighted the East-enders with one of his charming arcadian designs for the table; Mr. Charles Turner, and others.

The Exhibition was opened at mid-day by Lady Rothschild, who expressed the hope that the proposal of the Governors to form a Horticultural Society in connection with the People's Palace would prove highly successful. The exhibition remained open from Thursday the 13th, to Saturday the 15th, and was largely attended.

TREES AND SHRUBS.

INDIGOFERA GERARDIANA.

LIKE pretty nearly everything else out-of-doors this season, *Indigofera Gerardiana* is flowering some weeks before its normal time. Whilst in ordinary years we look for the flowers in the months of July and August, they were this year appearing in the third week of June. This is a plant of singularly graceful growth; the shoots (which in the open ground are only of annual duration, being killed back to the stool each winter), are slender, 2 to 3 feet high, and clothed with delicately green, pinnate leaves. The flowers, which are papilionaceous, are arranged on erect spikes 6 inches long, and are of a pale rosy-purple; the plant continues in flower for some weeks. Although not much grown in private gardens, it is well worthy of extensive cultivation, being suitable for a front place in a border of shrubs, or even in a bed by itself; as a wall shrub also it is effective. It does not seed as a rule in this country, and is best propagated by cuttings. Lateral shoots should be taken in August with a slight heel of the older wood, and placed in a close shaded frame. If given a light sandy soil, they give no trouble to root, but there is sometimes a little difficulty in getting them sufficiently established and firm of wood to pass the winter. This year, however, will be exceptionally favourable to increase the stock, and cuttings will be obtainable some weeks in advance of the usual time. The early flowering may also allow for the proper ripening of the seed. The species is a native of Northern India. *W. J. B.*

MARKETS.

COVENT GARDEN, July 20.

HEAVY supplies this week, but soft fruit nearly finished. Hot-house goods quiet, with prices falling. *James Webber, Wholesale Apple Market.*

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Arum, per doz. bl.	2	0-4	Pansy, per doz. bun.	1	0-2
Aster (French), bun.	1	6-2	Orchids:—		
Bouvardias, per doz.	0	6-1	Cattleya, 12 blms.	6	0-12
Calceolaria, doz. bun.	4	0-6	Odontoglossum		
Carnation, doz. bun.	4	0-9	crispum, 12 blms.	2	0-6
dozen blooms	1	0-3	Pelargoniums, scar-		
Cornflower, 12 bun.	1	0-3	— let, p. 12 bun.	3	0-6
Eucharis, per dozen	3	0-4	— 12 sprays		0 6-0 9
Gardenia, per dozen	1	0-3	Poppy, doz. bunches	1	6-4
Heliotrope, per doz.			Primula, dble. p. bun.	0	6-1
sprays	0	3 0 6	Pyrethrum, 12 bun.	2	0-4
Lilium lancifolium,			Roses, doz. bunches	3	0-8
p. doz. blooms	2	0-4	— Tea, per dozen	0	6-2
— Harrisii, p. doz.	2	0-5	— coloured, dozen	2	0-4
Maiden Hair Fern,			— yellow (Maré-		
12 bunches	4	0-6	chals), per doz.	1	6-6
Marguerite, p. doz.			— red, per dozen	1	0-1 6
bunches	1	6-3	Stocks, per bunch	0	4-0 6
Mignonette, 12 bun.	2	0-4	Sweet Sultan, 12 bun.	2	0-4
Myosotis, 12 bunches	2	0-3	Tuberose, 12 blms.	0	4-0 6
ORCHID-BLOOM in variety.					

ORCHID-BLOOM IN VARIETY.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Adiantum, per doz.	6 0-12 0	Heliotrope, per doz.	4 0 6 0
Aspidistra, per doz.	15 0-30 0	Hydrangea, per doz.	12 0-24 0
— specimen, each	7 6-21 0	Ivy Geranium, doz.	4 0-6 0
Balsams, per doz.	4 0-6 0	Lilium Harrisii	... 18 0-30 0
Companula, per doz.	6 0-12 0	— lancefolium, d. 12	0 18 0
Calceolaria, per doz.	4 0-6 0	Lobelia, per doz.	... 3 0-6 0
Cockscombs, per doz.	4 0-6 0	Marguerite, per doz.	6 0-12 0
Crassula, per doz.	... 18 0-42 0	Mignonette, per doz.	
Cyperus, per dozen	4 0-10 0	— pots	4 0-6 0
Dracena, each	... 1 0-5 0	Musk, per doz.	... 2 0-4 0
Ferns, various, doz.	4 0-9 0	Nasturtium, p. doz.	4 0-6 0
Ferns, small, per		Palms, various, each	2 0-10 0
100	... 4 0-8 0	— specimens, each 10	8 8 0
Ficus elastica, each	1 6-7 6	Pelargonium, p. doz.	6 0-12 0
Foliage plants, doz.	12 0-42 0	— scarlet, p. doz.	8 0-6 0
Fuchsia, per doz.	... 6 0-9 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, 3-sieve	1 0-3 6	Grapes, per lb.	0 9-1 6
Cherries, half-sieve, 5 0-12 0		Lemons, per case	12 0-20 0
Currants, black, 4 0-...		Peaches, per doz.	1 0-6 0
— red, do. 1 0-...		Pine-apples, St. Michael	2 0-5 0
Cobs, per 100 lb.	...	Oranges, per case	20 0-30 0
Gooseberries, half-sieve, 1 6-2 0			

POTATOS.

Home-grown supplies have come in more freely, and last week's prices are fully maintained. Jersey and French prices declining. *J. B. Thomas.*

SEEDS.

LONDON: July 19.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that higher prices for Trifolium are quoted from France; the English demand for this article now increases every week. America cables advancing rates for Clover seed. Fabulously high figures are realised this season for Trefoil. The few choice spring Tares that are still obtainable meet a ready sale. New home-grown winter Vetches are now being marketed. This year's sowing Rye shows good quality, and can be bought on reasonable terms. There is a good consumptive inquiry for French Italian Rye-grass. In Rape seed the tendency is downwards. Mustard keeps firm. The Canary seed trade presents no new feature. Hemp seed is steady.

FRUITS AND VEGETABLES.

BOROUGH: July 18.—Quotations:—Peas, 2s. to 3s. 6d. per bushel; Cabbages, 4s. to 6s. per tally; Parsley, 2s. 6d. per dozen bunches; Onions, Egyptian, 4s. to 5s. per cwt.; Horseradish, 1s. 6d. to 2s. 6d. per bundle; Cherries, 4s. to 7s.; Gooseberries, 1s. 8d. to 3s. per half-sieve.

SPITALFIELDS: July 18.—Quotations:—Cabbages, 4s. to 6s. per tally; Peas, 2s. to 3s. 6d. per bushel; Parsley, 2s. 6d. per dozen bunches; Onions, Egyptian, 4s. to 5s.; Turnips, 3s. to 4s. 6d. per cwt.; Horseradish, 1s. 6d. to 2s. 6d. per bundle; Cherries, 4s. to 7s.; Gooseberries, 1s. 8d. to 3s. per half-sieve.

STRATFORD: July 19.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned quotations:—Cabbages, 2s. to 4s. per tally; Greens, 9d. to 1s. 3d. per bag; Cauliflowers, 6d. to 9d. per dozen; 3s. to 5s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; Carrots, household, 1s. 6d. to 2s. 6d.; Mangels, 3s. 6d. to 7s. 6d. per case; do. Valencis, 6s. to 6s. 6d. per case; Apples, English, 2s. to 8s. per bushel; Cherries, 4s. to 8s. per half-sieve; Red Currants, 2s. to 2s. 6d. per half-sieve; Cucumbers, 1s. 6d. to 3s. per dozen.

FARRINGTON: July 20.—Quotations:—Cucumbers, 2s. 6d. per dozen; Tomatoes, 6d. per lb.; Melons, 6s. to 8s. per case; Plums, 2s. 6d. to 3s. per basket; Red Currants, 3s. to 4s. per half-case; William Pearce, 2s. per case; Peas, 2s. to 3s. 6d. per bushel; Parsley, 2s. 6d. per dozen bunches; Onions, Egyptian, 4s. to 5s. per cwt.; Cabbages, 4s. to 6s. per tally; Horseradish, 1s. 6d. to 2s. per bundle; Turnips, 3s. to 4s. per cwt.

POTATOS.

BOROUGH: July 18.—Quotations:—New: 5s. to 8s. per cwt.

SPITALFIELDS: July 18.—Quotations:—New: 5s. to 8s. per cwt.

FARRINGTON: June 20.—Quotations: New, 115s. to 148s. per ton; no quotation for old.

STRATFORD: July 19.—Quotations:—Old, 50s. to 70s. per ton; new, 100s. to 140s. do.; foreign, new, 70s. to 110s. do.

LONDON AVERAGES: July 19.—New: English, 5s. to 7s.; foreign, do., 5s. to 8s. per cwt.; old, nominal.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending July 15, and for the corresponding period in last year:—1893: Wheat, 26s. 3d.; Barley, 22s. 3d.; Oats, 22s. 3d. 1892: Wheat, 29s. 1d.; Barley, 22s. 4d.; Oats, 21s. 5d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 135s. to 160s.; do., inferior, 105s. to 120s.; hay, best, 135s. to 160s.; do., inferior, 105s. to 120s.; and straw, 38s. to 50s. per load.

TRADE NOTICE.

MR. G. H. SMITH, for the past three years Head Gardener at Paul Cray Hill, has taken Nevill Court Gardens for market purposes. The establishment will in future be called Nevill Park Nursery, Tunbridge Wells.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (−) the Mean for the week ending July 15.	ACCUMULATED.				No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		Ins			
0	2 +	103	0	+ 419	− 57	5	112	19.2	11	26
1	0 aver	102	0	+ 286	− 21	2	93	12.1	13	32
2	1 −	109	0	+ 282	− 62	1	80	10.2	18	36
3	0 aver	126	0	+ 365	− 37	3	78	8.8	27	44
4	0 aver	121	0	+ 492	− 47	6	79	9.8	21	41
5	0 aver	134	0	+ 420	− 43	8	75	9.8	32	46
6	1 +	115	0	+ 397	− 63	4	93	16.7	25	37
7	1 +	123	0	+ 506	− 91	5	82	12.5	19	37
8	1 +	126	0	+ 542	− 70	10	77	14.5	33	49
9	1 +	113	0	+ 423	− 104	5	98	14.2	24	31
10	0 aver	129	0	+ 459	− 100	4	88	15.1	22	35
*	1 +	139	0	+ 614	− 52	3	81	11.3	49	56

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

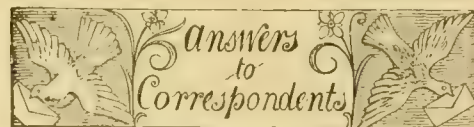
The following summary record of the weather for the week ending July 15, is furnished from the Meteorological Office:—

"The weather was exceedingly changeable and showery, with thunderstorms in nearly all parts of the kingdom, and with heavy falls of rain locally.

"The temperature was slightly above the mean in nearly all the grazing districts, as well as in 'Scotland, N.,' in other localities it was either equal to or a trifle below the normal. The highest readings were registered on the 9th, 10th, or 11th, when the thermometer exceeded 70° in most districts, and reached 77° in 'England, E.' The lowest readings occurred as a rule on the 15th, when the thermometer fell below 50° in all districts, excepting the Channel Islands, where the lowest reading was 56°. In the 'Midland Counties and England, S.W.,' the absolute minimum was as low as 44°.

"The rainfall amounted to less than the average in Scotland and the north-east of England, but in all other districts a considerable excess was shown. In the 'Midland Counties' the total fall was twice as much, and in 'England, S. and S.W.,' more than twice as much as the normal, the excess in the two last mentioned districts being due to a heavy fall, which occurred on the 15th or early on the 16th. In Eastbourne and its immediate vicinity, the amount of rain which fell between 7 A.M. and 1 P.M. on the 16th, varied between 2 and 3 inches; the heaviest fall in a short period being at the rate of about 2 inches per hour.

"The bright sunshine was less than the average in all districts, excepting the Channel Islands; the deficiencies being in many localities very considerable. The percentage of the possible duration averaged from 11 in 'Scotland, N.,' and 13 in 'Scotland, E.,' to 33 in 'England, S.,' 33 in 'England, S.W.,' and to as much as 49 in the 'Channel Islands.'"



APPLES AND BORDEAUX MIXTURE: *Munches.* It may be used now, at fortnightly intervals, on all but early varieties. A consumer would have to eat several bushels of fruit at a time, and these with the rind on them, before he would show the least symptom of poisoning! It is quite safe, if the most ordinary caution be employed.

APPLE FROM THE CAPE: *Professor McO.* So far as we are able to judge, it is Warner's King, a little glorified as regards colour.

CORRECTION.—National Carnation Society's Show, Chiswick, Mr. A. Greenfield, Sutton, Surrey, desires to say that it was he who was 1st for six flake Carnations, and not Mr. J. Douglas, as stated in our report.

CREEPERS FOR A FENCE SURROUNDING A MUCH EXPOSED LAKE IN GARDEN: *Desideratum.* To mask the fence only, plant *Periploca graeca*, *Bignonia radicans*, *B. capreolata*, *Clematis Jackmani* in variety, *Lonicera Caprifolium* (Honey-suckle), *L. sempervirens*, *L. Periclymenum* in variety, *Jasminum officinale*, *Lathyrus grandiflorus*, *Rosa arvensis*, *R. scandens* (Ayrshire), *R. Boursaulti*, *R. moschata*, *R. Félicité-Perpétue*, *Vitis Labrusca*, *V. rotundifolia*, and *Wistaria sinensis*. To hide the fence in greenery, plant any of the large-leaved Ivies, as the Irish, Algerian, Regner's, &c.; *Aristolochia Siphio*, this is bare in winter; *Cotoneaster microphylla*, *Lonicera flexuosa*, and *Eaonymus japonicus* in variety, these last being trained loosely to the ironwork. The plants cannot be planted in the gravel walk, but a good border, so arranged that it will be well drained of the water that falls on it, must be made, and at a rather higher level than the water in the lake. The plants will not succeed in a water-logged soil. Having made the border, and allowed the mould to consolidate, there would be no harm in covering it with gravel, &c., and forming a walk, but a space of 1½ to 2 feet in width should be reserved for the plants, at least for a few years.

CUCUMBER DISEASE: *T. W. and T. Kibble.* Next week.

CUCUMBERS: *A. H.* On the Cucumber leaves I find nothing. In the stems and roots no fungus mycelium. There is no trace of the symptoms of bacterial disease. About the roots are a number of minute hyaline nematode worms. At least, they seem to be so to me, but there are none of the galls, as far as I can see, which are formed on roots by irritation. I do not detect any galls on the root-fibrils. *M. C. Cooke.*

ELLAM'S EARLY CABBAGE: *W. Robinson.* Sow in the first week of August and a fortnight later, for South and Mid-England, and in the North and Scotland, a week sooner.

ERANTHEMUMS WITH FUNGUS: *Ignorant.* Please send more specimens.

GARDENING IN CANADA: *G. S.* With your knowledge of the business, you need have no hesitation in going to Canada, where, if the climate is different to that of this country, it is very healthy, and the prospects for a young, steady, and healthy man are very good. With regard to several matters about which you ought to know something before you start, and which we cannot touch upon in this column, you had better make enquiries at the Emigrants' Information Office, 31, Broadway, Westminster, S.W. One of the best Canadian horticultural journals is the *Canadian Horticulturist*, published at Ottawa.

MARKET PRICES OF FRUIT AND VEGETABLES AT NEW YORK: *J. D. S. D.* None of the American periodicals that reach us contain a list of market prices of fruit and vegetables at New York.

MUMMY PEA: *M. C.* A well-known fasciated form of the common Pea. The mummy story is all nonsense.

NAMES OF PLANTS: *W. F.* *Kolreuteria paniculata*. — *Bruce.* 1, *Cupressus* (*Retinospora*) *obtusata*, golden variegation; 2, *Tsuga Pattoniana*; 3, *Cupressus* (*Retinospora*) *lycopodioides*; 4, *Abies nobilis*; 5, *Ilex microphylla*; 6, *Calystegia*

pubescens.—*T. C.* 1, *Trachelium cœruleum*; 2, *Lysimachia thyrsoiflora*.—*Fern.* *a*, *Nephrodium montanum* (*Lastrea*); *b*, *Polypodium Phegopteris*; *c*, *Aspidium* (*Polystichum*) *aculeatum*; *d*, *Aspidium rigidum* (*Lastrea rigida*); *e*, *Athyrium filix-fœmina*; *f*, *Thuya dolabrata*.—*E. M. C.*, *Kingstown*, *Dendrobium Pierardi* and *D. ciliatum* (the lesser).—*G. G.*, *South Wales*. 1, *Pyrus Aria*; 2, *Bignonia Chereis*; 3, *Campanula pusilla alba*; 4, *Cypripedium carolinianum*; 5, *Cypripedium Parishii*; 6, *Cotoneaster Fontainesii*, probably.—*H. E.* *Cattleya Forbesii*.—*Clover Seed*. 1, *Scabiosa arvensis*; 2, *Ononis arvensis*.—*E. C. L.* 1, *Alnus glutinosa laciniata*; 2, a variety of the same species. We believe it to be the form known as *imperialis*, but the specimen is small.—*W. M. J.* 1, *Juncus obtusiflorus*; 2, *Carex ampullacea*; 3, *C. paniculata*; 4, *Polemonium cœruleum*; 5, *Antennaria margaritacea*; 6, *Kerria japonica*.—*J. Cooper*, *Prunus myrobolana*.—*Henderson & Son*, *Meililotus officinalis*, not native of your district.

NECTARINES: Knowle Green. The fruits have been attacked by the Peach mildew—*Glauosporium læticolor*—now dead, which caused the skin to lose its power of expanding as the fruit grew in size, hence the skin cracked, exposing the pulp, thereby inducing decay. We do not think you can do anything this year, but you could use the Bordeaux Mixture next year.

NITRATE OF SODA: J. A. We do not know when this substance was first used in agriculture.

NOTICE TO QUIT SERVICE: W. S. In the absence of an agreement, a month's notice on either side is the legal time, unless the servant should have been guilty of gross misconduct.

ROSES: J. B. Nothing definite is known as to the Roses of ancient Greece, and nothing whatever of Roses before that period.

THE SEASONS AT KIMBERLEY, SOUTH AFRICA: Kimberley. The cool, or winter season, extends over May, June, July, and August. In June the mean temperature is about 52.8°, Fahr., and from that month onwards to January there is a gradual rise to 70.5°, Fahr., the warmest month.

TOMATO FUNGUS: W. C. & Sons, G. P., and others. The various fungi affecting the Tomato are very prevalent this season. Bordeaux Mixture, properly used, would have kept them in check.

TRAPA BICOENIS: W. H. Place the seeds in water at a temperature of 65°. We do not know of any "bulbous" plant called the "Umbrella plant."

VINE DISEASE: J. S. Yes; it is the same as described by Mr. Blackmore. At present little is known about it.

BOOKS RECEIVED.—*Handbook of the Flora of New South Wales*, C. Moore.—*A Companion for the Queensland Student of Plant Life*, F. M. Bailey.

COMMUNICATIONS RECEIVED.—Watkins & Simpson.—R. H.—W. T.—W. B.—R. K.—E. W.—J. E. K.—E. S. D.—J. C. C.—A. S. M.—J. H. B.—M. H.—H. R. D.—S. B.—J. D. H.—J. W.—F. W. B.—C. A. B., Antigua.—P. M. O., Cape Town.—W. G. S.—H. E. L., Sydney.—G. S. W.—L. L.—A. de la D.—T. E. H.—J. Wills.—Vigor & Co.—T. W. T.—Dr. F. K. E. T. R., Chicago.—R. S.—A. O.—D. C. P.—B. W.—W. K.—D. T. F.—H. M.—M. T.—V.—J. G. B.—W. B. H.—J. J. W.—E. C.—Extension.—J. D.—An Enquirer.—J. F. McL.—E. M. B.—J. S.—J. B.—T. B.—W. J. S.

PHOTOGRAPHS RECEIVED WITH THANKS.—F. W. B.—G. S. W. **SPECIMENS RECEIVED.**—G. Mc. K.—J. S.—T. W. W., Hants.—M. Irwin; three of your Peaches quite rotten, others next week.—J. D.

DIED.—On July 14, at Westwell Vicarage: Ashford, Kent, JANE MARGARET STEVENSON, elder daughter of the Rev. H. HONYWOOD D'OMBRAIN, vicar of the parish, aged 44.

LARGELY INCREASED CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

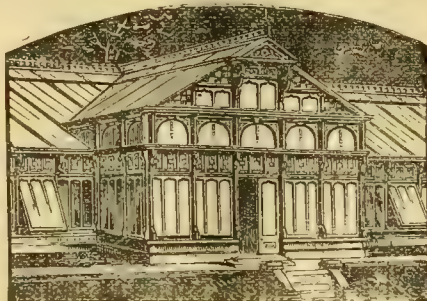
Advertisers are also reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES of GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and is preserved for reference in all the principal Libraries.

BOULTON & PAUL, NORWICH.

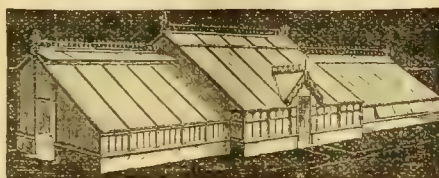
HORTICULTURAL BUILDERS.

WINTER GARDENS, CONSERVATORIES.

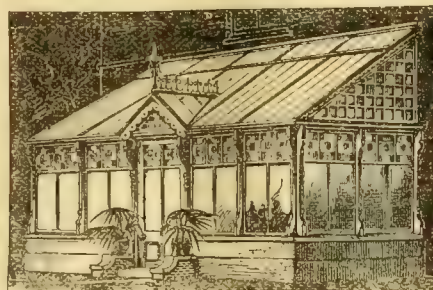
Surveys made in any part of the Country. Ladies and Gentlemen waited upon by Special Appointment.



PEACH HOUSES AND VINERIES.



GREENHOUSES IN ALL STYLES.



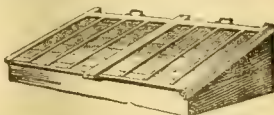
GARDEN FRAMES in great VARIETY.

The BEST and CHEAPEST in the MARKET. WRITE FOR LISTS.

No. 77.

BORDER FRAME.

6 ft. by 4 ft. £1 15 0
9 ft. by 4 ft. 2 7 6
12 ft. by 4 ft. 3 0 0



Carriage Paid on Orders of 40s. value.

CATALOGUES of all our Manufactures, including HORTICULTURAL BUILDINGS, FRAMES, BOILERS, IRON BUILDINGS, STABLING, KENNELS, POULTRY, and GARDEN APPLIANCES, Free.

BOULTON & PAUL.

GLASS! CHEAP GLASS!

In Stock Sizes.
15-oz., per 100 ft., 8s. 6d. { 12x10, 18x12, 18x14, 24x14
21-oz., " 11s. 9d. { 14x12, 20x12, 18x16, 24x16
" " " { 16x12, 16x14, 20x16, 24x18, &c.
1 1/2 x 3 Prepared Sash Bar at 5s. per 100 feet.
Paints and Varnishes at Low Prices. Flooring, 5/9 per square; Matching, 4/9; 2x4, at 4d. per foot run; 2x7 at 1d.
Horticultural Work of all descriptions, Ironmongery, &c.
CATALOGUES Free. THE CHEAP WOOD COMPANY,
72, BISHOPSGATE STREET WITHIN, LONDON, E.C.

CARSON'S PAINT

Patronised by 20,000 of the Nobility, Gentry, and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations. Liquid Non-Poisonous Paint for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

GROVE WORKS, LOMBARD ROAD, BATTERSEA, LONDON, S.W.; and BACHELOR'S WALK, DUBLIN.



21oz. and 15oz. FOREIGN, of above sizes, in boxes of 100 feet & 200 feet super ENGLISH Glass, cut to buyers' sizes, at lowest prices delivered free & sound in the country, in quantity.

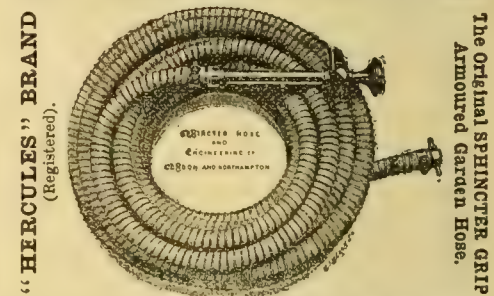
LEADED LIGHTS FOR CONSERVATORIES & PRIVATE HOUSES.

GEORGE FARMILOE & SONS

LEAD, GLASS, OIL, and COLOUR MERCHANTS, 74 & 81 JOHN STREET, WEST SMITHFIELD, LONDON, E.C.

Stock Lists and prices on application. Please quote Chronicle.

1893.—GARDEN HOSE—1893.



Over 10,000 Customers. Hundreds of unsolicited Testimonials. Ten Recent and Highest Awards at Principal Exhibitions. CAUTION.—No Medal or Exhibition Award has ever been secured by any Firm except this Company for Sphinxer Grip Hose, exclusively and distinctively. Beware of Worthless Imitations and Foreign Importations, of which there are many.

Orders executed same day as received. Price LISTS post-free.

SPHINXER HOSE & ENGINEERING CO., LIMITED.

(Sole Manufacturers). 9, MOORFIELDS, LONDON, E.C.

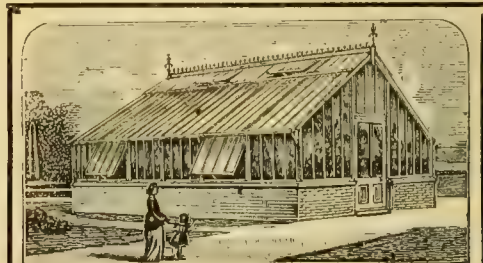
THE FRUIT GARDEN OF THE UNIVERSE

—THE AUSTRALIAN IRRIGATION COLONIES (Chaffey brothers), established and regulated by Government, OFFER an enjoyable Life and OCCUPATION, a sunny and salubrious Climate, and most highly remunerative returns to Cultivators with small or large Capital. Pamphlet free.

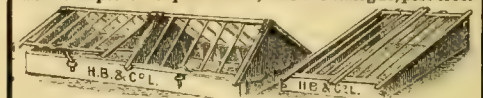
CHAFFEY BROTHERS, Limited, 35, Queen Victoria Street, London, E.C. J. E. M. Vincent, Chief Commissioner.

MERRYWEATHER & SONS

have a good Selection of Hand-Worked Fire Engines (new and second-hand), from 4 to 30 men-power—suitable for all kinds of Watering Fruit Gardens, Plantations, &c. Write or call, 63, Long Acre, and Greenwich, London, S.E.



THIS GREENHOUSE erected and heated complete, in any part of the country, best materials only, workmanship guaranteed, 25 ft. by 12 ft., £50; 30 ft. by 15 ft., £70. Brick-work excepted. For particulars, see our Catalogue, post-free.



Superior Portable Frames, large stock ready for immediate use, well made, painted four coats, glazed with 21-oz. glass, carriage paid.—1-light frame, 4 x 6, 36s. 6d.; 2-light frame, 6 x 8, 58s.; 3-light frame, 12 x 6, 85s. 6d. Span-roof Frames, 10 x 5, £3 15s.; 12 x 6, £5; 16 x 6, £7 10s. Can send off same day as ordered.

HARDY BRUIN & CO., Street, LEICESTER

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS.—The Registered Address for Foreign and Inland Telegrams is "Gardchron, London."

ADVERTISEMENTS.

Scale of Charges for Advertising.

Head Line charged as two.

4 Lines ..	£0 3 0	15 Lines ..	£0 8 6
5 " ..	0 3 6	16 " ..	0 9 0
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8 " ..	0 5 0	19 " ..	0 10 6
9 " ..	0 5 6	20 " ..	0 11 0
10 " ..	0 6 0	21 " ..	0 11 6
11 " ..	0 6 6	22 " ..	0 12 0
12 " ..	0 7 0	23 " ..	0 12 6
13 " ..	0 7 6	24 " ..	0 13 0
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AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20s.
If set across three Columns the lowest charge will be 30s.
Page, £8; Half Page, £4 10s.; Column, £3.

GARDENERS AND OTHERS WANTING SITUATIONS.

26 words, including name and address, 1s. 6d., and 6d. for every additional line (about nine words) or part of a line. These Advertisements must be prepaid. This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

Births, Deaths, and Marriages, 5s. each insertion.

NOTICE TO ADVERTISERS.—In many instances Remittances in Payment of Repeat Advertisements are received without name, address, or anything beyond the postmark on envelope by which to identify the sender; this in all cases causes a very great deal of trouble, and frequently the sender cannot be identified at all.

Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisements which they wish repeated.

POSITION.—Advertisers are specially requested to note, that under no circumstances whatever can any particular position be guaranteed for advertisements occupying less space than an entire column.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to A. G. MARTIN, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON STREET, STRAND, W.C.

SUBSCRIPTIONS.

All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d.; 3 months, 3s. 9d. All Foreign Subscriptions, including Postage, 17s. 6d. for 12 months. Post-office Orders to be made payable at the Post-office, 42, Drury Lane, W.C., to A. G. MARTIN.

Subscribers who experience any difficulty in obtaining their copies regularly, are particularly requested to communicate with the Publisher (in cases of delay in the delivery by post, the cover should be forwarded with complaint).

HILL & SMITH'S BLACK VARNISH

for Preserving Ironwork, Wood, or Stone.



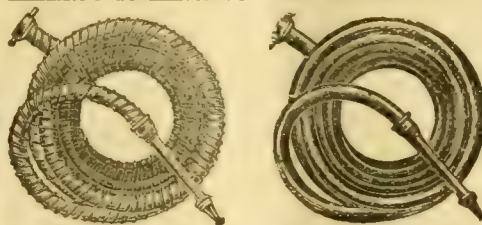
(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all the London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer. Price 1s. 6d. per gallon at the manufactory, or carriage paid to any railway station, 1s. 8d. per gal. in casks of 36, 18, or 9 gals.

CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

HILL & SMITH,

Brierley Ironworks, Dudley;
118, Queen Victoria Street, London, E.C.;
47, Dawson Street, Dublin.



POTTER'S WIRE-ARMoured HOSE.

Prices of 60-feet lengths (fitted with Brass Nozzle, Branch Pipe, Rose, and Jet).

ARMoured.	PLAIN.
The Excelsior Wire-armoured Hose secures a PERFECT grip. Hose will not crack, is made of pure rubber and canvas. Quality guaranteed. Diam. PRICES. s. d.	Unkinkable smooth surface. Hose will not crack, is made of pure rubber and canvas. Quality guaranteed. Diam. PRICES. s. d.
1-in. best quality ... 36 3	1-in. specially cheap ... 19 3
" extra stout quality 43 7	" extra stout quality 27 6
" best quality ... 45 0	" best quality ... 28 0
" extra stout quality 52 0	" extra stout quality 33 0
" best quality ... 52 0	" best quality ... 33 0
" extra stout quality 60 7	" extra stout quality 40 10

Carriage paid, and dispatched same day as ordered. Awarded 10 Gold and Silver Medals. Oldest and most reliable house in the trade. Also maker of Hose for Delivery, Steam, Fire, Suction, Liquid Manures, &c. Over 3,000,000 feet in use. Catalogues of above and all kinds of Belting, Roofing Felt, &c., post-free from—A. POTTER, Melbourne Works, Wolverhampton; and London Works, Reading. Maker to Her Majesty the Queen, and H.R.H. The Prince of Wales.

HEATING APPARATUS

BUY DIRECT FROM

THOS W. ROBINSON,
STOURBRIDGE,
DENNIS PARK IRON WORKS

THE MANUFACTURER

THE BEST OF ALL

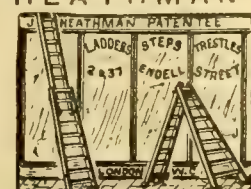
HOT WATER PIPES

EXPANSION JOINT

TELEGRAMS:—"ALPHA" BRETTELL-LANE

PRICE LISTS FREE

HEATHMAN'S LADDERS



Are a wonderful convenience; they separate, or form Steps, or extend to varying heights, just as one's needs vary.

Height (closed).	Extend to	Price. s. d.
6 ft. 0 in.	10 ft. 6 in.	16 6
7 ft. 0 in.	12 ft. 0 in.	19 6
8 ft. 0 in.	14 ft. 0 in.	22 6
9 ft. 0 in.	17 ft. 0 in.	28 6

Carriage Paid.
37, ENDELL STREET, W.C.

HORTICULTURAL SHADINGS, NETTINGS, TIFFANY, WADDINGS, COTTON WOOL for Packing Flowers, CANVAS, TWINES, &c., manufactured and supplied wholesale by JOSEPH COOKSON, 21, New Cannon Street, Manchester.

The Best Present for a Gardener.
VINES AND VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
Third Edition just out.
Price 5s., post free, 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

Belgian.
BULLETIN d'ARBORICULTURE, de FLORICULTURE, et de CULTURE MARAICHERE. A monthly horticultural work, with superb Coloured Plates and Illustrations. Published since 1865, by F. BURVENICH, F. PAYNAERT, E. RODIGAS, and H. J. VAN HULLE, Professors at the Horticultural School of the Belgian Government at Ghent. Post-paid, 10s. per annum.
H. J. VAN HULLE, Botanical Gardens, Ghent, Belgium.

TECHNICAL HORTICULTURE.

COUNTY COUNCIL LECTURES.

PAXTON'S COTTAGERS' CALENDAR OF GARDEN OPERATIONS.

Will be useful to Lecturers and Students in the above subject.

Price 3d.; post-free, 3½d.
41, WELLINGTON STREET, STRAND, W.C.

EPPS'S COCOAINE. COCOA-NIB EXTRACT.

(TEA-LIKE).

A thin beverage of full flavour, now with many beneficially taking the place of tea.

Sold in packets and tins, labelled

JAMES EPPS AND CO., Ltd.,
170, Piccadilly, and 48, Threadneedle St., London.

GARDENING APPOINTMENTS.

MR. E. F. HAZELTON, formerly Gardener at Highfield Hall, Leek, has succeeded Mr. HOBDAV, as Gardener to Lord YARBOROUGH, Brocklesby Park, Lincolnshire.

MR. J. B. MEAD, late Foreman to Mrs. W. B. Waterlow, High Trees, Red Hill, Surrey, as Gardener to M. MARCUS, Esq., at the same place.

CATALOGUES RECEIVED.

W. SHAND, New Street, Lancaster—Bulbous Flowering Roots
JAS. BACKHOUSE & SON, York—Spring Flowering Plants, Strawberries, &c.

THOS. METHVEN & SONS, 15, Princes Street, Edinburgh—Bulbs, &c.

THE VESTRY of the PARISH of LAMBETH desire to ENGAGE the services of a competent GARDENER, to undertake the Care and Maintenance of the Open Space surrounding St. John's Church, Waterloo Road. To open the Gates in the morning and lock them at night, to give whole time, and not take any other employment. Wages, 25s. per week, and age not to exceed 55 years.

Application in own hand writing, giving references and particulars of previous employment, to be delivered not later than 8 o'clock on the 27th inst., at the Lambeth Vestry Hall, Kennington Road, addressed to the General Purposes Committee.

By order, HENRY J. SMITH, Clerk to the Vestry.
Vestry Hall, Kennington Road, July 19, 1893.

WANTED at once, a trustworthy, young HEAD WORKING GARDENER. Must have practical experience in Growing Grapes, Tomatoes, Cucumbers, Cut Flowers, and Decorative Plants. Also Bedding Stuff, and must have a knowledge of Working or Management of Vegetable and Flower Gardens.—For further particulars apply, stating wages required and where employed the last two years, Belle Vue Gardens, Blackpool.

WANTED, for the Continent, a young British GARDENER, single, with a good knowledge of Hard-wooded Plants and their Culture, to take charge of a Collection. Good wages given.—Apply, with all particulars, to F. SANDER AND CO., St. Albans.

Rose Grower Wanted.

WANTED, a steady and industrious MAN, who has had experience with Roses. Must be a successful Grafter and Budder, and competent to execute orders.—Apply, stating age, where last employed, wages expected, &c., to JNO. JEFFERIES AND SON, Royal Nurseries, Cirencester.

WANTED, for a Private Establishment, a young Man, used to Growing Roses of all kinds, and one that has had experience in Nailing and Pruning Fruit Trees.—Apply, in writing, to Z. Wm. Cutbush & Son, Highgate Nurseries, London, N.

WANTED, a WORKING FOREMAN (married). Must have good practical experience in Growing for Market under Glass, early Fruits, Cut Flowers, Plants, &c.; also outside Fruits and Kitchen Garden. Must be a pushing man, thoroughly trustworthy, and able to take Management in absence of owner. Character and ability must bear strictest investigation. Full particulars as to character and ability, with references and wages expected, to SCOTLAND, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a FOREMAN not afraid of work, for July 29, in a private place. Well up in Fruit, Tomatos, Cucumbers, Chrysanthemums. Wages £1 per week. No botchy.—Apply, stating age, to G. HELMAN, The Gardens, Firle Park, Lewes, Sussex.

WANTED, INDOOR FOREMAN, for Clevedon Nursery. Must be a good Plantsman, successful Propagator, and competent Salesman. State wages required, and where last employed. Abstainer preferred.—H. ENGLISH, Clevedon Nurseries, Clevedon.

WANTED, a FOREMAN, for the Houses. Must be thoroughly practical in the growing of Vines, Peaches, Tomatos, Cucumbers, Plants, and Flowers. None but a thoroughly experienced and energetic man need apply. Wages, £1 per week, botchy, milk, and vegetables. English.—W. BUGGINS, Luttrellstown, Clonsilla, co. Dublin, Ireland.

WANTED, for the Nursery, a young MAN, as UNDER FOREMAN, in the Outside Department. Must have experience in Fruit and Shrubs.—Apply, stating age, experience, and wages expected to W. AND T. SAMSON, Kilmarnock, N.B.

WANTED, an UNDER FOREMAN.—Thoroughly experienced in Mushroom Growing in Sheds and in the Open. One who is a good Grape Thinner preferred.—D. B., Calcot Gardens, near Reading.

WANTED, AT ONCE, a steady active MAN, small Nursery. Understands Growing for Market.—A. MYERS, Sutton Lane Nursery, Shrewsbury.

WANTED, a young MAN, as GROWER of Cucumbers, Ferns, &c.; quick at Potting.—T. Vineyard Nurseries, Shooter's Hill, S.E.

WANTED, a YOUTH, with about three years' experience in general Gardening, to go out to Newfoundland.—Apply, stating age, wages, references, to Box 405, G.P.O., Manchester.

WANTED, AT ONCE, an active young MAN, for the Tomato-houses.—Wages, 18s. per week and overtime.—Apply to S. G. RUMSEY, Nurseryman, Wrotham, Kent.

WANTED, TWO young MEN, for Florist and Nursery Business. Age 18 to 20. State wages required and experience.—JAMES SHORT, The Law Nursery, Apperley Bridge, Leeds.

WANTED, under Glass, TWO energetic young MEN, used to Palms and Ferns.—Apply by letter, stating age, experience, and wages required, to F. R. KINGHORN, Sheen Nurseries, Richmond.

Bulb Department.

WANTED, an ASSISTANT.—Must be used to the Bulb Business, and a good writer. Wages to commence 15s. per week.—Apply by letter, B. 12, King Street, Covent Garden, London, W.C.

WANTED, as HEAD SHOPMAN, a thoroughly qualified MAN, to take charge of the Garden, Seed, and Bulb Department. Age not under 35. Must have had a large experience. A liberal salary will be given to an energetic, competent man.—Apply, with full particulars, salary wanted, &c., to DICKSON, BROWN and TAIT, Seed Merchants, Manchester.

WANTED, a NURSERY YARD CLERK, for Checking Orders, Consigning Packages, and to Assist in Office. Young man preferred. Wages about 20s. per week to commence. Permanent situation and progressive wages to a suitable man.—N. C. Messrs. Steel & Jones, Advertising Agents, Spring Gardens, S.W.

WANT PLACES.

TO GARDENERS AND OTHERS SEEKING SITUATIONS.

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all letters so addressed are opened by the authorities and returned to the sender.

The pressure upon our space at this season of the year is so great, we are compelled to state that advertisements received after 6 P.M. on Wednesday will, in all probability, be held over to the next week.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address—"DICKSONS, CHESTER."

F. SANDER AND CO. can recommend several highly qualified and energetic HEAD and UNDER GARDENERS, of excellent character, and proved ability; men thoroughly fitted for all the various duties of their profession. For all particulars, please apply to—
F. SANDER AND CO., St. Albans.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

GARDENER (HEAD), in a good establishment.—Age 36, married, no family; twenty-four years' experience in all branches, also Landscape Work. Well recommended.—P. ALLARD, West Malvern, Worcestershire.

GARDENER (HEAD).—A. YOUNG, Gardener to J. P. C. Musters, Esq., Annesley Park, Notts, can with confidence recommend his Foreman, John Charlton, to any Lady or Gentleman requiring a good and trustworthy man. Good Fruit and Flower Grower.

GARDENER (HEAD), or **GARDENER** and **BAILIFF**.—Thoroughly conversant with every Department of Gardening; also Farm and Estate. Twenty years' experience; highly recommended.—W. M. GEDDES, Thrumpton Hall, Derby.

GARDENER (HEAD).—Single; would suit any Lady or Gentleman requiring a thoroughly reliable man in all branches of the Profession; four and a half years' personal character, if required, and previous testimonials. Town or country. Distance no object.—B. RICHARDSON, The Cottage, Montague Road, Datchet, Bucks.

GARDENER (HEAD); age 30.—C. H. TINDAL, Esq., will be pleased to recommend G. Jackson, Claydon Park, Winslow, to anyone requiring the services of a thoroughly practical man. First-class Herbaceous Grower.

GARDENER (HEAD), where several under are employed.—Age 47, married, no family; abstainer. Life practical experience in all branches of the profession. Also Land and Stock. Over twenty years Head in large establishments. Good characters and references for over twenty years.—J. D., Mr. H. Rosier, Ram-bury, Hungerford, Berks.

GARDENER (HEAD), with two, or good **SINGLE-HANDED**.—Age 31, married; good reference.—J. GARDENER, Kingsdon, Taunton, Somerset.

GARDENER (HEAD).—Age 27; single, thorough good all-round experience in all branches. Well recommended.—A. STEWART, Potterspurty, Stony Stratford, Bucks.

GARDENER (HEAD).—Age 44, married. Long practical experience in the Management of good Establishments.—Highest references, and ten years' character from last employer.—H. COOK, Lincoln Road, Dorking.

GARDENER (HEAD); age 31, married.—£3 will be paid by Advertiser to any person enabling him to obtain a reliable situation as above. High testimonials for ability, industry, honesty, and sobriety. Four years Head in present situation.—G. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (HEAD).—Age 40; married, four children, youngest 7 years old. Thoroughly experienced in all branches of the profession; fourteen years in last situation; left through death.—G. W., 2, Station Road, Swanley Junction, Kent.

GARDENER (HEAD WORKING).—Age 27, Married when suited. Fourteen years' experience. Thoroughly up in all branches. Fruits, Flowers and Vegetables, also first-class Rose-grower and Staging for Exhibition, can be highly recommended.—HENRY WELLER, 1, Alpha Cottage, Feltham Hill Road, Ashford, Middlesex.

GARDENER (HEAD WORKING, or good SINGLE-HANDED).—Age 27, married; thirteen years' experience in Vines, Peaches, Cucumbers, and Melons, Stove and Greenhouse Plants, Flower and Kitchen Garden. Good character from present and previous employers.—C. B., 1, Leicester Villas, East Barnet Road, New Barnet, Herts.

GARDENER (HEAD WORKING).—Middle-aged, no family; understands Vines, Flowers, Fruit, and Kitchen Garden. Seven years' good character.—S. L., 18, Wynne Road, Brixton, S.W.

GARDENER (HEAD WORKING); age 29.—T. LOWTON, Gardener, Ospringe House, Faversham, strongly recommends his Foreman, F. Dare, to any Lady or Gentleman requiring a thorough practical man. Been with him three and a half years. Previous good testimonials.

GARDENER (HEAD WORKING).—Age 42, married, no family; experienced in Vines, Cucumbers, Melons, Tomatos, Stove and Greenhouse Plants, and Kitchen Garden and Pleasure Grounds. Also Flower and Vegetable Forcing. Good references.—F. PAY, Hawks Hill, Bourne End, Maidenhead, Berks.

GARDENER (HEAD WORKING).—Age 33, married, small family; twenty years' good all-round experience. Three years' character.—W. HOWARD, 14, Achilles Road, West Hampstead, N.W.

GARDENER (HEAD WORKING).—Age 30, married when suited; understands Vinery, Peach-houses, Stove and Greenhouse Plants, and a thorough Kitchen Gardener. Good testimonials.—F. C. APPELBY, Combe Down, Bath.

GARDENER (HEAD WORKING, or SINGLE-HANDED).—Middle-aged; fully competent. Eleven years' character.—HAYLETT, Highfield House, Littleport, Fly

GARDENER (HEAD WORKING, or SINGLE-HANDED).—A CLERGYMAN wishes to recommend a good Gardener as above. Married, one in family.—Rev. G. H. M. HAMILTON, Ivy Bank, Ewelme, Wallingford.

GARDENER (HEAD WORKING).—Age 32, married. Experienced in all branches, under Glass and Outside. Good character as Head, personal if desired.—W. H., 363, King Street, Hammersmith, W.

GARDENER (HEAD WORKING).—Age 29, married; fifteen years' good practical experience in all branches.—W. Sharpe, The Gardens, North Cheam House, Sutton, Surrey.

GARDENER (HEAD WORKING), where three or four are kept.—Married; fourteen years' good, all-round experience, Inside and Out, three as Head.—W. PRATT, Compton's Lea, Horsham, Sussex.

GARDENER (HEAD WORKING, or good SINGLE-HANDED).—Age 41, married; thorough practical experience both Inside and Out. Excellent references.—A. B., 2, Windsor Street, Cheltenham.

GARDENER (HEAD WORKING, or good SINGLE-HANDED).—Age 32; practical knowledge of the profession. Understands all the requirements of a Gentleman's Garden. Excellent references.—HEAD GARDENER, Park Gate Gardens, Warring, Hastings.

GARDENER (HEAD WORKING); age 35, married, one child.—Advertiser begs to offer his services to any Lady or Gentleman requiring a man as above. Very highly recommended. Thoroughly experienced.—J. SHEPPARD, 1, North Hill Avenue, Highgate, N.

GARDENER (HEAD WORKING), where four or more are kept. Fourteen years' experience in all its branches in a large establishment. Apply for particulars.—R. P., The Gardens, Blickling Hall, Aylsham, Norfolk.

GARDENER (HEAD WORKING), where two or three are kept.—Age 30, single; thoroughly experienced Inside and Out. Three years' personal character from present employer.—GARDENER, 19, School Lane, Wargrave, Berks.

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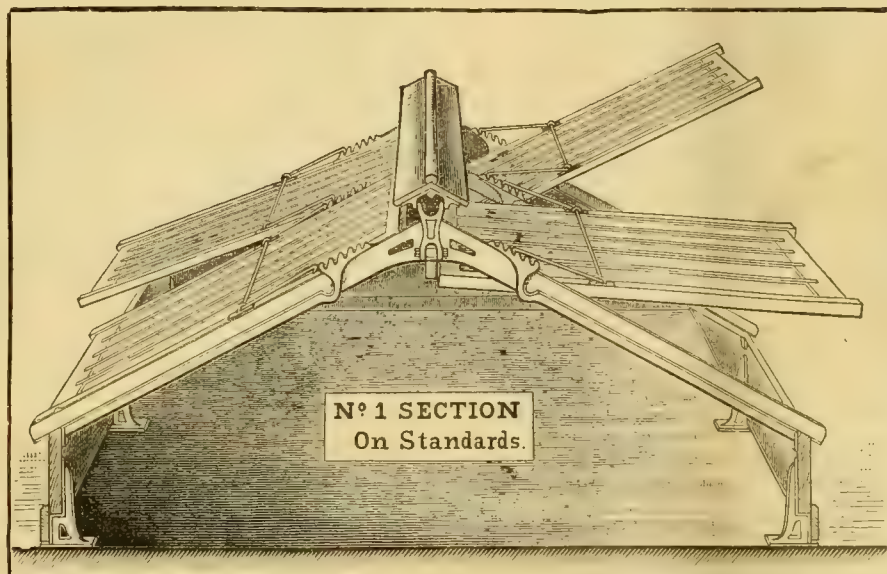
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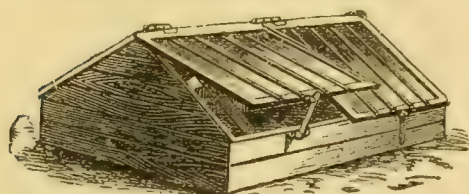
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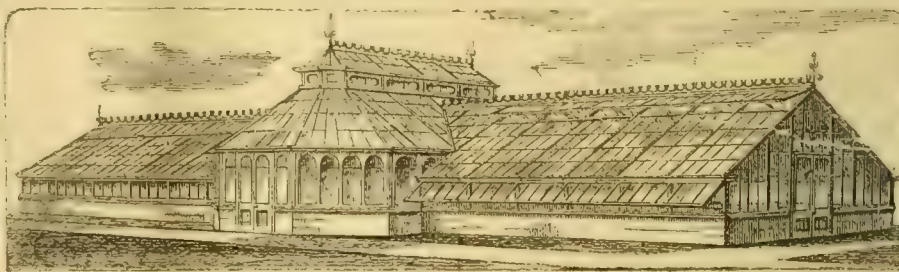
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ESTABLISHED 1841. No. 2744.

No. 344.—VOL. XIV. { THIRD
SERIES. }

SATURDAY, JULY 29, 1893.

{ Regt. as a Newspaper. { PRICE 3d.
WITH SUPPLEMENT. } POST-FREE, 34d.

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JOHNSON AND CO., The Nurseries, Hampton.

400,000 DRUMHEAD SAVOY and

Aigburth BRUSSELS SPROUTS, 5s. per 100; 5000 at 4s. 6d., 10,000 and over at 4s. per 1000, really short and stiff plants. BROCCOLI, 5s. per 1000. CELERY, Clayworth Pride, 6s. per 1000; only a few thousands. Cash with Order. (Name paper)

G. YORKE, Plantist, Retford.

WANTED, THOUSAND-HEADED CAB-

BAGES. Send price per thousand to J. CHEAL & SONS, Nurseries, Crawley.

WANTED, CALLA PENTLANDII and

CALLA ELLIOTTIANA.—State size and lowest price. F. SANDER & CO., St. Albans.

SUPERB ORCHIDS, CHEAP.—Thousands

to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

To the Trade.

HYDRANGEA PANICULATA GRANDI-

FLORA, in bloom, fine for decoration, 18s., 24s., and 30s. per dozen. Free to London for cash with order.

EDWD. SAWYER, Hyde Nursery, Lower Edmonton.

ORCHIDS.—Many rare and choice Cattleyas,

Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST.

W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N.

To the Trade.

RAPESEED and AGRICULTURAL WHITE MUSTARD.

H. AND F. SHARPE have to offer fine samples of RAPESEED and WHITE MUSTARD, suitable for Field Culture. Special quotations and samples on application.

SEED GROWING ESTABLISHMENT, WISBECH.

The Best Present for a Gardener.

VINES AND VINE CULTURE.

The most complete and exhaustive Treatise on Grapes and their Culture ever published.

Third Edition just out.

Price 5s., post free, 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

To the Trade.

IMPORTANT NOTICE.—When you are in

London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order.

E. D. SHUTLEWORTH AND CO., LTD.

Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our specialty—really good stuff grown for the Trade.

Palms.

SPECIAL OFFER of KENTIAS,

in 60's pots, grand stuff, ready for 48s.

6s. per dozen, or 40s. per 100, packing free for cash with order.

LUXTON BROS., Exotic Nurseries, Salisbury.

PRIMULAS! PRIMULAS! PRIMULAS!

25th year of Distribution.

Williams' superb Strain, 1s. 6d. per dozen; 10s. per 100.

CINERARIAS, same Price; also DOUBLE WHITE PRIMULAS, 6d. each. Package and Carriage free for Cash with Order.—JOHN STEVENS, The Nurseries, Coventry.

C. BEESON'S MANURE, composed of blood

and bone. The best Fertiliser for all purposes. Sold in tins, 1s., 2s. 6d., and 5s. 6d.; also in air-tight bags, 4 cwt., 6s.; 1 cwt., 10s. Full directions for use sent with each tin and bag. 1 cwt. and above sent carriage paid; cash with order.

C. BEESON, Bone Mills, St. Neot's, Hunts.

"KILLMRIGHT,"

For Destruction of all Insect Pests and Mildew.

THE STOTT DISTRIBUTOR CO. (Ltd.),

Barton House, Manchester.

HORTICULTURAL SHADINGS,

NETTINGS, TIFFANY, WADDINGS,

COTTON WOOL for Packing Flowers, CANVAS, TWINES,

&c., manufactured and supplied wholesale by

JOSEPH COOKSON, 21, New Cannon Street, Manchester.

J. WEEKS & CO., Horticultural Builders

to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings, Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this

Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom.

London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney.

Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey.

Sole Makers, WILLIAM THOMSON AND SONS, Limited.

Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

Thursday Next.

A COLLECTION OF ORCHIDS in FLOWER. Choice IMPORTED and ESTABLISHED DITTO.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 34, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 3, at half-past 12 o'clock precisely, a COLLECTION OF ORCHIDS in FLOWER and BUD, including some choice specimens and varieties. IMPORTED ORCHIDS, and a Collection of ESTABLISHED DITTO, in fine health. Also 10,000 PALM SEEDS, 5000 Roman HYACINTHS, 20,000 FREESIAS, a small Collection of FERNS, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

A valuable Consignment of PALMS from BELGIUM.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 3, a valuable Consignment of PALMS and other STOVE and GREENHOUSE PLANTS from Belgium, without reserve.

On view morning of Sale, and Catalogues had.

Friday, August 4, 1893.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 4, at half-past 12 o'clock, by order of Mr. F. SANDER, St. Albans, a magnificent importation, guaranteed true of—

CATTLEYA REX, J. O'BRIEN.

Mr. JAMES O'BRIEN says this grand new species is THE KING OF THE CATTLEYS.

AWARDED TWO FIRST-CLASS CERTIFICATES BY THE R.H.S.

Mr. J. O'BRIEN says:—"Taking the flower at a glance, the nearest thing I can liken it to is the Cattleya Imshoohtiana, for which Baron Schroder received a First-class Certificate at the Royal Horticultural Society, but this is different, and superior in every respect."

The *Gardeners' Chronicle*, February 28, 1891, says:—"Six flowers on one inflorescence were noted, and there is little reason to doubt that under cultivation this Orchid will develop in beauty, and take rank among the very finest of the genus." Many plants will be offered with seven to ten old flower-seeds showing on a spike.

THE FINEST IMPORTATION YET BROUGHT TO EUROPE.

CATTLEYA REX.

THE NON PLUS ULTRA OF THE GENUS.

Grand plants and magnificent masses in simply perfect condition.

The type of our importation may be imagined by the fact that we are able to show on the day of Sale gigantic masses with flower-spikes equal in size to Cattleya gigas Sanderiana, and showing as many as nine and ten flower-seeds on a spike, this being quite unprecedented in the history of this Cattleya.

EULOPHIELLA ELISABETHÆ.

An exquisitely beautiful New Orchid from Madagascar, for which a new genus has been created.

Mr. R. A. ROLFE, of Kew Gardens, the author of the genus, has examined our plants, and certified them true.

The *Gardeners' Chronicle* says:—"It was decidedly one of the most remarkable Orchids—if not the most remarkable plant—in the last Ghent International Exhibition."

Mr. WATSON, in the *American Garden and Forest*, says:—"This is a plant of extraordinary interest and beauty, with white flowers, a yellow lip, and rich crimson-purple sepals."

The *Gardeners' Chronicle* says:—"The flowers are as large as those of *Odontoglossum citrosum*, white, with the outer surface purplish-red; callus of the lip orange-yellow."

The plant then exhibited came from Mr. HAMELIN.

EULOPHIELLA ELISABETHÆ.

is a Madagascar plant, and all and every plant now in Europe were collected by Mr. Hamelin.—*Vide* M. SALLERIN's letter, in *Gardening World*.

150 SPLENDID GROWING PLANTS WILL BE OFFERED.

CATTEYA GIGAS—SECTION OF SANDERÆ.

Strong and Healthy Established Plants, all Unflowered.

These plants are from the same importation that produced C. gigas Sanderæ, C. gigas Hamar Bass variety, which one of our highest Orchid authorities declares to be the richest-coloured of all Cattleyas; C. gigas Rothschildiana, and a wonderful white one, just flowered by the Duke de Massa.

OLD AUTUMN-FLOWERING CATTLEYA LABIATA.

from which has flowered *labiata alba*, Le Doux's variety, Hardy's variety, Sanderæ, and numerous other grand forms.

The New CYPRIPEDIUM SARGENTII.

" "

NICHOLSONIANUM.

MASSAUANUM.

CYMBIDIUM HUMBLIOTH. C. CYPEREFOLIUM.

PHAIUS AMAELIS. P. SANDERIANUS.

DENDROBIUM COCKSONII. D. NOBILE SANDERIANUM.

LEICHTIANUM. CÆLOGYNE SANDERÆ.

PALUMBINA CANDIDA. ONCIDIUM GRAVESIANUM. &c.

On view morning of Sale, and catalogues had.

Cryptoprocta ferox.

MESSRS. PROTHEROE AND MORRIS will include in their GREAT ORCHID SALE, which will be held in their Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, the 4th of August next, at half-past 12 o'clock precisely, two young so-called

TREE LIONS,

from Madagascar, these animals are of great interest and much has been written about them.

Langley, near Slough.

About 1 mile from Langley Station.

CLEARANCE SALE OF PLANTS, many of which have been successfully exhibited, by order of K. W. Mann, Esq., who has let the Residence.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Langley Broom, Langley, near Slough, on WEDNESDAY, August 9, at one o'clock, without Reserve, the whole of the well-grown STOVE and GREENHOUSE PLANTS, including trained specimen Pelargoniums, show varieties, and fine plants of Cyclamen persicum, which have been exhibited at the Crystal Palace and Botanic Gardens, and have taken many prizes; choice Ferns, including specimen Davallias, Gymnogrammas, and Microlepias; Crotons, and Orchids, Palms, Arum Lilies, and many others.

On view day prior and morning of Sale. Catalogues may be had of Mr. Phillips, Head Gardener, on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

North Finchley, N.

Adjoining the main North Road, and about five minutes' walk from Woodside Park Station.

IMPORTANT UNRESERVED SALE OF PLANTS,

Three Horses, Two Market Vans, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mrs Weatherill to SELL by AUCTION, on the Premises, the Woodside Nursery, North Finchley, N., on TUESDAY, August 1, at 12 o'clock precisely, in consequence of the large number of lots, entirely without reserve, 6000 CALLAS, strong plants; 1900 GENISTA FRAGRANS, cut back; 500 PELARGONIUMS MADAME KENIG, the best white; 1500 PELARGONIUMS, in variety; 2500 TEA ROSES in pots, many of them extra fine; 300 ROSES GENERAL JACQUEMINOT, 1000 FAIRY ROSES, 900 CHRYSANTHEMUMS, best market sorts; 500 IVY-LEAF GERANIUMS, 4000 LILIUM CANDIDUM in pots, 500 LILIUM SPECIOSUM ALBUM, 5700 MAIDENHAIR FERNS, 300 ASPIDISTRAS, 280 large CAMELLIAS and AZALEAS, including twenty-five specimen AZALEA INDICA ALBA, 4 feet by 4 feet, and thirty others, 4 feet by 3 feet, and large plants in 16 and 24-pots. PEAT, STAKES, WATER-TUBS, BARROWS, and FLOWER-POTS. Also, Two capital four-wheel Spring Market VANS, two Tumbril CARTS, small VAN, well bred MARE and FOAL, one bay COLT, and one black HORSE.

May be viewed three days prior to the Sale. Catalogues can be obtained on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 & 68, Cheapside, London, E.C.

Hastings.

IMPORTANT TO EXHIBITORS AND FURNISHERS. CLEARANCE SALE OF SPECIMEN EXHIBITION PLANTS, remarkably well-grown and in the finest possible condition for the forthcoming Flower Shows.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. C. Gilbert to SELL by AUCTION on the premises, Springfield Nursery, Hastings, on WEDNESDAY, August 2, at 1 o'clock punctually, the whole of his choice and well-grown EXHIBITION SPECIMEN PLANTS, including noble examples of Kentias, Chamaerops, Brachia, Crotons of sorts symmetrically formed and of the brightest colours, noble Tree Ferns, Dicksonias, Alsophilla australis, Microlepis exaltata, Pteris umbrosa, Adiantum of sorts, a beautiful specimen of Gymnogramma Wettenthaliana, Exhibition Flowering Plants, amongst which may be mentioned Allamanda grandiflora, &c., Dipladenias of sorts, Vallota purpurea, Stephanotis, Rondeletia, grand plants of Lapageria alba and rosea, Statice Gilberti, Autumn-flowering Ericas of sorts, &c.

May be viewed any day prior to the sale. Catalogues had on the premises and of the Auctioneers, 67 & 68, Cheapside, London, E.C. N.B.—Cheap trains run from London every day.

Elm, Cambridgeshire.

VALUABLE ORCHARD LAND FOR SALE.

MESSRS. MAXEY AND SON have received instructions to SELL by AUCTION, at the "White Hart" Hotel, in Wisbech, on THURSDAY, August 3, 1893, at 7 o'clock in the evening precisely, a very valuable ORCHARD and FRUIT GARDEN, situate in the village of Elm, about 2 miles from the Market Town of Wisbech, and in the midst of one of the finest fruit-growing districts in that neighbourhood. The property comprises in all 28 a. or 36 p. of extremely valuable land (the soil being of the richest quality, and especially adapted for the cultivation of Strawberries), together with a commodious brick and thatched Farmhouse, with large Barn, Granary, Stables, and other outbuildings.

Possession will be given at Michaelmas next. Particulars, Plans, and Conditions of Sale can be obtained on application to the Auctioneers, South Brink Place, Wisbech; or to BOTSFORD AND KING, Solicitors, 10, Market Street, Wisbech.

WANTED, a SMALL NURSERY, with Dwelling-House, suitable for local Jobbing Trade. A. M., 35, Tollington Park, N.

ADVERTISER seeks opening in Market Nursery, where he could INVEST £100 to £150 in a genuine concern. Thoroughly experienced. Highest references. Full particulars to M. C. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SOUTH COAST.—Situate in the best position of an important seaside resort. TO BE SOLD, a bargain, a first-class FLORIST'S BUSINESS, with a turnover of over £6000 per annum. Price for the whole as a going concern, £1500, but a reasonable offer would not be refused. Held on lease at £170 a year, £15 of which is let off.

Full particulars of PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, E.C. For 5046.

To Nurserymen, Investors, and Others.

FOR SALE, by Private Treaty, the Stock, Greenhouses, Pits, &c., together with the Goodwill of a NURSERY BUSINESS established more than half a century, situated about a mile from a thriving town in the Midlands. The Nurseries are about 23 acres in extent, and are well stocked. There are also 8 Greenhouses, Forcing Pits, Sheds and Offices, including an excellent and ornate Residence, Long Lease, &c. The whole presents an opportunity rarely met with in the Nursery Business. For particulars apply by letter, to X., Messrs. C. J. Corkran & Co., 13A, King's Road, Chelsea, S.W.

FOR SALE, a FREEHOLD NURSERY, situated in the west end of one of the most fashionable seaside resorts in England (South Coast), containing 5 Houses, well heated and modern built. Incoming for Freehold, &c., £1500.—Address for particulars to THOMAS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, a FREEHOLD MARKET NURSERY, 420 feet of Glass-houses, and about 70 feet of frames, all heated, standing in two Acres of land, and capable of great extension. Near station for London or the North. S. W. DANBY, Leagrave, near Luton, Beds.

FOR SALE, a good and extensive SEED BUSINESS (Farm, Vegetable, and Flower). Returns, £5000 per annum, with good profits. Satisfactory reasons for selling.—Apply to B. Messrs. Hurst & Son, 152, Houndsditch London, E.C.

GENUINE Old-established FLORIST'S BUSINESS FOR SALE, main thoroughfare, good connection, good six-roomed House, Stable, &c., seven Greenhouses, excellent stock of Plants suitable for Cut Flower Trade, growing crops of Grapes and Tomatoes. Having taken another concern, would sell cheap.—WILSON, 149, Markhouse Road, Walthamstow, E.

OLD ESTABLISHED FLORIST BUSINESS for immediate disposal. No reasonable offer refused.—A. K., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a NURSERY and JOBBING BUSINESS; 800 feet of Glass, well-stocked Cottage, and 1 Stabling. All Home Trade. Established 20 years. All at £300, or offer.—S., 122, Malham Road, Forest Hill, S.E.

FOR SALE, long LEASE, over 30 years, NURSERY and JOBBING BUSINESS, 4 Greenhouses (heated) and Pits; 2 Cottages, 70 feet frontage by 250 feet deep. Well stocked.—Apply J. H., Park Nursery, Ealing, Middlesex.

FOR DISPOSAL, Genuine Old-established SEED BUSINESS, situate in main thoroughfare of one of the best Market Towns in the Midlands. Present Turnover about £300. Splendid opportunity for young Man starting Business. Total incoming from £150 to £200. No Book Deals to take to. Satisfactory reasons for Disposal.—S. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

LARGE GARDEN, South of England, 16 acres, two Cottages, twenty large Green and Vine Houses, and Heated. Low rent.—ELDRIDGE, Portland Club, Southsea.

Tottenham.—To Nurserymen and Florists.

TO BE LET, a NURSERY, consisting of four Greenhouses, three Heated by Hot-water, capital House, containing eight rooms and domestic offices. Rent £24. Particulars of Mr. ALFRED RICHARDS, Estate Agent, 816, High Road, Tottenham. (1414).

City of Peterborough.

TO NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS. TO BE LET, with Immediate or Michaelmas Possession, the well-known, old-established Peterborough BUSINESS, comprising a NURSERY FARM of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the town. Also, a superior SEED SHOP and STORE, in a first-class central position; and a FLOWER STAND on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, FOX AND VERGETTE, Estate Agents, Peterborough.

FOR SALE, cheap, one No. 2 Patent, 9 ft. 6 in. HORIZONTAL BOILER (references to the Thames Bank Iron Co.), with Fittings complete. Brand new last December, never used and quite perfect. Full particulars given, and offers requested to ENOCH WHITE AND SONS, Nurserymen, Bournemouth.

OAK STAKES FOR ROSES, &c., 4 feet long, 1/2 inch, 3/4 inch, and 1 inch square. Price 4s., 6s., and 8s. per 100.—SHENSTONE, Grange Road, Leyton.

DOUBLE WHITE PRIMULA—500 extra strong plants, in large 60's, ready for 48's at once, 3s. per 100.—G. BETHELL, Whiteley's Nurseries, Hillingdon Heath, Uxbridge.

FOR SALE, healthy CUTTINGS of CARNATIONS Malmaison, Blush, 6s. per 100; 45s. per 1000; rooted cuttings, 20s. per 100, ready end of August; Miss Jolliffe cuttings, 3s. per 100.

W. H. CASTLE, Gate House, East Hothly, Sussex.

FOR SALE, through being over-topped, a quantity of STOVE PLANTS, consisting chiefly of Gardenias, Eucharis, Calanthes, Nepenthes, Ixoras, Crotons, "Specimen Fern—Davallia Mooreana," and other Stove Plants. For particulars apply to W. CARE, Head Gardener, Hawkstone, near Shrewsbury.

ORCHIDS.—New and rare species, a special feature. Catalogue forwarded post-free on application. SEEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich, London, S.E.

PALMS, FERNS, &c.—FERNS in Variety.—ARALIAS and CYPERUS NATALENSIS in 48's, 6s. per dozen; PALMS in variety, and FIGUS in 48's, 12s. per dozen; PALMS, fine stuff, in large 60's, 5s. per dozen; FERNS and CYPERUS, in 24 inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order.

LANE AND MARTIN, 227, Brixton Road, London, S.W.

EXHIBITIONS.

MAIDENHEAD HORTICULTURAL SOCIETY.
ANNUAL SHOW at CURTISFIELD, Maidenhead, on
THURSDAY, August 10, 1893. Entries close on August 4.
Schedules and particulars from—
CHAS. A. VARDY, Hon. Sec.
(Queen Street Chambers).

CARDIFF HORTICULTURAL SOCIETY.
FIFTH ANNUAL SHOW, August 15 and 16.
PRIZES and Specials, £200. Entries close August 8.
H. GILLET, Secretary.
63, Woodville Road, Cardiff.

500 ADIANTUM CUNEATUM, chiefly
large 32's, fit for 24's. To be sold cheap. Must clear
at once.
E. GEEVES, Florist, Derby Road, East Sheen, S.W.

20,000 PTERIS CRISTATA,
extra good form, fine stuff, in thumbs,
fit for potting into 48's.
12s. per hundred, or 25 per thousand.
Not less than Fifty sent at the above price.
Other sorts of Ferns on application.
J. HILL, Florist, Lower Edmonton.

TREE CARNATIONS.—Winter Cheer, Miss
Jolliffe improved, Mrs. A. Hemsley, and other best
winter-flowering sorts, extra fine stuff, in 5-inch pots.
Special offers on application.
H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

FERNS from Stores, *Adiantum cuneatum*
and *Pteris tremula*, strong clean stuff, fit for single
pots, 4s. per 100; 35s. per 1000. Cash with order.
G. ADCOCK, Florist, Rokeby Road, Brockley, S.E.

LAXTON'S STRAWBERRIES THE BEST.
—Excellent plants, in pots, for forcing and open ground.
Runners ready at once of Noble, Vicomtesse, Ruskin, Nicotise,
British Queen, President, Commander, Competitor, Jas. Veitch,
Keen's Sucrée, Latest of All, Marguerite, Paxton, Waterloo,
Sensation (new '92), and the grand new "Royal Sovereign"
(three certificates), an earlier, richer flavoured, and improved
Sir J. Paxton. Handsome coloured plate 6d. (gratis to cus-
tomers). Full Descriptive Priced List free from—
THOMAS LAXTON, Strawberry Plant Grower, BEDFORD.

NEW CARNATION (EMPRESS OF INDIA).—A grand new, bright Scarlet Carnation, of
very vigorous growth, quite hardy, having stood out in the
open all last winter, very free bloomer, many plants carrying
now from 80 to 80 blooms and buds of immense size and bril-
liant colour, none of which burst. This variety is acknow-
ledged by all who have seen it to be the very best for market
purposes. Strong plants in pots, 3s. each; 36s. per dozen.
Ready in September.
Apply to J. COBBAN AND SON, Nurserymen, Florists, &c.,
Rotherham.

BULBS.—Our special offer of Daffodils, and
other Bulbs for early planting, is now ready. *Lilium*
candidum, 10s. and 12s. per 100; *Lilium Harrisii*, 5s. to
10s. 6d. per dozen; Roman Hyacinths, 12s. 6d. and 18s. per 100,
very scarce; *Narcissus* (paper-white), 5s. per 100; *Narcissus*
Double Roman, 5s. per 100; *Gladiolus Colvilli* (The Bride),
lovely for cutting, 2s. 6d. per 100; *Iris hispanica* (the poor
man's Orchid), finest mixed, 1s. 6d. per 100. Every article the
best procurable.
J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

NEW IMPORTATION OF ORCHIDS
From BRAZIL and BORNEO.

PARTICULARS POST-FREE ON APPLICATION.
INSPECTION INVITED.

A. H. GRIMSDITCH, Importer,
5, CLAYTON SQUARE, LIVERPOOL.

DANIELS' DEFIANCE.
The Finest Variety of Cabbage in Cultivation.

It is early, short-legged, and compact, grows rapidly to the
weight of 10 to 15 lb., and is of the most delicious Marrow
flavour. Should be in every Garden. Sow now. Seed, our true
stock, with cultural directions, per ounce, 1s. 6d., post free.

DANIELS BROS.,
Seed Growers and Nurserymen, Norwich

DANIELS' GOLDEN ROCCA ONION.

The most superb variety in cultivation; of fine globular
form, with golden yellow skin; often grows to the weight of
2 to 3 lb. each, and of a mild, delicate flavour. Splendid for
exhibition. Sow now. Seed, with cultural directions, per
ounce, 2s., post-free.

DANIELS BROS.,
Seed Growers and Nurserymen, Norwich.

ALL GOODS DELIVERED FREE
on board, London, Antwerp, Rotterdam. £ s. d.
LILium HARRISII, 5—7 in. circ., per 1000 bulbs. 6 5 0
" " 7—9 in. " " " " 11 10 0
" " 9—11 in. " " " " 22 10 0
" *AURATUM*, 7—9 in. " " " " 8 7 6
" " 9—11 in. " " " " 11 10 0
TUBEROSES, Pearl, select 4—6½ in. " " 1 10 0
" " seconds, 3—4 in. " " 1 2 6
Prices for *GLADIOLUS*, &c., on application.
F. W. O. SCHMITZ AND CO., Jersey City, N.J., U.S.A.

EARL'S COURT EXHIBITION.

Exhibition of
GARDENING and FORESTRY
THE GARDEN of LONDON.

AUGUST 9 & 10—GREAT SHOW

OF
**FLOWERING AND FOLIAGE PLANTS,
HARDY FLOWERS, & FRUIT.**

Classes (Open and Amateur) for Collections of
Hardy Flowers, arranged for effect, &c.

Meritorious Exhibits not named in the Schedule will be
recognised.

Prizes, Medals, and Certificates awarded for every Show.
All applications for entries, schedules, regulations, and fur-
ther information should be addressed to Mr. H. E. MILNER, the
Chairman, at the Offices of the Exhibition, Earl's Court, S.W.

ADMISSION to the Exhibition Building, Flower Show,
and the Central and Western Gardens, and to
one of 2000 free seats at Captain Boyton's
World's Water Show, 1s.

OPEN DAILY, from 11 A.M. to 11 P.M.

SEASON TICKETS £1 1s.,

To be obtained from the usual Agents and the
Secretary.

NOTHING is too small.
NOTHING is too much trouble.

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D. SHUTTLEWORTH & CO., Ltd.,
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PECKHAM RYE, LONDON, S.E.,
and FLEET, HANTS.

**PURE WHITE,
EARLY
ROMAN HYACINTHS,**
FOR FORCING PURPOSES.

Our First Consignment is now to hand, in
excellent condition.

DICKSONS Bulb Growers
and Importers, **CHESTER.**

SPECIALITY—
FOLIAGE PLANTS
ICETON'S
LARGE PALMS.
PUTNEY, S.W.

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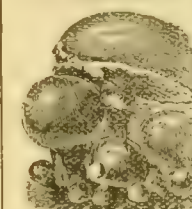
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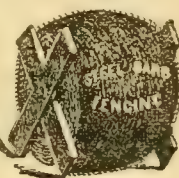
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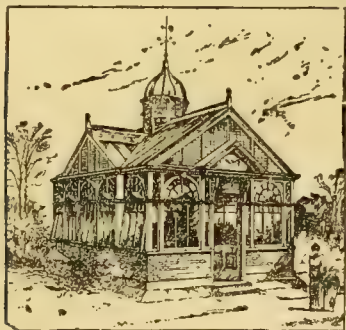
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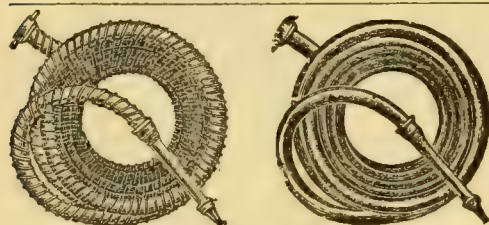
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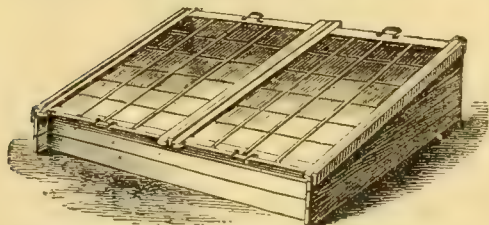
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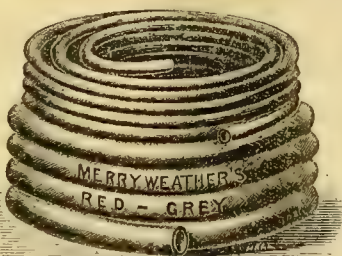
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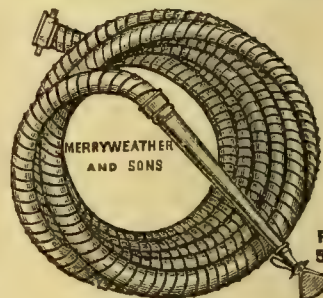
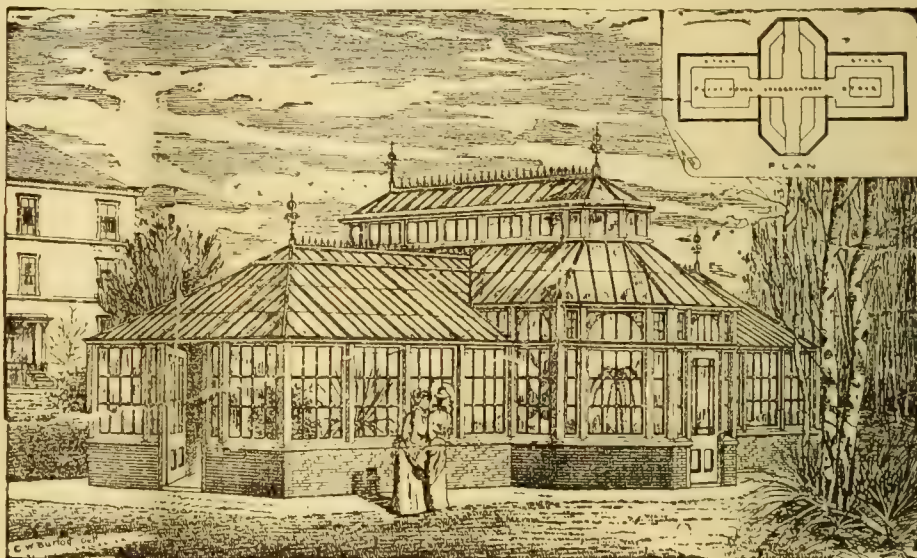


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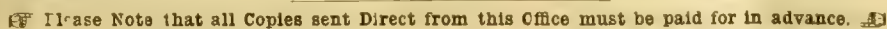
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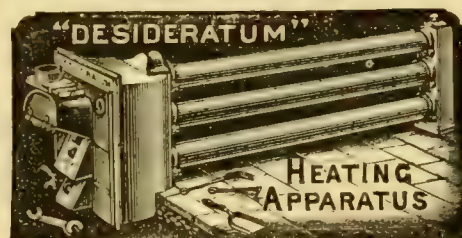
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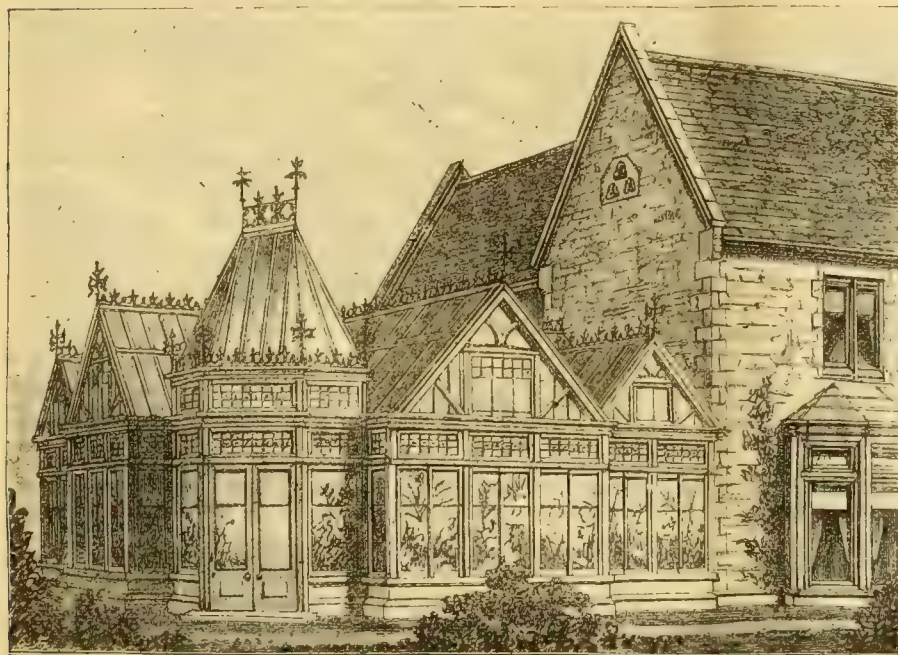
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A SPLENDID IMPORTATION, GUARANTEED TRUE, OF
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Collected by one of our most experienced Collectors.

Mr. J. O'Brien says this grand new species is **THE KING OF THE CATTLEYS.**

Awarded Two First-class Certificates by the Royal Horticultural Society.

Mr. J. O'Brien says: "Taking the flower at a glance, the nearest thing I can liken it to is the *Cattleya Imshooiana*, for which Baron Schroder received a First-Class Certificate at the Royal Horticultural Society, but this is different, and superior in every respect."

The *Gardeners' Chronicle* says:—"Six flowers on one inflorescence were noted, and there is little reason to doubt that, under cultivation, this Orchid will develop in beauty, and take rank among the very finest of the genus."

Our plants show up to nine and ten flower-seats on a single inflorescence.

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In superb order and condition, of this the ne plus ultra of the genus—the finest importation yet brought to Europe.

The plants offered are truly magnificent, and many of the masses are simply grand.

EVERY PLANT WILL BE OFFERED.

The type of our importation may be imagined by the fact that we are able to show on the day of Sale great masses, with flower-spikes equal in size to *Cattleya gigas* Sanderiana, and showing as many as nine and ten flower-seats on a spike, this being quite unprecedented in the history of this *Cattleya*.

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An exquisitely beautiful New Orchid from Madagascar, for which a new genus has been created.

Mr. R. A. Rolfe, of Kew Gardens, the author of the genus, has examined our plants, and certified them true.

The *Gardeners' Chronicle* says:—"It was decidedly one of the most remarkable Orchids—if not the most remarkable plant—in the last Ghent International Exhibition."

Mr. Watson, in the *American Garden and Forest*, says:—"This is a plant of extraordinary interest and beauty, with white flowers, a yellow lip, and rich crimson-purple sepals."

The *Gardeners' Chronicle* says:—"The flowers are as large as those of *Odontoglossum citreum*, white, with the outer surface purplish-red, callus of the lip orange-yellow."

The Plant then exhibited came from M. Hamelin.

EULOPHIELLA ELISABETHÆ

Is a Madagascan plant, and all and every plant now in Europe were collected by M. Hamelin.
Vide Sallerin's letter in Gardening World.

150 splendid growing plants will be offered, and each and every plant is guaranteed.

CATTLEYA GIGAS — (SECTION of SANDERÆ). ESTABLISHED, BUT UNFLOWERED PLANTS.

From the same importation came the superb *C. gigas* Sanderæ, which received an award of merit from the Orchid Committee of the Royal Horticultural Society on June 6. The lovely variety named after Hamar Bass, Esq., and which Mr. James O'Brien with justice declares to be the richest in colour of any known *Cattleya*—also flowered from this importation as well as the grand variety *Rothschildiana*, and now we have a letter from M. le Duc de Massa, saying that he has just flowered a plant, with pure white sepals and petals, very large and very broad, and with a labellum of surpassing brilliancy. All these, and many other magnificent forms have flowered from the importation offered now. *The plants are unflowered, and are strong and healthy.*

CATTLEYA LABIATA.

The true Autumn-flowering labiata, Sander's finest type.

Which produced the *labiata alba*, Hardy's superb variety, the chaste and elegant *Sanderæ*, the rich *Sanderiana*, *Le Doux*'s variety, and many others of great beauty and excellence.

The NEW *CYPRIPEDIUM SARGENTII*, the NEW *CYPRIPEDIUM NICHOLSONIANUM*, the NEW *CYPRIPEDIUM MASSAIANUM*, *SOBRALIA XANTHOLEUCA*, *CŒLOGYNE SANDERÆ*, *CYMBIDIUM HUMBLOTTII*, *CYMBIDIUM CYPERÆFOLIUM*, *DENDROBIUM NOBILE* from the Lang-tang mountains, *DENDROBIUM NOBILE CORKSONIANUM*, and *SANDERIANUM DENDROBIUM LEECHIANUM*, *RENANTHERA STORIEI*, *PHAIUS AMABILIS* and *SANDERIANA*, *PALUMBINA*, *CANDIDA*, *ONCIDIUM GRAVESIANUM*, &c., &c., &c.



THE

Gardeners' Chronicle.

SATURDAY, JULY 29, 1893.

THE WORLD'S FAIR.

THE most remarkable out-door display of the season at Chicago, and, it seems likely, the most remarkable show of the exposition, was the *Rhododendron* and *Azalea* display in May and June. These showy shrubs, though largely of American origin, are but little known through the Western States, and they were a novelty to many visitors.

It must be owned frankly that the foreign exhibitors bore the palm in these displays, and the American growers were far behind them. In *Rhododendrons*, the finest displays were those of Anthony Waterer, Knap Hill; John Waterer Bagshot; and J. J. Moser, of Versailles. Mr. Anthony Waterer's plants, which were at the foot of the terrace north of the Manufactures Building, were really superb, a bank of noble specimens, covered with bloom. The plants of *Everestianum* were specially noticeable in this collection; *Lady Eleanor Cathoart* was shown in fine form, and *album elegans*, *purpureum elegans*, *Fleur de Marie*, and *Michael Waterer* were splendidly bloomed. This bank of bloom, below the stately building, formed a fine landscape feature, but owing to the exposed situation, the plants were sheltered by an awning. The glaring sun and harsh lake winds combined, are very hard on blooming plants.

The John Waterer *Rhododendrons* are planted out on the Wooded Island, and consist of large and striking specimen plants, which made a forest of bloom. *Everestianum*, John Walter, *Roseum elegans*, and other well-known sorts were flowered. The size of these specimens, some of which were 8 or 10 feet high, made them very noticeable, and they were universally admired.

J. J. Moser, who ranks with the Waterers for the excellence of his display, had some large specimens displayed in the Horticultural Building, among them big plants of *Caractacus*, which were excellent, but the bulk of his collection was arranged by the landscape department at the north end of the Woman's Building.

The Belgian *Rhododendrons* came from the Ghent Horticultural School, A. Dallièrre, Ch. Vuylsteke, and De Smet Bros.; they were generally good, though in some cases there were but few varieties. The Boskoop Nursery Association, W. Van Kleeff & Sons, and Blaoun & Sons, made displays of small or medium plants; among them were fine forms of *R. Catawbiense*. The display of new varieties was small, and those shown were young plants, from which but little could be judged. T. J. Seidel, of Dresden, who showed new plants, had among them a very good white, *Helène Schiffner*, which appears a good thing.

In *Azaleas* a very showy bed of the Knap Hill seedlings was shown by Anthony Waterer; they bloomed to perfection, and may be considered the showiest *Azalea* display there, though the Belgian exhibitors showed some good plants of Ghent and

mollis, and *A. glauca stricta* was displayed in good bloom by J. J. Moser and others. *A. pontica* and *A. Van Houttei* were at their best the first week in June, while the *Azalea* season was ended by *A. arborea* and *A. optima*, which were in bloom the first week in July. These last named were exhibited by Parsons & Sons of Flushing, N.Y., who made a good display of our native *Azaleas*. Pitcher & Manda had some attractive *Azalea* beds, and also fine specimens *Rhododendrons*. Ellwanger & Barry, Rochester, N.Y., and F. W. Kelsey of New York, were among the American exhibitors.

The herbaceous planting on the Wooded Island has been most attractive, especially the work of the Floricultural Department. The hardy planting by exhibitors is too formal in character to be really effective, but where it has been informally grouped along the shrubbery, it is charming. Mats of *Forget-me-Nots* and hardy *Pinks*, big clumps of *Delphiniums* and *Columbines*, and glowing oriental *Poppies*, have kept up a constant show of bloom. A border of *Canterbury Bells* was a feature during June; superb flowers, in all colours and types, and though such an old familiar flower, it was one of the show features of the island.

So far, the horticultural department of the Fair has been noticeable for its utter absence of remarkable novelties, so it was an occasion when Mr. Dimmock arrived with Mr. Sander's Ghent prize-winners, *Alocasia Watsoni*, *Dracæna Sanderiana*, and *Oreopanax Sanderianum*, all figured in your columns. These remarkable plants were arranged beneath some of the New South Wales Tree Ferns, in the north wing of the building. All the specialists were in raptures over them, particularly the *Dracæna*, which appears to have made the deepest impression, though the rich colour of the *Alocasia* and noble habit of the *Oreopanax* were much admired. All three plants were in perfect order, looking as if a journey of 4000 miles or thereabouts was a mere bagatelle. It is a fine test of their ability to stand shipment. But it is to be feared their beauty and rarity were caviare to the average visitor. We are looking forward to good displays of *Gloxinias* and tuberous *Begonias*; the latter are to be used extensively in bedding. *E. L. Taplin, Chicago.*

NEW OR NOTEWORTHY PLANTS.

DIPLADENIA EXIMIA, Hemsl., n. sp.*

An exceedingly beautiful species of this tropical S. American genus, which I have neither been able to match in the Kew herbarium, nor identify from the descriptions of other species not represented at Kew by authenticated specimens. In the rich deep rose colour of its flowers, *Dipladenia eximia* is nearest *D. acuminata* (*Botanical Magazine*, plate 4828), but otherwise it is very different. Indeed, it is a miniature by the side of such species as *splendens* and *Breareleyana*, yet it does not suffer by comparison, for what it loses in size it gains in compactness. The broadly elliptical or almost orbicular leaves are from $1\frac{1}{2}$ to $1\frac{3}{4}$ inch long, with close lateral nerves and short stalks. The flowers are from 2 to $2\frac{1}{2}$ inches in diameter in the one cluster before me, but as I know nothing of the conditions under which the plant was cultivated, I can form no judgment as to whether these dimensions are normal. Concerning the habit of the plant, I can say nothing beyond my opinion that it belongs to the section having climbing or trailing stems. *Dipladenia eximia* was sent to Kew for determination by Messrs. Sander & Co., of St. Albans. *W. Botting Hemsley.*

* *Dipladenia eximia*, Hemsl., n. sp.—Folia breviter petiolata, papyracea, omnino glabra, late elliptica vel fere orbicularia, maxima visa cum petiolo $1\frac{1}{2}$ poll. longa, abrupte obtuseque acuminata, margine leviter recurva, venis primariis lateralibus utrinque circiter 9 costaque supra impressis subtus elevatis. Flores racemoso-cymosi, cymis paucifloris, breviter pedicellati, saturate rosei, $2-2\frac{1}{2}$ poll. diametro; calycis lobi lineari-subulati, subaequales, circiter 2 lineas longi; corollae infundibularis, tubo infra medium anguste cylindrico, lobis latis oblique rotundatis apiculatis; genitalia omnino inclusa. Folliculi ignoti. *W. B. H.*

LILIUM LOWII* (see Fig. 29).

This is a Burmese Lily, described by Mr. Baker in the *Botanical Magazine*, t. 7232, May, 1892. It has been exhibited lately by Messrs. Hugh Low & Co., and our illustration (fig. 29, p. 121) is taken from a plant in their collection. It is a tall-growing Lily, with linear-lanceolate leaves. The flowers, in groups of three, at the top of the stem, are drooping, bell-shaped, with segments broadly lanceolate, slightly recurved at the tips, and with a prominent midrib. The colour is as of ivory, flushed with green, and densely spotted with purplish-red at the base of the segments inside.

DIDYMOCARPUS LACUNOSA,† J. D. Hook.

A lovely little plant (shown on Tuesday last at the Royal Horticultural Society), with intensely violet-blue nodding flowers, introduced by Messrs. Veitch from Penang, and of which Mr. Curtis collected specimens on damp rocks near the coast in the island of Langkaur, on the west side of the Malayan peninsula, north of Penang. It is a stemless Gesneriad, with stalked cordate ovate hairy leaves, about $1\frac{1}{2}$ inch (4 cm. long, rather less in breadth); the upper surface is deeply pitted. The flower-stalks, which spring from the centre of the tufted leaves, are 5–6 inches high, slender, leafless, and bear at the summit a tuft of flowers, all directed to one side. The individual flowers, which are like those of a *Gloxinia* in miniature, and deep violet-blue in colour, are about $1\frac{1}{2}$ inch in length (3 cm.), irregularly tubular, tube distended on the under surface, mouth slanting, lobes of limb shallow, roundish, reflexed; three lower ones larger than the two upper.

KEW NOTES.

RHODODENDRON SMIRNOWII.—This distinct and promising species of *Rhododendron* has lately flowered in the arboretum nursery at Kew, where it has been grown since 1886, and is now a compact leafy bush, a foot high. It is as hardy as *R. caucasicum*, to which it is evidently closely allied, but it differs from that and all other hardy *Rhododendrons* in its thick layer of felt-like wool, which clothes the under-side of the leaves, petioles, and branches. The leaves are oblong, blunt at the apex, the margins revolute, and the texture leathery. The largest leaves are 4 inches long, and $1\frac{1}{2}$ inches broad, and the petiole is an inch long. The flowers are borne on the ends of the shoots, as in *R. caucasicum*; they are characterised by a small saucer-shaped calyx, a campanulate corolla $1\frac{1}{2}$ inches long, ten unequal stamens, shorter than the corolla, and hairy at the base; style, declinate glabrous; colour, bright rose-purple. The dark green of the upper surface of the leaves, and their felted under-side, together with the sturdy growth, hardness, and evergreen characters of this plant, are likely to bring it into notice, especially with breeders of garden *Rhododendrons*. It was described by Trautvetter in *Acta Horti Petropolitani* in 1884, and poorly figured in *Gartenflora*, apparently from a dried specimen, two years afterwards. It was discovered on the Asiatic side of the Caucasian Mountains, along with *R. ponticum* and *R. Ungernii*. *W. W.*

RHODODENDRON UNGERNII.

This *Rhododendron* is grown at Kew by the side of *R. Smirnowii*. They are not unlike each other in habit, but there are good characters by which they can easily be distinguished, even when not in flower. *R. Ungernii* has larger leaves, with cuspidate tips, and the felt on the under-side is white, whereas in *R. Smirnowii* it is pale brown. In the flowers there is a marked difference in the size and form of the calyx-lobes, which in *R. Ungernii* are lance-shaped, and half-an-inch long. The flowers are borne in large compact terminal heads, and the corolla, which is campanulate, obtusely five-lobed, and $1\frac{1}{2}$ inch long, is white, with reddish spots and a tinge

* *Lilium Lowii*, Baker, in *Bot. Mag.*, t. 7232, syn. *L. nepalense*, Collett et Hemsley, in *Journ. Linn. Soc.*, vol. xxviii, p. 138, t. 22, non Hemsl.

† *Didymocarpus lacunosa*, J. D. Hooker, in *Bot. Mag.*, May 1, 1892, t. 7336.

of green. This species has not yet flowered at Kew. It was discovered near Batum by Baron Unger-Sternberg, growing under the shade of *Picea orientalis* along with *R. Smirnowii*, where it formed a shrub 10 feet high. It was named and described by Trautvetter in *Acta Horti Petropolitani* in 1884. The most remarkable character of these two *Rhododendrons* is the layer of felt-like wool which clothes the leaves on the under-side, a character not uncommon in the Himalayan species of the genus, but unknown in the garden *Rhododendrons*, of which *R. caucasicum* is one of the progenitors. *W. W.*

FRUIT, AND THE WEATHER.

YOUR correspondent, "Wild Rose," has started a very interesting subject in his remarks on the fruit crops this year, and though I must plead guilty to being one of the theorists (though not in meteorology—Heaven forbid!) whom he distrusts, yet perhaps he will bear with me while I say a few words on the subject.

In 1881 I committed myself to the theory that, as Pears make their growth earlier than Apples, a hot July and August means a good Pear crop, and a hot August and September a good Apple crop, for the following year, allowance being made for spring frosts. The following Table shows the mean maximum temperature of last (1892) July, August, September, and the averages of the preceding twelve years here.

Mean Maximum.			Rainfall.		
1892.	Average of 12 yrs.		1892.	Average of 12 yrs.	
July ... 64° 1	66° 2	July ... 2.42	In. ... 2.49		
August ... 65° 6	65° 6	August ... 3.04	In. ... 3.36		
Sept. ... 55° 6	63° 1	Sept. ... 3.43	In. ... 2.45		

From the above it will be seen that August was an average month in temperature and rainfall; July considerably below the average in temperature, but average in rainfall; and September far below the average in temperature, and nearly 1 inch above it in rainfall, added to which it rained on twenty-three days. It was followed by the wettest month on record for this district. The result as regards Pears and Apples is as follows:—Taking 0 to 3 to represent the range from no fruit to a good crop, I find the trees in my garden may be classified as below:—

Apples.		Pears.	
Bushes, Standards, &c.	Espaliers.	Pyramids, &c.	Espaliers.
0 = 18 trees ... 0 = 1 tree	0 = 0 trees ... 0 = 6 trees		
0 = 29 " ... 1 = 11 "	1 = 5 " ... 1 = 3 "		
2 = 15 " ... 2 = 10 "	2 = 4 " ... 2 = 5 "		
3 = 7 " ... 3 = 12 "	3 = 2 " ... 3 = 7 "		

From the above it will be seen that the Pear crop is better than the Apple (the reverse being usually the case), and espaliers, on which the wood, being more exposed to the sun, has a better chance of ripening, give a better result than bush and pyramidal trees. So far, this year fairly confirms the wood-ripening theory, though the crop, especially of Pears, is better than I should have expected from the above temperatures, &c.

But what of the crop of stone fruits, i.e., Plums, Apricots, Peaches, and Cherries? Here, I may say at once, the wood-ripening theory fails utterly. As I have shown, of the three wood-ripening months, two were bad and one only average; but this is always a bad district for stone fruits—a fact which I have always attributed to our low summer temperature not ripening the wood sufficiently. Yet this year the crop is simply phenomenal! Had anybody asked me four months ago whether I thinned my Plums and Apricots, I should have laughed at him; yet I have had to do so this year, and heavily. Well, this abnormal crop coincides with an equally abnormal spring, as will be seen by the following table:—

Mean Mar.				
March.	April.	May.	June.	
1893 ... 54° 7	60° 7	63° 7	69° 2	
Average of 12 years preceding 47° 7 52° 3 58° 7 64° 6				
Rainfall.				
March.	April.	May.	June.	
Ins.	Ins.	Ins.	Ins.	
1893 ... 0.36	0.62	1.38	1.28	
Average of 12 years preceding 2.07 1.86 2.16 1.89				

It is difficult to avoid connecting the two phenomena, but, granting that the warm dry spring has been the cause of the large fruit crops, it remains to be shown in what way it has acted. On this point I will not venture to offer any theory, but having given the facts, will leave the botanical physiologists to draw their inferences. I may, however, anticipate some possible suggestions. It was not the absence of spring frosts, for these are never of any consequence here; nor the dry weather, for that is of common occurrence during the blossoming time; nor fertilisation of the ovaries by insects, for

vague impressions and recollections, that we shall ever arrive at understanding the causes that affect our crops, but by a patient, and, above all, accurate record of facts. *Alfred O. Walker, Nant-y-Glyn.*

ORCHID NOTES AND GLEANINGS.

LÆLIA MONOPHYLLA.

This pretty scarlet Jamaican highland plant may be now said to be well-established in cultivation.

STANHOPEA INODORA.

Although introduced to gardens from Mexico by Loddiges in 1843, it is very seldom this species is to be found in gardens; indeed, all the species, except *S. oculata* and *S. tigrina* seem to be uncommon. Of the one named, we received flowers from Mr. G. Cragg, gardener to W. C. Walker, Esq., Percy Lodge, Winchmore Hill. It is almost wholly pale-straw yellow, the base of the lip having an orange shade, and on each side of it a spot having the appearance of a partially-obiterated blotch. There are some very minute purple dots also on the labellum.



FIG. 29.—LILIIUM LOWII. (SEE P. 120.)

a note in my diary states that Hymenoptera (bees, &c.) were scarce at that time, and the flower-haunting Diptera (two-winged flies) certainly not unusually abundant.

Everybody who has paid any attention to fruit-growing, knows that no single cause will account for good or bad crops. In addition to climatal conditions, the treatment of the trees, the nature of the soil, injurious insects (worse this year than I have ever known them), and probably many other agents, have all to be taken into account. But I feel reasonably confident that the character of the preceding summer is an important, if not the most important factor in determining the crop of the current year so far as Apples and Pears are concerned, while it is clear, from this year's experience, that it has little or no effect on the crops of stone fruits. And, let me add, it is not by dogmatic assertions, based on

Some time ago, Sir Trevor Lawrence, who grows it well and admires it much, had a specimen with over a score spikes of flower. Of it Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, says:—"Our plants of *Lælia monophylla* are now in flower. The strongest has three spikes, and the best spike has three flowers. It is a very pretty thing, with flowers of good shape and lovely colour, and it should also prove valuable for hybridising." The largest flowers we have seen of it were on a plant grown by Walter Cobb, Esq., Silverdale, Sydenham, who says he finds it very easy to grow and flower in a tolerably cool house. It comes from the region of Filmy Ferns and mosses, alt. 4500 feet, and consequently will not stand drying-off or a dry air, even if kept watered. Messrs. B. S. Williams & Son also grow it well, and gave a good figure of it in their *Orchid Album*. *J. O'B.*

STANHOPEA SACCATA.

Another singular species, having a general resemblance to the preceding, is *S. saccata*, which comes from Mr. Duncan, Warnham Court Gardens, Horsham, but this may readily be distinguished from all others by the pouch beneath the labellum.

EPIDENDRUM PUSILLUM.

A flower of this pretty species, from Major-Gen. A. Hutchinson, Owthorpe, Bournemouth, shows it as a very distinct and attractive species. The nearly equal ovate-acute sepals and petals are pale yellow, lightly freckled front and back with chocolate colour; the column and side-lobes of the labellum are emerald-green, the rounded front-lobe white, closely veined with bright purplish-crimson. It is what the florist would probably call "a botanical plant," but it is a pretty one, nevertheless. *J. O'B.*

DENDROBIUM DENSIFLORUM.

THIS is one of the most popular Orchids among growers for its robust habit, and the freedom with which its dense racemes of flowers are produced. It is a native of Nepal, and so requires warm treatment, and abundance of water in the growing stage. It is very like *thysiflorum*, but *thysiflorum* has terete, not angular, stems; and *densiflorum* has usually yellow flowers, with an orange-coloured lip. The specimen shown in our illustration (fig. 30, p. 123) was grown by Mr. Prinsep, gardener, Buxted Park, who kindly furnished us with the photograph.

REMARKS ON THE FRUIT CROPS OF 1893.

[For Tabulated Summary, see p. 89.]

O, SCOTLAND, N.

MORAYSHIRE.—The Apple crop in this district is the best we have had for some years. Pears a thin crop, and the fruit small. Plums are plentiful on all trees on walls, but thin on standards, except Victorias. Apricots are an exceptionally heavy crop, but are all greatly in need of rain for all sorts of fruit trees, which are fully a month earlier than the average of seasons. *Chas. Webster, Gordon Castle.*

NAIRN.—The fruit crops here are mostly under average, with the exception of Gooseberries. Black and red Currants, and Raspberries are very good. Owing to the extreme heat and dryness, Strawberries failed to swell to full size, but the late ones, such as Elton Pine, with the change of weather, and a good fall of rain, will most likely give a fair crop. *James Maitland, Cawdor Castle.*

1, SCOTLAND, E.

ABERDEENSHIRE.—Apples on standard trees are almost a complete failure. Trees on walls—especially young trees—are carrying a large crop. The only reason that can be given for the failure on standard trees is the extra heavy crop of last year, and the want of vigour in the blossoms, and possibly the dry weather when they were in blossom. Plums set an enormous crop; in some cases, at least, two-thirds had to be thinned out. Small fruits have suffered very much from the attacks of aphides, but still have a fairly good crop. *J. Forrest, Haddo House Gardens.*

— Apples a fair crop in some gardens, others very poor. Pears very few; all over. Plums pretty good in most places. Black Currants nearly a failure. Gooseberries and red and white Currants about half a crop. Cherries rather poor. *G. Tait, Castle Forbes, Whitehouse.*

CLACKMANNANSHIRE.—The fruit crop here in the Devon valley is, with the exception of Pears, above the average. Small fruit, especially so; I gathered the Noble Strawberry in the first week of June, which is some three weeks earlier than the general average of the last ten years. *G. McLeod, Harvieston Castle, Dollar.*

EAST LOTHIAN.—With the exception of the Pear crop, which is under the average, little bloom, having been produced this year, and of Strawberries, the plants having been damaged by the severity of the winter, all kinds of fruit are abundant, and of good quality. Rain came in good time to make this not only an abundant fruit year, but also a year for good quality. *R. P. Brotherston, Tynninghame.*

— This has been one of the best seasons I remember for all sorts of outdoor fruit, especially the small fruits. Apricots and Plums had to be severely thinned. Apples are a much better crop than last year, and the best this season are, Warner's King, Keswick Codlin, Stirling Castle, Tower of Glamis, Ecklinville, Grange's Pearmain, and Worcester Pearmain. Pears are good on Jargonelle, Louise Bonne of Jersey, Beurré Diel, Beurré Rance, but on some other varieties we had a more regular crop last year. *Wm. McKelvie, Broxmouth Park, Dunbar.*

FIFESHIRE.—In most of the places in this district that I have visited, all the fruit crops are good; Apples being over the average, and looking well. Strawberries I never observed better. Laxton's Noble, Garibaldi, Dr. Hogg and Elton Pine being the best among the many kinds that are here. *A. McInnes, Palace Gardens, Falkland.*

FORFARSHIRE.—The Apple crop in this district will scarcely be up to the average, although the blossom was very promising, and the set was very irregular, some trees having a full crop, whilst others have very few or none. Peaches and Nectarines are scarcely grown out-of-doors hereabouts, and very few Apricots. Early Strawberries suffered from the drought, but the late varieties, which are just beginning to ripen, have been benefited by the rain, and promise to be a good crop. Small fruits are plentiful, but Gooseberry bushes, in some cases, have suffered much from red-spider. *W. McDowall, Brechin Castle Gardens.*

— Apples showed abundant blossom, and are a promising and fine crop. Pears, generally, a poor crop here, are scarcer this year. Gooseberries and Currants suffered from the ravages of insects, but with timely applications of insecticides we shall have a fine crop. Strawberries have benefited by the showers of late, and are a fine crop of good quality; and fruits, on the whole, are looking well. *T. Wilson, Glamis Castle Gardens.*

KINCARDINE.—Apples as standards are a complete failure, and on walls there are but few. The Pears are also a complete failure, whilst red and white Currants are excellent in crop and quality. *J. M. Gairns, Arbuthnot House Gardens, Fordoun, N.B.*

— The crops of Apples, Pears, and Plums are the worst that I have seen for at least seven years. Last year was very cold, rainy, and sunless, and fruit did not ripen well, or attain its usual size, and the wood was quite green at pruning time, so that I quite expected a bad fruit year: many of the trees do not look at all healthy. *William Knight, Fasque, Laurencekirk.*

MID-LOTHIAN.—After such a cold wet summer and autumn as we experienced last year, a good crop of fruit could not be looked for under the ordinary conditions of our climate during the past twenty years. The rain abated towards the end of September, and although the winter was rather severe, the snow protected vegetation so much that comparatively little harm was done; and both the wood and buds of fruit trees continued to mature or ripen right through the winter. When spring came, it proved dry and warm, and fruit trees blossomed and set their crops under the most favourable conditions. No frost was registered here after the 29th of March. Most kinds of fruit set very thickly; but the long drought and the badly-ripened wood of last season combined thinned many of the thickest-set crops. Still, with the exception of Peaches and Nectarines, all kinds of hardy fruit are a good average, or over it. Insects were rather troublesome for a while, and some Gooseberries and Currants were quite destroyed by aphides and red spider; but the downpour of rain which fell on June 22 and 23, cleared most of the insect pests away, and since then there has been no renewal of the attack. As a rule, fruit trees are in vigorous health, free from insects, and already showing prominently next season's fruit-buds. Apples are generally bearing well, very few varieties not bearing an average crop, and such standard varieties as Ecklinville, Stirling Castle, Warner's King, King of the Pippins, Duchess of Oldenburg, Worcester Pearmain, Blenheim Pippin, Kerry Pippin, Keswick Codlin, Cellini, Cox's Orange Pippin, Yorkshire Greening, Northern Greening, and Tower of Glamis, are carrying excellent crops of very fine fruit. The Pears with the best crops on walls, and also as bushes and standards are Beurré de Amanlis, Beurré de Aremberg, Beurré Diel, Marie Louise, Louise Bonne of Jersey, Hacon's Incomparable, Napoleon, Williams' Bon Chrétien, and Heasle. Of Plums, Jefferson, Kirke's Early Prolific, Pond's Seedling, Victoria, and Gisborne's, have the

finest crops; but all varieties are good, and the same may be said of the Cherries, Frogmore Early, Bigarreau, Black Tartarian, Black Eagle, Napoleon, Bigarreau Early Rivers, and Morello, being the best crops. Early Peaches, such as Waterloo, Alexander, Amsden's and Hale's Early, are bearing good crops, and the two first-named are now ripe. Apricots are a splendid crop, the finest for many years. Moorpark, New Large Early, Hemskirk, Frogmore Early, and several other varieties all bearing abundantly. Since the rain came on the 22nd ult., small fruits have greatly improved, and the Gooseberries and Currants which escaped the ravages of insects in the dry weather, are bearing heavy crops of first-rate fruit. The same remarks apply to Raspberries, among which Superlative has proved worthy of its name. Strawberries got the rain just in time, and turned out first-rate, especially James Veitch, and the early variety, John Ruskin. *M. Dunn, Dalkeith.*

PERTHSHIRE.—All fruit hereabouts is three weeks earlier than in ordinary years. The Carse of Gowrie orchards promise to have an extra crop of Apples and Pears of fine size. Plums are light, owing to the protracted drought. *G. Goodfellow, The Gardens, Kinfauns Castle.*

— Apples promised well, but did not set. All small fruit suffered much for want of rain, especially late Strawberries and black Currants, and Gooseberries are not so large as they ought to be either. Apricots are large and of fine quality. Peaches promise the same. The wood of fruit trees is being ripened well for next season. *P. W. Fairgrieve, Dunkeld.*

— The fruit crop throughout is the finest we have had for many years, and quite a month earlier. *J. Lunt, Keir Gardens, Dunblane.*

AYRSHIRE.—Apples are a very thin crop; the bloom seemed to me not to have strength enough to set freely, although the weather was all that could be desired—no frost or cold winds. Pears are better, and these fruits are of a good size already. Plums are a heavy crop, and all kinds of small fruits. Insect-pests have been very destructive on all kinds of fruit trees and Roses. *W. Priest, Eglinton Gardens.*

LANARKSHIRE.—The Pear crop on Clydesdale is the most promising we have had for a number of years. Apples are swelling steadily, and promise to finish large in size. Standard Plum trees in gardens and Orchards are looking beautiful, although on dry hillsides many trees dropped their fruit at the stoning period owing to the severe drought. Gooseberries, red Currants, and Raspberries have been most abundant. Black Currants on dry soils have been a failure, also late Strawberries, especially Elton Pine. I saw whole fields of Elton Pine almost dried up for want of rain. *A. Angus, Dalziel Gardens, Motherwell, N.B.*

RENFREWSHIRE.—The fruit crops in this district are very good, with the exception of Plums; Apples and Pears are very good, both old and young trees carrying heavy crops of good-sized fruits, especially where thinned. Currants and Gooseberries good, but badly infested with caterpillar and fly for awhile. Raspberries and Strawberries are very good both for crop and quality. *F. Fulford, Eastwood Park, Giffnock.*

2. ENGLAND, N.E.

DURHAM.—The fruit crops in this neighbourhood generally are abundant, and of good quality. Apples and Plums suffered from blight in the early season, but the late rains have cleaned them, and they are now looking well. Gooseberries have suffered generally from red-spider, many trees being nearly dead, while in some places caterpillars have been very destructive; but the crop is the most abundant known for years. *John Short, Hummersknott.*

— Apples looked well considering the dry season; only 1.18 inch of rain fell in June. Such varieties as Lord Suffield have good crops, although, like most other varieties, owing to the dry weather half the fruit dropped. Of Pears, Jargonelles are above the average, while other kinds are about average. Plums do not succeed on the east coast,

and the blight also was against them this year; Victoria is the best variety that we grow. Peaches are not grown. Strawberries are a failure where grown on the limestone. Gooseberries and Currants are plentiful, and the late rains have saved the entire fruit crops; the foliage is now rapidly recovering. *R. Draper, Seaham Hall.*

NORTHUMBERLAND.—Apples Lord Suffield, Lord Grosvenor, Keswick Codlin, The Queen (an old variety here), Lane's Prince Albert, Ecklinville, and some others are very fine. The cold wet season of last year failed to ripen the wood of Peaches and Pears; with few exceptions the trees did not ripen well, consequently only few trees bearing crops. Plums in the open and on walls are splendid. Cherries full crop and good quality. Apricots required much thinning. Strawberries largely grown in this county. Garibaldi, Sir J. Paxton, President, Matron, Noble, Elton are all good in same

good and clean in this district. The long spell of dry weather has suited stone fruits, especially Apricots, which are a full month earlier in ripening. Peaches are under, but very good; I am much pleased with Waterloo for early work on outside walls. A "rider" of this variety which I obtained from Messrs. Veitch last November has carried fourteen nice fruits, ten of which have been gathered, the other four now ready. From an older tree, on the same wall, I gathered a fruit on June 24. *William Chuck, Brodsworth Hall, Doncaster.*

YORKSHIRE.—Fruit crops in this district are good indeed. Dessert Cherries on untrained trees are a sight to behold; amongst twelve good varieties planted here eighteen years ago, including Bigarreau Napoleon, Royal Duke, Knight's Early Black, and Black Circassian, are very large and excellent fruit. Of Raspberries, the best is Fillbasket. Strawberries, the strong-growing varieties have stood the drought best, viz., Noble, Paxton, President; there is nothing

as Keswick Codlin and Lord Suffield Apples, and Doyenné d'Été and one or two other early-ripening Pears. Peaches, Nectarines, and Apricots on south walls are better than usual; the roots of these are occasionally lifted in autumn, consequently they are more under the influence of the sun's warmth. Strawberries were an indifferent crop as a whole; Ne Plus Ultra, usually a good cropper, was almost barren; Noble was the best as to crop. We picked our first dish on May 26 from the open ground—fully three weeks earlier than the first picking of any Strawberry for the last twenty-one years. Gooseberries and Currants are good crops, but owing to the long period of drought, beginning early in March, the fruits were not so fine as usual, and they were ripe much sooner; and in the case of Currants, did not keep so long, being now actually all picked. We have had grand rains the past month, and the trees generally of all hardy fruits are healthy. *H. J. Clayton, Gardener, Grimston Park, Tadcaster.*

3, ENGLAND, E.

CAMBRIDGESHIRE.—The Gooseberry crops in some gardens in this quarter were an almost total failure—in others an average; but all gardens were terribly infested with red spider, so much so that acres of bushes looked and still look as though they were burned, and many pounds have been expended in dressing them, while the prices realised have been disastrous in this extreme. Many tons have not brought home 30s. per ton. Black Currants are a total failure in this district; and Raspberries only about half a crop. Apples in most gardens are good; Plums very variable. Some sorts very light, others are heavy crops. *Andrew Grant, The Vineries, Willingham.*

ESSEX.—Apples, Pears and Plums in this neighbourhood are very partial, being in some parts almost a failure, while in other parts the trees are laden with good fruit; the trees bloomed well generally, but the sharp frost we had on April 14, viz., 10°, damaged most of the blossom in the low-lying districts. Cherries a very heavy crop, particularly Morellos; Peaches, Nectarines, and Apricots very good, the latter, better than I have had for ten years. Strawberries were almost a failure, owing to the dry weather. *J. Vert, Audley End Gardens.*

— Apples, Pears, Plums, Apricots, Peaches, and Nectarines bore at first immensely heavy crops, following a wondrously fine display of bloom. Indeed, Apple orchards were a remarkable sight during the flowering season. The drought, however, commencing on February 27, and continuing, in this district, until July 7, with the exception of three very slight showers, has greatly thinned Apple and Plum crops, though very heavy crops still remain. Morello Cherries continue very heavy crops, but the fruit is small. Bush fruits suffered in size from the drought also, secondary gatherings of Strawberries and Raspberries being partially dried up. *William Earley, Ilford.*

— The only failure has been Strawberries. They have been very bad indeed. We were three months without rain, which is a most trying circumstance for a hilly district like this. *Arthur Ocock, Havering Park, Romford.*

LINCOLNSHIRE.—Apples and Pears are very small in this district. Plums are an average crop, but all the trees are very badly blighted. Strawberries were scarce and small, more especially on light land. Gooseberries are generally very good in this neighbourhood. Currants and Raspberries are very poor, and all have suffered much owing to the dry weather. *J. Rowlands, The Gardens, Bardney Manor.*

— A remarkably heavy crop of Apricots, on walls of each aspect on which they are cultivated, S., E. and W., especially S.; fruit ripening slowly. Plums a very full crop, and clean. Apples bearing abundantly, that very shy-bearer, Beas Poole, having fruited. Pears good on walls, thin or absent on pyramids—the usual result. Cherries good, Morellos very heavy. Peaches a good average,



FIG. 30.—*DENDROBIUM DENSIFLORUM*, AS GROWN BY MR. PRINSEP; FLOWERS YELLOW, WITH ORANGE LIP, SHOWING GOOD CULTURE. (SEE P. 122.)

place. Young plants of last year did not flower well. Some good crops on older plants. *George Harris, The Castle Gardens, Alnwick.*

— The fruit crops in general are far above the average of former years. The best crops since 1887. Gooseberries and Currants have in many instances suffered from the ravages of green-fly, especially the Whinham's Industry Gooseberries. *Wm. Fell & Co., Royal Seed and Nursery Establishment, Hexham.*

— This season will be remembered as the driest on record for forty years. Small fruits are good notwithstanding the drought. Raspberry Superlative is a grand variety; large handsome fruit very like Vicomtesse Strawberries, and excellent for dessert. Black, red, and white Currants, Gooseberries, and Apricots are extra fine. Apricots are quite a month earlier than usual. Apples set well, but large numbers dropped off when they were almost half grown. Trees and bushes look healthier now since the heavy rains of last week. *D. Inglis, Howick Hall.*

YORKSHIRE.—Notwithstanding the exceptionally dry season, the fruit crops, as a whole, are remarkably

to equal Noble for size and colour, but it is wanting in flavour. Peaches look well. Apricots and Plums in open shed very good. *Bailey Wadds, Birdsall Gardens.*

— The very dry weather has materially interfered with the quality of the Apple, many of the Apples having dropped in consequence. Pears blossomed very badly, and are only a poor crop. Plums are abundant throughout the district, especially Victorias. Cherries have dropped during the stoning period, but showed a very good bloom in the spring. Apricots are abundant everywhere, and the quality good. Gooseberries and Currants, both black, white, and red, are an excellent crop. Strawberries were abundant, but suffered very much from drought. *J. P. Leadbetter, The Gardens, Tranby Croft, Hull.*

— There was an abundant blossom on most kinds of hardy fruits, especially so with Apples. Owing to the dull wet season of 1892, the embryo blooms were not fully developed—at least, that is my theory to account for the thin crops of Apples and Pears as a whole. This is further proved by the ones that have good crops being early kinds, such

gathered in July. Small fruit abundant, Gooseberries particularly so—these small, owing to drought, which affected all fruit here. Strawberries, with the exception of Dr. Hogg and British Queen on west borders under average. *W. Ingram, Belvoir Castle Gardens, Grantham.*

NORFOLK.—There are good crops of nearly all kinds of fruit, particularly Apples, Apricots, Plums, and Cherries. Pears are not so good, some trees being very poor and others very plentiful. Strawberries have not been so plentiful as usual, but very fine. Red-spider, fly, and mildew have been very troublesome this year, but we have had some nice rains this week, which I hope will improve the appearance of them. *H. Batchelor, Catton Park.*

— The small fruits, although abundant, were, owing to the unusual amount of sunshine and drought, fully a month in advance of the average time of ripening, and were quickly over. The Apples and Pears are clean, and give promise of being a very good sample. Apricots and Peaches both set a very heavy crop. There has not been in this county such a drought or so much sunshine since the year 1868. *Wm. Allan, Gunton Park, Norwich.*

SUFFOLK.—The Apple crop is rather partial; King of the Pippins has a good crop; Orange Pippin, Blenheim Orange Pippin, Kerry Pippin, and Old Nonpareil are only moderate. Of kitchen Apples, Keswick and Manx Codlins, and Lord Suffield have a heavy crop, also Nonsuch and Ecklinville Pippin are large and fine. Pears are a good crop, but the fruit generally smaller than usual, owing to the very dry season; Marie Louise, Doyenné du Comice, Pitmaston Duchess, Louise Bonne of Jersey are a full crop. Strawberries have been extra plentiful and fine; British Queen and Dr. Hogg are still the best that I have seen. *Thos. Blair, Shrubland Park.*

— Speaking generally, the fruit crops in this neighbourhood are quite up to the average. Apples are plentiful, and promise to be of first-rate quality. Pears are partial. The following sorts are our best: —Beurré Diel, Beurré Giffard, Williams' Bon Chrétien, Beurré Rance, Huyshé's Prince Consort, Duchesse d'Angoulême, Winter Nelis, Zephirin Gregoire. Plums are plentiful. Cherries, both dessert and Morellos (trained trees) are thin, but the crop on standard trees was up to the average. Peaches and Nectarines are a first-rate crop, and the same remark applies to Apricots. Of small fruits, Raspberries are the best, but not so firm as usual. Gooseberries and Currants suffered much from the continued frosts in April. On our strong soil, Strawberries were plentiful and good; but on the light land the crop, which suffered very much from the drought, was almost a failure. *H. Fisher, The Gardens, Flixton Hall, Bungay.*

— The fruit crops under liberal culture and fair conditions are wonderfully good for the season. I felt compelled to put small to some of the main crops instead of good, very good or bad, as neither of these terms correctly describe Apples. Strawberries and bush fruits would have been very good and abnormally heavy had the rain fallen sooner. *D. T. Fish, Bury St. Edmunds.*

— Either from drought, or imperfect setting, or both together, large quantities of Apples have fallen from the trees; still, there will be heavy crops. Pears set less freely than Apples, and crops are more partial. Plums are heavily cropped, and appeared to need rain more than other fruit trees. Cherries have withstood the dryness better than Plums, but fruit has been small in size. Peaches and Nectarines set freely, as also did Apricots, and trees of the latter are clean and healthy, carrying a heavy crop of fruit. Small fruits have been plentiful, but undersized, with the exception of Black Currants which have been good samples. Gooseberries have suffered much from the ravages of caterpillars; and Strawberries have been neither plentiful nor good. *J. Wallis, Orwell Park, near Ipswich.*

BEDFORDSHIRE.—Apples, the early ones, are of good flavour, and ripening much earlier than usual.

Plums small, through lack of moisture in the soil; and I may say the same of Strawberries and Raspberries, which have lasted a very short time, although well watered. Gooseberries and Currants very much eaten by caterpillars. *H. W. Nutt, Flitwick, Ampthill.*

BEDFORDSHIRE.—Apples are an excellent crop. Pears on the walls and in the open very fine this season. All bush fruits are a good average crop, especially Gooseberries, and considering the dryness of the season, the bushes are making good clean growth. Strawberries promised wonderfully well in the spring, but the drought prevented many of the fruits from swelling. *G. H. Maycock, Luton Hoo, Luton.*

BUCKS.—The fruit crops, speaking generally, are fairly good in this district. All fruits are, and have been, rather under-sized, owing to the excessive drought. Of the kinds enumerated in the tabulated list, the two first, namely, Apples and Pears, are the worst; the former are much under the average; many orchard and dwarf trees are almost fruitless; green-fly has also been very troublesome. Cox's Orange Pippin, King of the Pippins, and Devonshire Quarrenden, among orchard trees, are well-cropped, while of dwarf pyramids on the Paradise stock, Ecklinville Seedling, Prince Albert, Lord Grosvenor, Potts' Seedling, Winter Hawthornden, Bismarck, and Cox's Orange Pippin are equally good. Pears on walls are thin, the best being Williams' Bon Chrétien, Pitmaston Duchess, and Seckle. Orchard trees of Williams' Bon Chrétien and Beurré de Capiaumont are heavily cropped; they escaped the frost which destroyed the blossom on the dwarf pyramids of these latter; Beurré Diel, Doyenné du Comice, Glou Morceau, Williams' Bon Chrétien, Louise Bonne of Jersey, and Madame Treve are carrying about half a crop. Plums are, in all instances, a heavy crop. Cherries, Peaches, Nectarines, and Apricots are also good crops. Bush fruits very abundant. Strawberries a fair crop, but rather under usual size. From north borders we are still gathering medium-sized fruits of Oxonian and Elton Pine. Filberts a good crop; cobs thin. *Chas. Herrin, Dropmore, Maidenhead.*

— The prolonged season of drought has not only been detrimental in its effects at the roots of fruit trees, it has moreover tended to foster the growth of insect pests. The green and black fly prevail enormously in some parts, and that terrible pest the red-spider literally covers the leaves of the trees in places, so much so, that the quantity of the fruit must certainly be somewhat affected by-and-by. The Cherry crops in this district have been enormous, and the fruit all that could be desired; scarcely any damage to be found in the way of cracking or otherwise. *S. G. Miles, Wycombe Abbey.*

— Apples abundant and good where watered and mulched, and the fruit thinned in time, both on pyramids and espaliers. Pears required thinning twice over on espalier trees, and the fruit is clean and good; but on pyramids the fruit is very thin. Plums a very light crop on close-clay land. Apricots on walls a very heavy crop of fair fruit. Gooseberries, red, white, and black Currants unusually heavy crops. Caterpillars, never seen in this immediate locality before, very troublesome. *J. Jaques, Waddesdon, Aylesbury.*

— The crops of Apples and Plums, including Damsons, are very large in this neighbourhood; the Apples are fairly clean, but Plums are blighted, and Filberts more so than ever I saw them. Among small fruits, Gooseberries, and black and red Currants, have been good and plentiful. Strawberries were soon over. We have been unfortunate in having had but few showers since early in March. *J. W. Shrimpton Aston Clinton, Tring.*

— The Apple crop is much over average, and very early. Wall fruit is early and abundant. Nuts and Walnuts both very heavy crops. Strawberries were ripe in the open air by the middle of May, and the first gatherings were large and fine; others were soon over. We began gathering Rivers' Early Prolific Plum on the 6th from bush trees in the open garden, the earliest date on record here. *J. Smith, Mentmore.*

4, MIDLAND COUNTIES.

CHESHIRE.—All kinds of fruit trees gave an abundant promise of a fruitful year, but the drought brought a lot of maggot and aphides, which completely crippled the bloom trees. The Codlin varieties of Apples are carrying good heavy crops, but late sorts are rather short. Pears are under average and poor; fair crops of Damsons are few and far between. All small fruits are good with the exception of Black Currants; Gooseberries and Strawberries very good. *J. V. Smith, Arley Hall Gardens, Northwich.*

— Apples are a very good crop, and the quality is good. They are also unusually early. Pears are about an average crop: Jargonelle, Louise Bonne, and Marie Louise are all bearing well as standards. Plums have suffered a good deal from fly, and are thin crops. The same may be said of Cherries. Peaches and Nectarines are not much grown outside here, though there is no doubt they would have succeeded well this year. Gooseberries are an immense crop. Red Currants are good, but black Currants have suffered from the dry weather, and in many places in this county the crop is ruined by the mite. Raspberries have been good, but the dry hot weather has ripened the fruit rapidly. Strawberries have been good. Noble as an early sort is useful, though the flavour is very indifferent. As a main-crop Strawberry President has been very good. From young runners of last year were gathered some fruit that weighed 1½ oz. each. Potatoes have been unusually early and good. *Robert Mackellar, Abney Hall, Cheadle.*

— There was abundance of bloom on fruit trees in most cases, but unfortunately, as so often happens at the critical time of the fruit-setting, there was a long period of hot dry days, and cold nights, which encouraged the growth of aphides and other insects, and was unfavourable to the healthy formation of the young fruit. The foliage at first rather unhealthy, has much improved, and now looks fresh and green, and seems uninjured by the long-continued hot and dry weather. *Wm. Whitaker, Crewe Hall, Crewe.*

HERTFORDSHIRE.—The Apple crop in this district is a very partial one, trees in sheltered places having an abundant crop of fruit, whilst others are very much under the average. A few of the favourite varieties are doing well, viz., Blenheim Orange and Cox's Orange, and King of the Pippins. Pears were badly damaged by the frost on April 17, most of the bloom being killed. *C. E. Martin, The Hoo Gardens, Welwyn.*

— Strawberries set more than average crop, but failed to swell off through drought. In low-lying districts the frosts in April did much damage to Apple blossom, and destroyed the chances of a crop in many instances. Either through drought or an imperfect set, or both combined, a great deal of the fruit has fallen from trees of most kinds of Apples; but this self-thinning is rather beneficial to the trees, whereas with us the trees are heavily laden with fruit. This is the second time only in twenty-five years that I can write of our fruit crops being so uniformly good. *J. Kipling, Knebworth.*

— Apples are below average, and at the present time small; blossom was most abundant, but very weak, owing to the unusual warmth and parching winds prevalent at the flowering season; consequently, a large proportion did not set. Pears on walls are more promising; they were protected when in blossom, and have been copiously watered. Plum trees on walls have good crops, but the fruit is also very small. Cherries the same. Strawberries, a medium crop, and small, and fully three weeks earlier than last year. We are suffering very seriously from long-continued drought. Our total rainfall since March 3 has not exceeded 1½ inch. *E. Hill, Tring Park, Tring.*

— Apples set well, many have fallen through the drought and the damage done by the caterpillars, which were unusually numerous this spring. Pears are a full average on pyramid and bush trees, but on the walls they are under. All stone fruit are over

the average, Cherries are exceptionally heavy crop, and of good quality, have suffered much from green and black aphids. *G. Norman, Hatfield House.*

NOTTINGHAMSHIRE.—We rarely ever saw a fuller lot of bloom on all sorts of fruits, but cold dry east winds continued all the time, more especially when Apricots, Apples, and Pears were in bloom; on examining, they looked to be a good set, but when they should have started to swell, quantities dropped off. *A. Henderson, Thoresby, Ollerton.*

OXFORDSHIRE.—Fruit crop good all round, with the exception of Cherries, which were much subject to black-fly. The trees are clean and healthy, owing in a great measure, to our good supply of water. As showing the earliness of the present season, Waterloo Peaches were gathered on June 22; Doyenné d'Été Pears on June 26 Citron des Carmes Pears on June 30, and Beurré Giffard on July 10. The Strawberry crop although good was of short duration. Laxton's Noble and President withstood the dry weather best. Peaches and Nectarines wonderfully good, every tree having a full crop. Plums, Rivers' Early Favourite, Rivers' Early Prolific were gathered on July 10; Apples, White Juneating on June 29, Gladstone and Red Juneating on July 5. *Geo. Stanton, Park Place, Henley-on-Thames.*

RUTLANDSHIRE.—Apples and Pears flowered most abundantly, but failed to set a heavy crop. Strawberries and Raspberries have been very small from the same reason. Bush fruits have cropped heavily, and swelled off to a good size. Alexander Peach was ripe here on a south wall on June 28, quite three weeks sooner than usual. *W. H. Divers, Ketton Hall Gardens, Stamford.*

SHROPSHIRE.—We planted over 100 Apple trees two years ago, and now they are heavily loaded with nice clean fruit. We had to prop several branches, Duchess of Oldenburg never fails to give a good crop here, and many other good varieties are very satisfactory. What a mistake it is that so many hesitate to plant reliable fruit trees. We see many old cankered trees very unsatisfactory. *Neil Sinclair, Park Hall Gardens, Oswestry.*

— This, I imagine, will be a good fruit year, although Apples are falling, leaf and fruit, to an alarming extent, and unless rain comes soon, they must be small. The above remarks are applicable to Pears. Plums on walls are plentiful, not so on standards, and Damsons hereabouts have been sadly blighted with aphids, and now red-spider is playing havoc amongst them, and also on most Apple trees. Gooseberries have sold at 1d. per quart. *A. S. Kemp, Broadway, Shifnal.*

— Considering the unusual dryness of the season, fruit crops are looking remarkably well in this district. Apricots and Plums against walls required much thinning, and in a lesser degree Pears, which in all cases except cordons, which are thin, are carrying full crops, both against walls and in the open. Apples are no exception—nearly all trees require thinning. All kinds of trees are healthy, and since the rains have swelled their fruits rapidly. Altogether, I think the season most favourable for out and indoor fruit. *S. Backhouse, Onslow Hall, Shrewsbury.*

STAFFORDSHIRE.—This year, without exception, is the most fruitful season we have had at Alton Towers the last twenty-five years. Every kind of fruit is most abundant and excellent. All kinds of vegetables are the same; and, although we have suffered somewhat from want of rain, being on a cool red sandstone soil, everything looks well. Our flower-garden is quite a blaze of bloom, and never looked better. Of course, we have watered copiously. *T. H. Rabone, Alton Towers.*

WARWICKSHIRE.—This season the fruit trees showed abundance of bloom, but owing to the drought, blight, and east wind, have not done as well as first anticipated. Apples have a good average crop, noticeable among which is the King of the Pippins, which still retains its popularity for being

a good cropper. *J. Ward, Aston Hall, Sutton Coldfield, Birmingham.*

WARWICKSHIRE.—Apples are a fair crop, and the quality good with us, but I hear of them dropping in the uplands on account of the long drought. Pears are not so good in quality, caterpillar having done considerable damage. Damsons are a full crop, but the trees are infested with red-spider, which will hurt the quality of the fruit. Cherries were very small. Small fruits abundant. As to Apricots, never have I seen such a crop these twenty years; scarcely one damaged, nearly all clean, and trees in robust health, notwithstanding the very heavy crop they are bearing. *James Rodger, The Gardens, Charlecote, Warwick.*

— Fruits of all kinds are rather small in size. In this district Plums are the crop of the season, trees of a great many varieties being heavily laden with fruit; Victoria, Early Favourite, Early Prolific, and Magnum Bonum being especially notable in this respect. Early varieties of Pears, such as Jargonelle, Clapp's Favourite, and Williams' Bon Chrétien are carrying enormous crops, fruit on late varieties being less abundant. Apples were an unusually heavy crop, but the continued drought caused many of the fruits to drop. Small fruits have suffered very much from the ravages of caterpillars. *Gardener, Warwick.*

5. SOUTHERN COUNTIES.

BERKSHIRE.—I have sent you my comparative survey, which, as a whole, I think, is a correct one for this district. Apples are erratic, some trees loaded, others bearing scarcely any, and all the fruit small at present. My Irish Peach and Gladstone are nil; Pay-the-Rent, Wellington, Cox's Orange Pippin, and Wheeler's Russet varieties more than make up for the early mentioned sorts; and I have a fair produce of Keswick Codlin as my favourite early cookers. Doyenné d'Été Pear a good crop, now in use, with Williams' Bon Chrétien, Beurré de Clairgeau, and Marie Louise the best croppers, amongst others, all on standards. If water had been at easy command, and fully taken advantage of, as very fortunately it has been with me, I have no doubt the small fruits could have been made to tell a different tale, as mine have been simply enormous. Water, nets, and labour have been "the man," as Beau Brummel observed of his shirt-collars or cravats. *Robt. Fenn.*

— All the crops have suffered from drought; consequently, fruits of all sorts are small. Since March 5 the total rainfall here was 1.73 in. Watering has been persistently carried on to an enormous extent through fire-hose; but, although thousands of tons have been applied, this does not compensate for practically no rain. There was an excellent show for fruit all round, and though 10° of frost on April 14 thinned the bloom considerably, there would have been good crops had the season been favourable. Strawberries have been fine, fruit firm, and travelled well—very early. First, La Grosse Sucrée were gathered outside, May 21; and I am able now (July 12) to pick a few pounds daily of Waterloo. Of bush-fruit, Gooseberries and Black Currants are very thin crops. Red and white Currants and Raspberries, fair crops. Cherries plentiful, but not large. Black-fly and maggots are very troublesome. *Owen Thomas, Royal Gardens, Windsor.*

— The fruit crop in this district is somewhat disappointing in comparison to the early prospect in spring, great quantities of Apples having fallen owing to the drought. Pears are a light crop, and generally small. Ne Plus Meuris, that with us generally bears well, is quite barren. Strawberries, Raspberries, and all small fruits much smaller than usual. Walnuts are a failure, but Cobs plentiful. *J. Howard, Benham Park Gardens.*

— Apples here and in this district, although an average crop, are very small in size, in consequence of the lack of moisture in the soil. Pears, on the other hand, have withstood the dry weather better, the crop being an average one, and the fruit exceptionally clean. Of Plums, Victoria is the heaviest crop, both on walls and orchard standards.

Apricots are a very heavy crop, and they ripened satisfactorily. Peaches and Nectarines are also good crops, and the trees are very healthy. Figs are the best crop I have ever known out-of-doors. Cherries, both dessert and Morello, have been abundant and good, but black aphids was unusually troublesome early in the season. Raspberries and bush fruits have also been good. Strawberries, although quickly over in open quarters, gave abundance of fruit, Sir Joseph Paxton being especially fine. Both Walnuts and Cobs are very heavy crops. *T. Turton, The Gardens, Maiden Erlegh, Reading.*

DORSET.—The fruits in this neighbourhood are generally very good, free from blight, with the exception of Cherries—but when the blight was removed, by heavy syringings, these fruits ripened very satisfactorily. Peaches attacked a little with mildew, but dusting the leaves with sulphur has had excellent effects; and, generally, fruit is more satisfactory than was at one time expected. *Jas. Beck, Criche Gardens, Wimborne.*

— The fruit crops in this district, with the exception of Pears and Plums, are very satisfactory. Cherries are carrying unusually heavy crops, and are very fine. Small fruits and Strawberries have been very good, but suffered greatly from the long drought and insect pests. *W. G. Pragnell, Castle Gardens, Sherborne.*

— Apples, on the whole, will be a very good crop, notwithstanding a considerable quantity fell from the trees in a small state, which I thought was from maggot; but, after examining them, conclude it was from the drought. Marie Louise, Williams' Bon Chrétien, Glou Moreau, Madame Treyve, Beurré Diel, and Beurré Rance Pears have heavy crops. Morello Cherries are very good indeed. Strawberries very light crop, small, owing to drought, and soon over. Nuts, Walnuts, especially good. *Thos. Denny, Down House Gardens, Blandford.*

HAMPSHIRE.—Strawberries are largely grown in this district; and, in spite of the excessive drought, the crop has been a good one. Prices have ruled high, making in all a good season for growers for market. Apples are a heavy crop, almost without exception; the fruit promises to be small owing to continued drought. Plums are an exceptionally heavy crop. Pears better than usual in this neighbourhood. Peaches and Nectarines are without exception carrying heavy crops; the recent hot weather having just suited these fruits where attention in the way of watering has been freely bestowed on the trees. *E. Molyneux, Swanmore Park Gardens, Bishop's Waltham.*

— Owing to the dry season, fruit generally will be small, unless time has been found to keep the trees copiously supplied with water. Apples bloomed early and well, but the hot dry weather seemed to dry off the blossom prematurely, owing to seemingly insufficient time to accomplish fertilisation. Old standard kinds, such as London Pippin, Blenheim's, Goldwell's Keeper, Deux Ans, King of Pippins, and Cellini, are carrying good crops. Pears are small, except where water has been applied freely. Peaches and Nectarines are good, and trees wonderfully clean and healthy. Apricots seemed to set every bloom, and required heavy thinning. Strawberries were very small and inferior. Bush fruits not good. Gooseberries infested badly with spider, many of the trees dying. Plums abundant and good; the same remark applies to Cherries, except early kinds, which suffered from the late frosts. *A. Maxim, Heckfield Gardens, Winchester.*

— Apples in this neighbourhood are very good. Pears not more than an average crop, fruit good. Peaches good. Plums are carrying heavy crops; Victoria, Monarch, Archduke, Prince Englebert, and Braby's Green Gage are the best. Apricots are the heaviest crop we have had for several years. Strawberries, fruit small, and a very short season, except where there was a plentiful supply of water. Gooseberries and Currants not more than half a crop, and fruit small. *J. Bowerman, Hackwood Park, Basingstoke.*

— The Apple a most abundant crop, the heaviest that I ever remember, fruit the largest and the

earliest for many years, the trees clean and healthy. Pears good crop, fruit large and very early, and the trees clean and healthy, and making good growth. Plums most abundant crop and very early; trees blighted. Peaches splendid crop, fruits good, trees clean and healthy, and very early. Strawberries good crop, very early, and the crop soon over for want of rain. Raspberries good crop, but small for want of rain. Gooseberries and Currants most abundant crop, very early and good; trees much blighted. All kinds of fruit are good crops, and very early. *W. Smythe, The Gardens, Basing Park, Alton.*

KENT.—It is a matter of general comment that all fruit crops have never been better. Cherry-growers have reaped a grand harvest; and where this fruit will do, and given a good season, this is one of the most profitable to grow. Fruit trees themselves look better than one would expect under the trying drought, but aphid is becoming very troublesome again. Perhaps, what is suffering most is the Hops. *Geo. Woodward, Barham Court Gardens, Maidstone.*

— Apart from the long-continued spell of drought, the fruit crop generally may be said to be good. Soft fruits were plentiful, but quickly over, especially Strawberries. Apples are very good, but many have fallen. Peaches, Nectarines, and Apricots very heavy crops; and Nuts never more abundant, the clusters being exceptionally fine. All trees were early attacked by vermin, but with repeated washings they are now healthy and clean. Heavy showers of rain or waterings are needed to swell out the fruit, especially on walls. All fruits are fully three weeks earlier this year. *H. Markham, Mereworth Castle, Maidstone.*

MIDDLESEX.—Apple trees blossomed very abundantly and strong, and the bloom set remarkably well, and the fruit held on well till the prolonged and excessive drought began to tell on them, when they fell very badly, ten times as many under the trees as on them. Pear trees blossomed and set well, and have not felt the dry weather like the Apples, and are now holding on well, although the fruit is smaller than usual. Plum trees blossomed well, but the blooms did not set. Cherries set well, and being in a shady position here, have done well. Peaches, although bloom was plentiful, did not set very well, a few very sharp frosts occurring about the time of setting. *A. J. Ballhatchet, Fulham Palace, S.W.*

— The Apple and Pear crops in this district are very thin, although there was abundance of bloom and a heavy set, but owing to the drought the fruits dropped badly. The best Apples are Manx Codlin (Alfreton very good), Lord Derby, Lord Grosvenor, Warner's King, Worcester Pearmain, King of Pippins, and Kerry Pippin; the best Pears being Williams' Bon Chrétien, Beurré Bachelier, Louise Bonne of Jersey, and Duchesse d'Angoulême. Plums are a failure, except on cordons. Of Cherries, Morellos are excellent. Peaches (Hale's Early, Grosse Mignonne, and Royal George) are fruiting freely. The best Nectarine this year is Lord Napier. Apricots set an enormous crop; some of the early kinds were ripe by the first week in July. Small fruits were much affected by drought. *Geo. Wythes, Syon Gardens, Brentford.*

SURREY.—The fruit crop in this district may be said to be a first-rate one. Of bush fruits I have never seen better. Strawberries very plentiful and good, but deficient in weight compared with other seasons. Pears are plentiful and clear, and varieties that are not good always, as Glout Morceau; Winter Nellis and some of the Bergamots are fully developed. Since the rain, which amounts to nearly 2 inches, the fruit is swelling fast. Apples are plentiful, but seem to have suffered very much for want of moisture. Plums are a very heavy crop, notwithstanding the two previous heavy crops; the theory of one heavy crop in three must now be considered exploded. My conviction is, that if trees get plenty of moisture at the roots when the strain is carrying their crops of fruit, they will mature the buds for the next year. *A. Evans, Lythe Hill.*

SURREY.—The early varieties of kitchen Apples are the heaviest croppers this season, such as Lord Suffield and the Codlins. Dessert Apples, Court of Wick, Cox's Orange Pippin, King of the Pippins, Margil, Braddick's Nonpareil, have good clean fruits. Pears are light in most cases. Plums very heavy crop, requiring much thinning of fruits. Peaches too have good crops, and very early; Waterloo and Alexander quite fit for table. *James Friend, Rooknest Gardens, Godstone.*

— After repeated waterings and mulchings of good farmyard-manure, our Strawberry crop turned out splendidly; fruit large, plentiful, luscious, and the flavour all that could be desired, Laxton's Noble being especially noticeable. The first fruits were ripe on May 16. All other fruits abundant, but suffered from lack of rain. *J. F. McLeod, Dover House Gardens, Roehampton.*

— In this district fruit seems to be of quite an average crop. In the many places where trees are sheltered Apples are heavily laden. Pears are more partial, some varieties, as Williams' Bon Chrétien, Marie Louise, Louise Bonne of Jersey, and Beurré Clairgeau are carrying heavy crops. Peaches and Nectarines I have never seen set more freely, and Apricots are fully up to average. *G. B. Baskett, Eashing Park.*

— Apple crops in gardens and orchards are below the average, but some sorts have a good crop. Fletcher's Seedling is one of the best that I know of. Stirling Castle has a fair crop. Pears on walls are a fair crop, but in the open air much under average. *T. Osman, Ottershaw Park Gardens, Chertsey.*

— Apples are good where the trees were mulched and watered, otherwise the fruit is small; on chalk soils the trees are infested with red-spider. Pears on heavy soils look well, but on the chalk the trees look pale, and the fruit is small. In many gardens the trees were infested with white and black aphid, but since the rain came, trees of all kinds are looking better. Strawberries on the chalk were, in many places, a complete failure. *C. Papworth, Caterham.*

— The varieties of Apples which are cropping well are Prince Albert, Peasgood's Nonsuch, Lord Derby, Ecklinville, Dumelow's Seedling, Grenadier, Lord Suffield, Lord Grosvenor, Stirling Castle, Cox's Orange, Kerry and Blenheim Orange Pippins, and Brownlee's Russet. Fruit trees, especially Plum and Cherry, have been smothered with black-fly. *C. J. Salter, Woodhatch Lodge Gardens, Reigate.*

SUSSEX.—Pears Beurré Superfin, Clairgeau, Marie Louise, Pitmaston Duchess, Duchesse d'Angoulême, Louise Bonne, and Bon Chrétien are carrying heavy crops. I never saw the fruit and trees look so healthy and clean. *E. Burberry, Castle Gardens, Arundel.*

— The fruit crop in this district, with the exception of Pears, is one of the most abundant that I can remember. Some of the late kinds of Pears are very short, owing, no doubt, to the severe frost during April, for on the 13th, 14th, and 15th of that month we registered 13°, 11°, and 13° Fah. respectively. Apricots were ripe on July 8; Cherries, May 25; and Plums, July 10. *H. C. Princep, Buxted Park, Uckfield.*

WILTSHIRE.—The profusion of blossom with which all kinds of fruit trees were clothed in spring gave promise of the fruit crop for 1893 being a most abundant one; but, alas! the frosts which we experienced every night during the last fortnight in March (varying from 6° to 14° every night), had the effect of reducing this fair prospect, as regards non-protected Pear and Plum trees, to a minimum; and the uniformly dry and excessively hot weather which prevailed in March and three following months had a like effect upon the Apple crop. The trees, through their roots having sucked up all the moisture from the soil, a general flagging of the sheets of blossom took place, except in the case of trees in low-lying districts, with their roots close to the water-line, and while in this flabby unresisting

state, were nearly all burnt up by the sun's rays; and this semi-tropical weather continuing, the majority of the fruit which then set dropped off the trees later on. Protected trees of the Apricot, Peach, Nectarine, and Green-Gage Plum set most abundant crops, and the first three mentioned had to be severely thinned. The following varieties of the Apple (espalier-trained) in the kitchen gardens are bearing heavy crops of clean fruit, namely, Emperor Alexander, Stirling Castle, Keswick Codlin (always a sure cropper), Early Nonpareil, Northern Greening, Worcester Pearmain, and Mr. Gladstone, two highly-coloured Apples. Cherries and bush fruit very plentiful. *H. W. Ward, Longford Castle, Salisbury.*

(To be continued.)

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

FIGS.—The first fruits now ripening, there is every possibility of getting a second crop ripened this season; thin off quite three-fourths of the fruits that are showing, leaving the largest and those best placed. Check any gross growths by pinching, and tie-in only those for which there is sufficient room.

ORCHARD FRUITS.—Now that the more pressing work of summer-pruning has received attention, advantage should be taken of the present somewhat quiet period to go over trees, the interior of which were thinned of spray and other branches last winter, and from which numerous shoots will have grown. These should be cleanly removed with a sharp knife, and if it be done now, there is less risk of other shoots growing from their base than would be the case if left till winter.

FRUIT ROOM.—The earliest opportunity must now be taken to clean and get this ready for the reception of the earliest Pears and Apples, as when once gathering commences, it is difficult to give the necessary cleansing. With the introduction during recent years of so many imposing-looking varieties of Apples and Pears, the gardener should take special care to make the fruit-room as interesting as possible to any who may visit it during the winter months. Should the walls and ceiling require to be whitened, it should be done, and afterwards with soap and water to wipe over the shelves. Last autumn, when doing this work, I had the posts and facing of the shelves stained and varnished, the smell of which soon passed off, by leaving windows and doors open for a few days. The object was to be the better able to keep it clean, the varnished parts requiring only to be wiped down occasionally with a damp cloth. The posts and fronts of the shelves, originally square, I had chamfered some time before. The shelves may be covered with sheets of stout brown paper, which prevents the air from passing up among the fruit through the open-work shelves; and should a decayed fruit escape notice, by being left clear, it soon dries up.

PEARS IN SEASON.—Owing to the plague of wasps, Jargonelle, Windsor, and Beurré Giffard Pears now beginning to ripen must be closely watched, and gathered, if possible, before the wasps attack them. Continue to destroy wasp's nests, and to trap the insects. Besides the trap, made by placing two hand-lights, one on the top of the other, as described in a former calendar, have recourse also to the beer and sugar traps, formed of moderately wide-mouthed bottles, which should be about half filled. Put the bottles a few yards from trees where fruit is ripening, and they will allure the wasps from the fruit. Large numbers may be got rid of in this manner.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

LÆLIA DAYANA AND L. PRÆSTANS.—These species are at this season growing away freely, and should be well supplied with water. They do best if grown in shallow baskets, with very little material about their roots, crocks and sphagnum moss being what they chiefly require. There is then not much fear of over-doing them with water if they are healthy, a point which is applicable to Orchids generally. We grow these two species with the *Miltonia vexillaria*, where they are afforded fresh air, and moisture abundantly; and the syringe is freely employed. *Sophranitis grandiflora*, which do

well in this house, are hung up close to the roof in shallow pans, with nothing more than living sphagnum moss about the roots.

CHYSIS BRACESCENS AND **C. AUREA**, having now finished flowering, should be potted or top-dressed; and the flowers, coming with the new growths, the latter must be well encouraged with a warm moist atmosphere. Our plants of these species are accommodated in the Dendrobium-house; and peat and sphagnum moss, and well-drained pots are employed for them.

HINTS ON CYPRIPEDIUMS.—The varieties and species *C. Parishii*, *C. lævigatum*, *C. bellatulum*, *C. niveum*, *C. concolor*, *C. Godefroyæ*, or any others having thick leaves, do not require so much water at the root as other Cypripediums. The leaves of the first two have much substance, and being sappy, they contain a reserve of moisture which is available for the plants during a dry time. I place the plants with fleshy leaves on the north side of the Dendrobium-house, potting them in equal parts of peat, loam, sphagnum moss, and a good proportion of clean crocks and silver-sand. To moisten them, they are doused in a tub of water, and never watered overhead; one watering in a fortnight is sufficient for their needs, and care must be taken that it does not lodge in the growths. I have seen *C. lævigatum* nearly killed with watering because the grower was advised that all the Cypripediums required plenty of heat and water. A warm, moist atmosphere is what the plants require. In regard to *C. bellatulum*, *C. niveum*, *C. concolor*, and *C. Godefroyæ*, they are more successfully grown when they are kept on the dry side, dipping them up to the rims in a tub of water, but allowing no water to lodge in the heart of the growths, this tending to loss of leaves, and eventually the death of the plant. Our *C. bellatulums* are potted in Kentish loam and crocks, and this compost suits the others, such as *C. niveum* *concolor* and *C. Godefroyæ*. These species we grow in a small span-roofed house on the northern side close up to the glass, the plants liking subdued light, but not a glare. Water Cypripedium *villosum* and *C. Boxalli* very sparingly, and grow them along with *C. insigne* at the warmer part of the Odontoglossum-house. *C. insigne*, by growing in different temperatures, and having a good number of the plants, will afford flowers during a long season; it is a plant that is at home in almost any of the houses. *C. insigne montanum* and *C. exul* are fine additions to this type. I pot the *insignes* in equal parts of peat and loam, with clean crocks and sharp silver sand. A number of *C. insigne* crosses and varieties succeed in an intermediate-house.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

CHRYSANTHEMUMS.—Careful attention must now be given to the training, watering, and cleaning of these plants, the shoots being tied-in from time to time, but not too close up to the young points, or they will be broken off with the wind and rain, and it is safest to afford them from 6 to 8 inches in length. Continue to remove laterals by pinching them out with the finger and thumb, and take care not to break the principal leaves whilst manipulating the plants. Suckers should be removed, using the handle of a budding-knife in doing this, and not breaking the roots. Afford water in abundance when the plants require water at the roots; and allow plants in large pots to get fairly dry before affording water, and then a thorough soaking should follow. Manure in some form should be supplied twice, and this should be varied from time to time. Farmyard manure-water in a much diluted form may be afforded; and to be sure it is not too powerful, try it first on a plant or two, diluting it for the one and not for the other. I use it at about one-half manure-water and one-half clean water. Soot-water in a clear state may be given once a fortnight, and sometimes cowdung-water, but never use water at any time in a turbid state. If plants have a yellow look, and do not grow away, a teaspoonful of sulphate of ammonia or nitrate of soda will help them if the drainage is right, and a smaller quantity to plants in 6 or 8-inch pots. Some fine soil should first be sprinkled over the surface to protect the top-roots from contact with the manure. Earwigs abound this season, and must be destroyed, or they will injure the young shoots and buds. Search for them night and morning at the points of the shoots; also invert small flower-pots stuffed with hay or moss, these act as good traps for earwigs. When emptying the pots into a bucketful of water, give the moss, &c., a twist

round the pots. Green or black aphid may be destroyed with tobacco-powder or quassia-chips solution applied by means of a syringe. For getting rid of mildew, dust the foliage with sulphur, or syringe with sulphur-in-water mixture. Cuttings that were put into 6-inch pots towards the end of June should be placed in the open as soon as possible, sprinkling them often with a fine-rose watering-pot to prevent flagging. They must be staked and tied at the same time.

SMILAX ASPERA, **S. MAURITANICA**, and other varieties, will now require attention; they are very useful in the winter months for cutting for table-decoration, and are best planted in a bed of loam and leaf-soil, the shoots being trained on pieces of string up to the roof. The points of the shoots do not bear handling, and if they do but touch the string they will run alone. In large pots they succeed pretty well. The flowers are sweet-scented. When kept clean, the plant furnishes yards of greenery for furnishing purposes.

NEPENTHES.—Among interesting and beautiful plants for growing in baskets in the moist foliage-house, *N. distillatoria*, *N. sanguinea*, and their numerous hybrids, take high rank. The plants grow well in a temperature of from 65° to 85° during the summer, and 60° to 70° in the winter, in baskets filled with fibrous peat and sphagnum-moss, in about equal parts, to which should be added some fertilising moss or other manure, in moderate quantities. They are rather subject to be infested with thrips, and require copious syringing to rid them of these pests, and abundance of water during the summer, but not so much during the winter—but they must not be allowed to get dry even at that season.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

PINES.—The advice often given regarding the watering of Pine-apple plants, is to afford them plenty of water, but this, in certain cases, is misleading, as Pines at any season require much less water than many other species of plants, because, being plunged, they do not require half so much water as plants standing on a stage. Now that the nights are longer, water will be needed in still less quantity, and only when it is certain that the soil is getting too dry. What causes the brown and debilitated appearance of Pine-apple plants at the end of the autumn is the sodden state of the soil, owing to the frequent applications of water, made worse, perhaps, by lack of bottom-heat. Too much bottom-heat is another cause. The injury to Pines by affording water too often, is more tardy when they are planted out in beds. Allowing Pine suckers to remain out of the soil till they have become dry is destructive to their vitality, and much time is thus lost in growing them into rooted plants.

VINES.—The canes of Vines grown in pots for early fruiting, should now be matured, and when the rind is brown, the canes firm, and the leaves dropping off, they may be removed to a place where they are shaded by a wall or hedge, and the pots laid on their sides. Canes still immature, should be kept dry at the roots, and in a dryish atmosphere, with air circulating through the house. Fire-heat may be necessary in northern parts to mature the fruit buds, but the leaves must not be forced off by too severe root drying, nor by allowing red-spider or thrips to infest them. Pot Vines for decorative purposes late in the season should not be forced into rest prematurely, as they may start into growth before the proper time; but the laterals should be well pinched in and the canes exposed to light and air. The syringe may be used with some force amongst them several times a week, and an insecticide should be employed against red-spider.

ORCHARD-HOUSES.—Water at the roots must be withheld to a great extent when fruit begins to ripen, but the foliage should not droop. The lateral shoots should be reduced so as to allow sun and air to reach the fruit, and manure-water will now be little needed, and then only to aid late fruits to swell to their full size. As soon as the fruits are removed from the trees, wash the latter with the garden engine, and ascertain what is the state of the soil as regards moisture. Plants which have already been removed to the open air must not become dust-dry, and the pots may be plunged in ashes to shield the roots from the sun.

MELONS.—Some gardeners plant Melons up to the second week of August, so as to have fruit to the end of the year; and I am about to plant some in pots for this purpose. The soil should have no

manure mixed with it at this season, and growth depends rather on liquid manure afforded when the fruits are swelling. Although late Melons cannot have high flavour, the fruits serve a useful purpose at dessert if Pine-apples are not cultivated.

STRAWBERRIES.—Frequent attention is now necessary to keep the roots from growing out of the pots, rubbing them off as soon as they can be seen, picking off runners, and keeping the surface of the soil stirred.

THE FLOWER GARDEN.

By T. H. CRASP.

ROSE-BUDDING.—With the showery weather of the past week, Rose-budding should have been pushed on with, the rind running freely with the accession of sap. When Rose-budding is finished, the ground between the Briars should be hoed, and, if necessary, the weeds raked out, and a neat appearance given to the quarter.

THE FLOWER BEDS.—The rain will have started numerous weeds into growth amongst the bedding plants, and these should also be carefully hoed amongst when the surface is dry enough not to clog the tool. Pelargoniums are seeding very freely this year, and the seed-vessels should be removed at short intervals, not necessarily sacrificing the whole truss for a few seed-vessels in the middle. To leave the seed to mature would spoil the successional blooming of the plants. Attention should be given to pegging-down Petunias, Verbenas, Calceolarias, *amplexicaulis*, Ivy-leaved Pelargoniums, &c., which are growing very freely. The carpet-bedding plants, *Pyrethrum Golden Feather*, *Mentha pulgium*, *Alternanthera*, and others of low growth, should be clipped, or pinched with the finger and thumb, and arranged so as to bring out a distinct pattern, and afford at the same time light to the centres of the plants, causing them to have a better appearance, and assume their true colour, however uniformly green they may now appear. The soil in vases and window-boxes will now be full of roots, and waterings occasionally with liquid-manure—say, once or twice a week—will be beneficial; or where that may not be convenient to apply, a mulching of good light rich soil will serve the same purpose.

THE RESERVE GARDEN.—Double-flowered Daisies, and such of the Polyanthus as may not have been lifted this season, should be taken up forthwith, divided, and replanted. Recently-sown seeds of *Myosotis*, *Silene*, *Saponaria*, and the seeds of biennials generally, if not germinating properly, should be supplemented by fresh sowings. The seed of Sweet William may still be sown. Seedling perennials of all sorts should be transplanted, when large enough to handle, into nursery beds for one season, and afterwards transferred to the borders, &c., where they will flower; for when small plants are shifted at once from the seed-beds into the borders, they are liable to become smothered with stronger and established neighbours. Sufficient space should be left in the rows of plants to enable the hoe to be used. *Rhododendrons* and other shrubs which may have suffered from drought should still receive heavy root-waterings, and these with the rain will tend to their full recovery.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

THE SOWING OF CABBAGE-SEED.—In the southern counties, the main lot of Cabbage-seed should now be sown, and the rains having sufficiently moistened the soil, the seed will readily germinate. I usually make one sowing at the end of the present month, and another about the middle of the month of August; the seed, if sown earlier than this, will produce plants that are apt to become too large before the ground is ready for planting. I prefer to plant on the ground which has been cropped with Onions, as if such has been well-manured and deeply-dug, there will be no further need of manure in any form after the plants are put out. One of the secrets of Cabbage-growing is to start well, and to enable the gardener to do this, the plants should not remain longer in the seed-bed after they are sufficiently large for planting, and that is one reason why the seed should not be sown too early.

TOMATOS.—The growth of the plants since the rains having become strong, the points of the leading shoots may be removed, if a good set has been obtained. If mildew be present on the leaves, dust them with flowers-of-sulphur. Tomatos in the open must be kept securely tied to the stakes, and superfluous growths removed.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

SATURDAY, AUG. 5—Dundee Horticultural Association.

SHOW.

SATURDAY, AUG. 5 { Southampton Horticultural Society's Show (two days).

SALES.

TUESDAY, AUG. 1 { Sale of Greenhouse Plants, &c., at Woodside Nursery, North Finchley, by Protheroe & Morris.

FRIDAY, AUG. 4 { Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63° 2.

Phloxes at Chiswick.

The trial bed of Phloxes at Chiswick is well worth seeing, the plants having considerably improved since the recent rains. Among scarlets or salmon-scarlets, Etna and Albert Crousse are very brilliant; Adonis is a flower of good form, and white flushed with salmon-pink; Prof. Briquet is a good carmine; Eugenia Dangervillers is of pale lilac, and very free. But of the several varieties we may have to speak more fully later on. The herbaceous Phloxes are derived from the interbreeding of two or three species found wild in the eastern United States from Pennsylvania to Florida. *P. paniculata*, according to ASA GRAY, has unspotted stems, lanceolate leaves tapering at the base, broad pyramidal panicles with awn-pointed sepals; *P. maculata* has spotted stems, leaves rounded at the base, narrow panicles, acute, but not awn-pointed sepals; *P. glaberrima* has linear-lanceolate leaves, very smooth, unless at the margins, tapering gradually to a point, cymes few-flowered, calyx-teeth very sharp-pointed; *P. suffruticosa*, a native of the Southern United States, is stated to be only a variety of *P. glaberrima*. The glabrescence or hairiness of the stem is so variable that no reliance is placed upon it by ASA GRAY. In cultivation, however, the distinction seems a good one, and the range of colours in the flowers is different in the two cases. *P. decussata* of gardens has, it appears, no separate existence as a wild plant, but is a blend of *P. maculata* and *P. paniculata*. Gardeners and raisers have succeeded in completely breaking down the distinctions relied on by botanists, a circumstance which is highly inconvenient, no doubt, to those who have to note and classify, but which is of the greatest possible interest to those desirous of ascertaining what the real lineage and relationship of garden plants generally is. It is not to be expected that the

man of business will, as he thinks, waste his time upon such matters, but it is one of the main functions of a Society like the Horticultural to collect, sift, and record all available evidence.

In reference to this matter, we may suggest that another season a conference or conferences should be held at Chiswick on the plants grown for trial, whatever they may be. Take Phloxes, for instance: supposing them to be selected for a third trial, let notice be given of the fact, and let botanists and raisers be told in advance of what is intended to be done; let them be requested to gather, condense, and communicate all available evidence—cultural, æsthetic, and botanical, so as to have it ready to be laid before the Society, at the time when the illustrative specimens in the trial quarters may be expected to be at their best. It is true, there have been many conferences at Chiswick, and we hope there will be many more, for they have comprised much of the best work the Society has ever done. But not sufficient pains have yet been taken to bring the Conferences into direct relation with the annual trials, and to utilise the object lessons so afforded. Again, when it may not be convenient or desirable to meet at Chiswick, why should not out specimens or pot plants, be brought to the Westminster meetings illustrative of the trials made in the garden, as, indeed, was done in the case of Apricots last Tuesday, and why should not means be taken to explain to the Fellows present the objects and general results of the trials, leaving the more detailed and systematic record to be inserted in the Journal of the Society? In this way the vital educational importance of the experimental garden might be brought home to the Fellows, the majority of whom under present circumstances know little about the garden, to the expenses of which they contribute.

We add from ASA GRAY'S *Synoptical Flora*, vol. i., part ii., the synonymy of the three principal species of Phlox above referred to:—

PHLOX PANICULATA:

Syn. *P. undulata*
cordata
acuminata
corymbosa
scabra
Sickmanni
decussata.

P. MACULATA:

Syn. *P. pyramidalis*
reflexa
penduliflora
var. candida
suaveolens
tardiflora
longiflora.
decussata

P. GLABERRIMA:

Syn. *P. revoluta*
var. *suffruticosa*
= *P. nitida*
Carolina
triflora
carnea.

CHISWICK.—In the Royal Horticultural Society's Gardens, Chiswick, in addition to the Phloxes, above mentioned, tuberous and hybrid Begonias growing in beds in the open are now coming into bloom. Violas, of which there is a very large collection grown here, are still laden with flowers. The collection of Fuchsias present a lovely appearance in one of the houses. Cannas cultivated under glass form an interesting feature, and are very attractive. The Grapes in the conservatory and in other houses are bearing, as usual, heavy crops of good fruit. Tomatos are grown extensively under glass, but some are sadly infested with fungi of various kinds, and some are commencing to ripen in the open. All the best varieties are grown, thus affording a good opportunity for observation to those interested in their culture.

PROFESSOR THOMAS MEEHAN.—The citizens of Philadelphia, on July 4, presented Prof. MEEHAN, a born Englishman and a well-known botanist and eminent horticulturist, with a handsome silver plaque, in grateful acknowledgment of his services to the municipality, and specially for his efforts to promote the health and pleasure of his fellow-citizens by the securing of parks and open-spaces in the great city of brotherly love. The ceremonies attending the presentation took place almost immediately after the Fourth of July oration of SHELDON POTTER, Esq. A few opening remarks on the esteem in which Prof. MEEHAN was held by his fellow members in the municipal legislature were made by Select Councilman W. FINDLAY BROWN, and then CHARLES S. KEYSER, Esq., gave a brief account of the movement for more small parks, and Prof. MEEHAN's connection with it:—

"Since Mr. MEEHAN's work began, an increase of park acreage for the city of more than 244 acres, has been obtained, and all but twelve wards are now provided with at least one breathing spot—which parks, while not all are yet opened, are still on the city plans. Of all this work, of this extension of the original purpose of the founder, THOMAS MEEHAN is the acknowledged head. When his work in Councils began, there were, says the *Public Ledger*, but the original squares laid out by WILLIAM PENN and a few others, not more than a dozen in all, and for the remainder which make up the nearly forty now on the city plan, Philadelphia is indebted to the noble work of Mr. MEEHAN. Looking back on the extraordinary spectacle of a man elected and re-elected for a decade of years, by the consent—nay, by the urgent desire—of the leaders of all parties and factions, pursuing steadily a work for which he was both fitted by his good judgment and by his avocations, with the results before us, we must first and most singly honour him in this connection, and testify to the obligations we, his fellow-citizens, are under to him."

In reply to the address, Prof. MEEHAN said:—

"I felt early in my youth that life was not worth living unless some good could be done to humanity, and there was some good work to do. I tried ever to keep before me these lines: 'When there is a noble deed to be done, and we are able to do it, we need no other heaven,' and in all my life-work I think I may, without vanity, say, I never thought of thanks or reward. Indeed, I now feel that this beautiful work of art is not intended as a reward, but is only an evidence of appreciation of my efforts. Thinking that, I feel encouraged to go on, for my work is by no means done. Providence has been very kind in giving me health and strength until within a comparatively short period. Now I feel that the sere and yellow leaf of autumnal life is falling about me, but I am cheered by the thought that the good work in behalf of small parks will still go on. I feel further, that what has been done here to-day for me is not an honour, but a pledge of support, and so feeling I will continue on to the end, and do what I can for the help of my fellow-man."

RAILWAY RATES AND CHARGES FOR FRUIT, ETC.—The Select Committee of the House of Commons on Railway Rates and Charges sat again on Tuesday, July 11, under the presidency of Mr. SHAW-LEFEBVRE, First Commissioner of Works. Mr. BERRY, a farmer and fruit grower in Kent, was one of the witnesses examined. He said he represented the Fruit-Growers' Association, and they had hoped that a stimulus would be given to fruit-growing by reduced railway charges in consequence of the new classification by the Board of Trade. In this, however, they had been disappointed. The North of England was now supplied with fruit by Kent. The trade began twenty years ago, when the Great Northern Railway Company agreed to put one coach for fruit on the mail every night. The rate then agreed upon was 4s. a cwt., and this was considered very heavy. Now, instead of one coach, there were two special train-loads on each of the great railway lines to the North, and the charge was 4s. 3d. per cwt., except in the case of large consignments, on which reductions were allowed. This rate was calculated from a group of stations in Kent to a group of stations in Lancashire, of which Manchester and Liverpool were the chief. The extra 3d. per cwt. was put on at the beginning



VIEW IN THE GARDENS AT TRING PARK.

of this year. There had been no reductions whatever in the rates for fruit to London, but there had been a reduction in hard fruit and Gooseberries by goods trains from Selling, in Kent, to Manchester of 1s. 2d. per ton. The Fruit Growers' Association was of opinion that the Railway Commission was of no use as a tribunal to the traders. In spite of high rates the fruit trade was increasing; but if it was encouraged by a low rate, farmers and landowners, who did not know what to grow, would increase the acreage under fruit very largely.

EDINBURGH BOTANICAL SOCIETY.—A meeting of the Edinburgh Botanical Society was held on Thursday, July 13, in the Royal Botanic Garden, Dr. WILLIAM CRAIG presiding. Mr. R. LINDSAY, Curator, communicated his monthly report on the temperature and vegetation at the Royal Botanic Garden. The past month, he said, was remarkable for the excessive heat and dryness which prevailed. A heavy fall of rain took place on the 23rd of the month, after which all danger from drought was at an end. The lowest reading of the thermometer during June was 40°, which was registered on the 2nd of the month. On the night of the 16th the thermometer did not fall below 62°. The lowest dry day temperature was 50°, on the 23rd; and the highest 89°, on the 18th of the month. Hardy herbaceous plants flowered freely, and the earlier flowering kinds had ripened their seeds abundantly. In the rock garden, fewer plants came into flower than in any June during the last eleven years. In all 294 species and varieties came into flower during the month. A number of interesting plants from the Botanic Garden were exhibited. Among these was a specimen of the Azolla in fruit. It was stated that this was the first time the plant had been seen in fruit in Great Britain.

CARNATIONS.—Mr. MARTIN SMITH's endeavours to bring the Carnation into prominence as a border flower is worthy of great praise. We do not appreciate the refined substance, elegant form, and delicate colouring of the show-board flowers less, but we admire the more the border-flower of hardy constitution and free-flowering quality. Moreover, Mr. MARTIN SMITH's mode of putting up his flowers must surely be the death-warrant of the absurd card-board collars, on which it is still considered the correct thing, by the more conservative florists, to exhibit their cut blooms. The collars have gone from the pot-plants, laughed at out of existence; and if they are no longer necessary for them, they are no longer required for the cut blooms. Nor are receptacles of the ginger-beer-bottle type quite the most elegant and effective that could be devised. Mr. SMITH's plan of showing the flowers in bunches is so much more attractive, that we do not despair even of seeing the florists' varieties so treated, at least in part, for individual blooms must always be shown side by side for purposes of comparison.

"THE JOURNAL OF MYCOLOGY."—This is an official publication of the division of vegetable pathology of the United States Department of Agriculture, and devoted solely to the study of fungi in their relation to plant-diseases, and edited by the chief of the division and his assistants, nine in number. Such a staff of experts and such a publication fills us with shame and apprehension—shame that we have not in this country a single establishment, nor a single expert even, devoted especially to vegetable pathology, and this in spite of the enormous commercial interests at stake in this country; apprehension that we may be (indeed, we are) distanced in the search for knowledge by all the greater nations of the civilised world. The present publication is invaluable to students, but it is not right, as is done in the record of literary notices, to assign unsigned articles in a journal to particular individuals. The "Editor" is a composite being, the mouthpiece of his contributors, but not in all cases, or necessarily, expressing any opinion of his own.

THE CAPE EVERLASTING-FLOWER TRADE.—The species most valued as a trade "everlasting" is

says Prof. McOWAN, in the *Cape Agricultural Journal*, *Helichrysum vestitum*. Shipments of some other species have, however, been made, but irregularly and in small quantity. Their use is chiefly local, in the manufacture of wreaths, bouquets, and fancy articles generally. Perhaps the one most sought after, and most often advanced to the dignity of export, is *Helichrysum fruticans*; then follow the red strawberry-headed *Helipterum eximium*, and colour varieties of *Helichrysum felinum*. *H. sesamoides* gives two colours—white and lemon-yellow; *H. stellatum*, several pink shades. *H. canescens*, a deeper pink, and *H. speciosissimum*, an almost dead white; *H. variegatum* is brown and white. The strongly radiating heads of *Phœnocomma prolifera* are also used as a substitute for *H. canescens*. Of late years large quantities of the elegant panicles of *Restiacea* have been exported, and particularly those of *Elegia propinqua*, *E. verticillaris*, *Thamnochortus fruticosus*, *T. imbricatus*, *T. dichotomus*, and *Cannomois virgata*. Customs returns of this flower export for 1890-1892 show:—

EVERLASTINGS.			
1890.—134,007 lb.—	Value declared,	£4,006	0 0
1891—125,105 lb.—	ditto	4,918	0 0
1892.—228,450 lb.—	ditto	12,055	0 0
DRIED GRASSES—i.e., <i>Restiacea</i> .			
1890.—Nil ...	...	£0	0 0
1891.—46,478 lb. ...	...	710	0 0
1892.—46,566 lb. ...	...	683	0 0

FREDERICK LAW OLDMSTED, LL.D.—Gardening was recently honoured, says *Garden and Forest*, in a manner which we believe is without a precedent. On the same day the two foremost universities of America, Harvard and Yale, conferred upon FREDERICK LAW OLDMSTED the degree of Doctor of Laws in recognition of his creative genius as a landscape-gardener, which in all parts of the country has continuously impressed itself upon American civilization from the day, forty years ago, when his conception of the Central Park, New York, marked a distinct era in the formation of great urban parks, until the celebration of the four-hundredth anniversary of the discovery of America, offered him the opportunity to show to the world assembled at Chicago the possibilities of his art in a work which of its kind has never been equalled in beauty or convenience. Harvard further honoured herself in placing upon her roll of honorary Masters of Arts the name of HORATIO HOLLIS HUNNEWELL, in recognition of his attainments in horticulture, which he has practised with singular success for more than half a century, and which he has advanced by his own knowledge and example, and by his generous and enlightened support of every effort which has been undertaken in his time in this country to increase the knowledge of plants and the love of cultivating them. Academic recognition of this character, we may add, is of far higher value in such cases, and much more appropriate than are the titles given by the State to politicians as a reward for party services, or to men of business merely because they have been successful in amassing wealth. The two American Universities have followed the lead of their older sisters in England, and it is not long since Trinity College, Dublin, conferred the honorary degree of M.A. on a distinguished gardener, Mr. BURBIDGE, the author of one of the most useful books in the gardeners' library, *Cultivated Plants, their Propagation and Improvement*.

COTTAGE AND ALLOTMENT GARDENS.—It is reported that the Countess of CARLISLE, who takes a deep interest in all movements having for their objects the improvement of the social condition of the people, has fixed eight as the number of hours mechanics and labourers should work per day on the Castle Howard estate; and, it is added, that as garden allotments are much in vogue on this estate, it is only to be expected that the new rule will tend towards their increased popularity. Some significance attaches to this statement from the fact, that on the occasion of a recent examination of a number of cottage gardens in East Berkshire, with a view of awarding prizes, grievous signs of neglect were visible in many of them; and the remark of the wife was common, "My husband has so little time to

attend to the garden." It is only in the spring and summer evenings that a "little time" can be devoted to the garden—too little to do it justice. Many cottage gardens are much too large—altogether beyond the capacities of the tenant to properly till them; and they become, as was too frequently seen on the occasion referred to, deserts of weeds. It is impossible for a labourer to obtain the necessary manure with which to dress a large plot of ground, even if he had the time to do it thoroughly. Some of the best crops were seen where a pig was kept, but a hog-sty was the exception, not the rule. Lessened gardens, and more time to cultivate them with advantage, are requirements in many country districts.

CHAFFEY BROS., LTD.—At a recent meeting of the London Advisory Board of the Australian Irrigation Colonies (CHAFFEY BROTHERS, Limited), consisting of Lord KNUTSFORD, Mr. MITCHELL HENRY, and Mr. J. E. MATTHEW VINCENT, held at the offices, Queen Victoria Street, E.C., Lord KNUTSFORD being in the chair, reports exhibiting the progress of these settlements on the River Murray, in Victoria, South Australia, were presented by the chief commissioner, Mr. J. E. M. VINCENT. The reports were in all respects favourable as regards the growth and increasing productiveness of the fruit orchards generally, the output this year being estimated at several hundred tons, although the plantations are still in their very early stages of remunerativeness. It was mentioned that one planter, Lord RANFURLY, would consign some 4000 cases of Oranges and Lemons to the English and other markets. It was further stated that arrangements were being made in this country and elsewhere for the formation of several cultivating companies for dealing with blocks of 5000 acres and upwards, with the view of the more rapid development of the settlements in the early future. These companies would engage in the production of oil, wine, brandy, dried fruit, and other staple articles of commerce which can be produced at the irrigation settlements in great abundance and excellence. The work which is being done at the Irrigation Colonies, in the opinion of the chairman, was one of essential value to the future prosperity of Australia. It is confidently believed that, by means of irrigation, the lands bounding the Murray will maintain an immense population, and be productive of enormous wealth to those concerned in the valuable productive industries which are now so successfully established.

FRANKFURT.—Dr. MOEBIUS has been appointed Director of the Botanic Garden.

NARCISSUS EXHIBITION IN BIRMINGHAM.—The Council of the Birmingham Botanical Society purposed holding an extensive exhibition of Narcissus in April last, but owing to the season being such an early one, the date fixed upon proved to be too late, and there was but a scanty display of these lovely spring flowers. With a view to still further popularise the Narcissus in the Midland Counties, the Council of the Society have determined to hold another exhibition in their gardens at Edgbaston, Birmingham, on Wednesday and Thursday, April 18 and 19, 1894.

ATHENS.—Dr. SPYRIDON MILIAKARIS has been appointed Professor of Botany in the University of Athens.

SPECIAL PRIZES FOR A DISPLAY OF FLORAL DECORATION have been decided upon by the committee of the great Shrewsbury floral fête, in connection with their annual exhibition in August next, as will be seen by their advertisement last week, with a 1st prize of £5, and a 3-guinea Gold Medal for the best display in a space 10 by 4 feet. This will prove an additional attractive feature at this great exhibition.

POT PLANTS.—All gardeners are familiar with the way in which the roots press themselves up against the inside of the pot, away from the soil. It would seem as if those roots so placed could derive relatively little advantage from the soil in the centre of the pot, while at the circumference there is little or no food at all. To overcome this, M. SACS

smears the inside of the pot with a paste composed of 100 parts of gypsum (plaster of Paris), with 1 part each of saltpetre (potassic nitrate), magnesian sulphate, calcic phosphate, and sulphate of iron—all finely powdered, and then mixed into a paste with water. The results are stated to have been very satisfactory.

HYBRIDISATION.—Mr. W. ENGELMANN, Leipzig (WILLIAMS & NORGATE, London), has published a reprint of KÖLREUTER'S account of his experiments and observations on the sexuality of plants published originally in 1761, under the title of *Vorläufige Nachricht von Einigen das Geschlecht der Pflanzen betreffenden Versuchen und Beobachtungen*. FAIRCHILD, a nurseryman of Hoxton was the first to produce a hybrid plant, but KÖLREUTER was the first as SACHS says (*History of Botany*, p. 407), to investigate the question scientifically and thoroughly. As the book is published at the cost of a few shillings, many will be glad to possess a classical book of such importance.

"L'HORTICULTURE FRANCAISE."—In this handsome treatise, M. CH. BALTET has published the address which he gave at the Trocadero in 1889, on the occasion of the International Exhibition. It deals with the progress of horticulture in France from 1789, and is enriched with portraits and other illustrations. Horticulture owes so much to French genius and enterprise, that many will be glad to read in M. BALTET'S pages a summary account of the salient points in the history of horticulture in France, and brief notices of the leading spirits from ANDRÉ THOUIN, the VILMORINS, and many famous raisers of the past, to DUCHATRE, and NAUDIN, and ALPHAND, in our own times. We have little doubt that, sooner or later, a reprint will be called for, which will afford the opportunity for compiling an index, and perhaps of supplying certain omissions in the enumeration of famous garden-botanists.

PRODUCTION OF TUBERS WITHIN THE POTATO.—This not unusual occurrence has been investigated by Mr. A. B. RENDLE, who gives his results in the current number of the *Journal of Botany*. He shows that the tubers are formed at the base of a shoot, the upper part of which has been injured or destroyed. The nutritive matter which should have been devoted to the production and growth of the shoot or "chit" is now failing its proper use, devoted to the production of adventitious buds.

COSTA RICA.—MM. DURAND and PITTIER contribute to the *Bulletin of the Royal Botanical Society of Belgium*, 1892, an account of the Flora of Costa Rica, preceded by an historical sketch, in which the labours of WARSEWICZ are alluded to. His herbarium is at Berlin, but loses much of its value by reason of the nearly complete absence of indication as to the localities where particular specimens were collected. WENDLAND'S researches are also epitomised.

SISAL HEMP.—Referring to the culture of Sisal Hemp in Havana, it is stated in a recent report that limited attempts have been made to introduce this branch of industry, but up to date no profits have been derived from it, for want of special attention. In and about the port of Nuevitas more than 1800 acres have been planted close to the seashore, of the very best appearance and quality. Now that the plants have attained full growth, there seems to be no doubt but that the industry could be made a thriving one if some capital were invested in proper machinery to obtain the fibre, which is of remarkable strength, length, and whiteness.

ARTISTIC GARDENS IN JAPAN.—The *Studio* for July 15 has an illustrated article on this subject. The general nature of Japanese gardens has often been described and illustrated in these columns, and Mr. JAMES H. VEITCH'S articles on the subject now in course of publication will keep the matter fresh in the reader's mind. Mr. CHARLES HOLME, in the article to which we refer, points out how art is applied to the every-day wants of the people. So far as gardens go, while there is much that our

European taste would condemn, there is much, on the other hand from which we might derive profit, particularly in the arrangement of small gardens. We are not alluding to such childish efforts as the reproduction of Fusi Yama in a bowl or on a tea-tray, but to the skilful disposition of shrubs, the arrangement of color-effects, and the treatment of paths. We commend to the notice of designers who have to deal with the thousands of oblong patches in the suburbs of our great towns, the manner in which the Japanese "glorify their back-yards," to use an expression of the writer before us. The excessive pruning and distortion of trees and shrubs, on the other hand, is a barbarism as bad, or worse, than the cockney's rockwork, and on a par with certain of the ridiculous "ex libris" plates given in the same number of the *Studio*.

ARCHITECTS AND LANDSCAPE GARDENERS.—Readers of the *Gardeners' Chronicle* will remember sundry books, the production of well-known architects, which appeared not long since and held the landscape-gardener and his ways up to ridicule. It was abundantly evident that the architects in question were not competent to act as instructors on matters of landscape-gardening any more than garden-designers, as a class, would be likely to be good house-planners. So far as design goes that requires an artist, and he may be architect, or he may be a gardener. A church recently erected in a western suburb from the plans of one of the scoffers we have alluded to, certainly invites criticism. The west front consists of a huge recessed window, itself finely designed, but propped up on crutches, as if already the foundations had given way. Beneath this window is a ridiculously small doorway such as might be suitable for a vestry-door or a priest's entrance, but unfit for the passage of a large congregation. This door, by the way, is nearly, if not quite the only means of exit, and would be dangerously inadequate in case of accident or panic. Flanking the great window are two tiny embattled towers, quite out of proportion to the building, and up which a well-proportioned bell-ringer might have a difficulty in passing with comfort. Poking through the roof on either side is an arcade extending the whole length of the building, and broken here and there by small pepper-box turrets, useless we imagine except for decorative purposes. The whole building seems to be a travesty of the Gothic of the late Tudor period as it was about to pass into the Renaissance. Those landscape-gardeners who may happen to see it (it is at Ealing) are not likely to feel much distressed at the criticisms of such a designer on productions outside his own specialty.

THE SEASON.—A remarkable illustration of the effect of the season on Roses is cited by Mr. C. J. GRAHAM in the *Gardeners' Magazine*. He states that the number of blooms staged this year at the National Rose Society's show at the Crystal Palace was 4674, as contrasted with 7100 last year. The number, indeed, is more than enough to see comfortably, it is the falling off in quality that is to be regretted.

DOUBLE FLOWERS.—Much has been written concerning the "reason why" of the production of double flowers, and various methods have been described whereby the cultivator may make himself tolerably sure of a certain percentage of the desired form. The occurrence of a few cases to the contrary does not invalidate a general statement, but it is always well to chronicle them for future reference. Accordingly, we note that Messrs. WATKINS, SIMPSON & Co. of the Strand, have kindly forwarded us a Stock, the lower branches of which bear double flowers, whilst the central and upper branches have single flowers only.

WEATHER-PROOF PAINT.—On the northern coasts of Norway, the dwellings and outhouses are coated with paint mixed with cod-liver oil instead of linseed oil, and universally the inhabitants declare that it is better proof against the weather, and carries a more varnished appearance than the latter. The ordinary brown cod-liver oil is purchased for 13 pf. (about 1½d.) per litre, as against

about 55 pf. (= sixpence three and a-half farthings) for linseed oil. A Mr. ENDEBLE, in Germany, made an experiment with this oil on a wooden house, the work being carried out during moist, cool weather, at the end of October and beginning of November. For two coats of paint, there were consumed for 2100 square ells of surface, 100 litres of oil. The first coat dried very rapidly into the wood-work, which had been painted the last time fifteen years previously; the second one dried in about one week. The paint used was prepared in the following proportions:—To 120 parts cod-liver oil, there were put 20 parts turpentine, 200 parts white-lead, 13 of yellow-ochre, and 3 of fluid driers. The first coat of paint was made rather more oily than the second. In the fifteen months which have elapsed, the experience of the Norwegians concerning the paint has been supported. *Illustrierte Nützlicher Blätter, Vienna.*

NEW BORDER PICOTEE, LOTTIE KIRLEW.—Mr. G. HOLMES, Haxby Road, York, sends flowers of a very beautiful Picotee, with yellow ground, flaked, and edged with bright rose—not a regular florists' flower, but highly pleasing, all the same. It has much-branched flower-stems, and is vigorous in growth.

JOHNSON'S "GARDENERS' DICTIONARY."—The new edition of this serviceable publication, produced under the superintendence of Mr. C. H. WRIGHT and Mr. DEWAR, is making steady progress. If less ambitious in its aim than some other publications of a similar nature, it has the advantage of being cheaper and more compact, whilst the reputation of the Editors affords a guarantee that the work will be carefully revised and brought up to date. Messrs. BELL & SONS are the publishers.

CLIVEIA MINIATA VAR. MISS ALICE RODIGAS.—A fine variety, raised by M. FORTEL of Ghent, and remarkable for its finely-formed flowers, of an orange colour, overlaid with vermillion, which extends even into the tube, which consequently displays less yellow than usual. *Cliveia miniata*, we are reminded, was introduced by Messrs. LEE of Hammersmith in 1854, since which time much progress has been made, and the flower, in a horticultural sense, greatly improved. The present variety is figured in the *Illustration Horticole*, t. 177.

DAMPING OF CHRYSANTHEMUMS.—A writer in the *Illustration Horticole* gives an accurate account of the phenomenon, and attributes it to various causes, one of which is the indiscreet use of artificial manure, such as sulphate of ammonia. We believe, however, that a fungus is the real source of the mischief, and the ammoniacal manure would be very much to its taste, no doubt.

ERNST ENDER.—The Curator of the Imperial Botanic Garden at St. Petersburg did not long outlive his Director, Dr. VON REGEL. Mr. ENDER, who was in his 56th year, died suddenly on April 16.

CATTLEA LEOPOLDI.—Mr. BULL kindly sends us a flower in which the three sepals are in their ordinary condition, and there are three petals—one median in position, but with the coloration peculiar to a lateral petal, and two lateral petals in the guise of lips. The column has three stamens, probably representing one of the outer and two of the inner whorl, thus:—a 1, A 1, a 2, of the Darwinian notation.

CANADA.—Canadian correspondence shows that the Dominion has come out bravely at Chicago—a fact which those who remember the magnificent display she made at the Indo-Colonial Exhibition a few years ago will not be surprised at. The Apple crop this year is likely to be deficient.

"DICTIONNAIRE PRATIQUE D'HORTICULTURE."—This, which is a French translation of NICHOLSON'S *Dictionary of Gardening*, is progressing steadily, its parts being published by O. DOIN, 8, Place de l'Odéon, Paris, and by Messrs. VILMORIN, ANDRIEUX & Co. It is not only a translation, but contains much additional matter, and many new illustrations. To those who read French the work will be a great boon.

LADY GARDENERS.—The general aspects of the question relating to gardening by ladies whom circumstances may have bereft of sufficient means to obtain anything beyond bare subsistence, have often been discussed in these columns; and the success of the attempt questioned. At the same time, if those who engage in commercial horticulture have a modicum of Miss HURRIMAN's gardening expertness, business capacity, and especially her optimism, they could scarcely fail to obtain some addition to their modest incomes. This lady, who engages in gardening pursuits herself, and has several small concerns in Derbyshire, Hertfordshire, and elsewhere, gave a lecture at the Earl's Court Exhibition, on Saturday, July 22, on the way in which a living could be got by a combination of Tomato, Cucumber and Apple growing as the chief industries. As regards the question of co-operation, she would only advise it in the case of tried and trusted friends; but in the case of sisters, or mother and daughters starting such an enterprise, a successful business ought, she said, to "run" easily. The capital required may be from £300 to £500 to cover the expenses of building a cottage and Tomato-house, and of stocking the ground, &c. Half an acre of land is enough, at least as a beginning, and it should be near a high road. All the details respecting the preparation of the soil, planting, and choice of fruit trees were gone into, and the lecturer showed how every bit of the ground could be made use of. It is, however, only in very exceptional cases, in our opinion, that commercial success is likely to be obtained by lady gardeners. These lectures will be continued on Saturday afternoons in the lecture hall at Earl's Court.

MIDDLESBROUGH FLORAL AND INDUSTRIAL SHOW.—The show held at Middlesbrough on Wednesday, July 19, was one of the best that the Society has held; fortunately the weather continued fine, and the show did not end as the shows of 1891 and 1892 did, in disaster. The exhibits were of excellent quality and of a comprehensive character. Compared with former shows in regard to the number and quality of the entries, it exhibits distinct advances, besides the fact that it took eight large marquees to display the exhibits. Altogether there were 2000 entries.

WATER EXCURSION.—A party of about ninety, principally comprised of *employees* at the Royal Nurseries, Slough, and their wives, had a very pleasant trip up the Thames on Wednesday, July 19.

FIRE AT CHERKLEY COURT.—We greatly regret to announce that on Wednesday last, during a thunder-storm, Cherkley Court, on Leatherhead Downs, the mansion of Mr. ABRAHAM DIXON, was set on fire by lightning, while the family were at lunch. A considerable portion of the mansion was destroyed. The water supply was indifferent. The valuable paintings and other costly articles acquired by Mr. Dixon during his varied and extensive travels were saved by people from the surrounding districts who flocked to the scene.

THE FESTIVAL OF FLOWERS AND LABOUR.—The Sixth National Co-operative Festival will be held on Saturday, August 19, at the Crystal Palace. The Flower Show will probably be as large as ever, notwithstanding the adverse season. The co-partnership exhibition of goods from workshops in which the workers share profits and management, will be extended, as several new and interesting societies will take part. Then there are the children's sports, athletic sports for members of co-operative societies, a contest of choirs; and a new feature, comprising a general muster on the terrace, for short speeches on co-operative subjects.

PUBLICATIONS RECEIVED.—*Relatorio sobre Trabalhos do Jardim Botânico Rio de Janeiro*, por J. BARBOSA RODRIGUES, Director; Report of the Botanic Garden, Rio de Janeiro.—*Vellozia, Contribuições do Museo Botânico do Amazonas*. In this publication, several numbers of which are before us the Director, J. BARBOSA RODRIGUES describes and figures numerous new species of Passifloraceæ, Palms, Orchids, &c., to

some of which we may refer on a future occasion. —*Enumeratio Plantarum in Horto Botanico Fluminense (Rio de Janeiro) cultarum*. Although the establishment has been founded ninety years, it has been treated mainly as a pleasure garden, containing a large number of plants, but of few species, and those not representative nor classified. Now, the Director, M. J. BARBOSA RODRIGUES, enumerates more than 1500 flowering plants, and 151 species of Ferns.—*Tropical Gardening in British Guiana*, by JOHN F. WABY, Demerara. (Argosy Press.)

PLANT PORTRAITS.

CARYODENDRON JANEIRENSE (EUPHORBACEÆ), Barb. Rod., *Plantas Novas no Jardim Botânico do Rio de Janeiro*, ii.

COMARUM PALUSTRE, *Mechan's Monthly*, July.

HEMANTHUS COCCINEUS, *Garden*, July 15, with a review of the species from a cultivator's point of view, by "W. W."

RHODODENDRON HYBRIDUM VICTOR CHABRON.—A variety with flowers of a rich crimson, with bold foliage. It flowers late. It was raised by M. Fortie, of Ghent. *Illustration Horticole*, t. 178.

SEBANIA PAULENSIS, Barbosa Rodrigues, *Plant. Nov. Jard. Bot. Rio de Janeiro*, ii.

VANDA TRICOLOR WALLICHII, *Revue Horticole*, July 16.

TRING PARK, HERTFORDSHIRE.

[SEE SUPPLEMENTARY ILLUSTRATION.]

As if by magic, the recent rains have caused the gardens and pleasure grounds of the Right Hon. Lord Rothschild, to assume their wonted fresh and bright appearance; indeed, thanks to the unremitting exertions of his gardener, Mr. E. Hill, not even the protracted season of drought through which we have passed, has at any time produced any ill effects beyond the browning of the grass, but the maintenance of the gardens up to anything like their average standard during such a time must necessarily have entailed an enormous amount of labour. Each year fresh improvements are carried out in the gardens, and still the lofty old trees which here assume such an elegant and informal habit of growth, remain untouched, cool shady walks being formed beneath them which serve to link the modern gardens which are here and there arranged; the passage from the natural sylvan glade to the complete and beautiful modern garden being in each case in the nature of an agreeable surprise.

Each of these little gardens is complete in itself; once entered, the whole comes under the eye in an instant, but nothing is seen of the gardens beyond, for each of these separate designs is encircled by an irregular bank, planted with rare Conifers and shrubs, faced with flowering plants, Lilies, and Roses, and in all cases with as many annual or perennial sweet-scented flowering plants as possible.

The first of these beautiful nooks we entered had in the centre a large bed of purple Clematis, trained low, and with the scarlet-flowered Lobelia cardinalis planted among it, their brilliant heads overtopping the purple Clematis. It had a broad edging of Vinca minor. Around the centre, arranged in geometrical order on the verdant lawn, are beds of brilliant scarlet and of yellow-flowered Begonias; of Viola mixed with silver Pelargoniums, and other charming combinations, each bed, as a rule, having but one or two kinds of plants in it, and each has a suitable edging. Around the sides are splendid specimens of Golden Yews and Golden Queen Hollies, grown in standard manner, each being planted in a round bed filled with flowers to harmonise with the general design. The front of the encircling raised shrubbery is planted with Abies pumila, and here and there are fine specimen trees, some of which are historical, and notably the original plant of Cupressus Lawsoniana lutea, which is now over 20 feet in height, of a clear bright yellow, and perfect in shape.

Another of these charming little gardens is planted chiefly with sub-tropical plants, a specimen tree of

some rare species being in the centre of each bed, and having the usual surrounding of fragrant flowers backed by rare Conifers, and flowering shrubs rising high enough to isolate the little retreat. Here Cedrus atlantica glauca, and some of the glaucous Abies assume an almost blue tint; a specimen of Rhus Cotinus is a pretty object; the bushes of Olearia Haastii, with snowy-white flowers; and the brilliant yellow of the Golden Yews, of which large numbers are planted with telling effect, and surpassingly beautiful.

Among the beds, the flowering Cannas are handsome in foliage and bright in flower; the early-flowering Dahlias are effective, the old Salvia patens makes beds of the prettiest blue imaginable, and the yellow Marguerites, white Nicotiana, Sweet Peas, and other flowers, are very judiciously placed. At one end is a more formal arrangement of clipped Box and flat-topped Junipers, and beyond, a little golden garden of Cupressus Lawsoniana lutea and other golden variegated trees, with Clematis Jackmanni planted beneath, and a fine bed of crimson Begonias in the centre. Other pretty arrangements are planted at various points, each one a study in itself; and around the mansion are some beds of brilliant Pelargoniums, &c., and everywhere the smooth, short greensward, and hard, well-kept gravel-walks, receive as much attention as the flowers, for nothing must be untidy or out of place at Tring Park; the gardens seem always in holiday garb.

Glancing over the fine expanse of pleasure-ground we note a large number of kangaroos, as well as Emus, and other foreign birds, which are quite at home, and breed freely at Tring Park, where natural history, as well as gardening, finds an enthusiastic patron in the Hon. Walter Rothschild, whose museum in the grounds has now a world-wide reputation.

In the fruit department there are grand crops of Grapes in the vineries. Peaches and Nectarines have given, and are giving, very fine crops. In the open ground, Currants and Gooseberries are reported to have been unusually prolific, and Apples and Pears beyond the average.

Our illustration was prepared from a photograph by Bedford Lemere & Co., 147, Strand.

(To be continued.)

HOME CORRESPONDENCE.

THE SUMMER-PRUNING OF FRUIT TREES.—I do not think that "Extension," under the shelter of an assumed signature, should describe this or that system of summer-pruning, and deliberately write under them. "Now this is the practice ridiculed by Mr. Fish," and again, column *a*, p. 69, under the experimental trees at Chiswick, "so that Mr. Fish's censure has a pretty wide application." Again, on p. 68, he says, "I am clear enough in condemning 'E. M.'s' description of the usual practice of pinching to 2 or 3 inches or two or three eyes." In the face of these three distinct charges, and there are more of a similar sort on pp. 68, 69, most of your readers will be surprised to learn that, up till now, not a word or line has appeared from me in your columns this year on the length of the cuts, nor of the base-shoots, left after summer-pruning. Unless "Extension's" positive assertions are mere myths, or the laboured nightmares of a midsummer's night dream, they can only be based on my only published criticism of "E. M.'s" system, June 3, p. 667. If Editor and readers will oblige by turning to that page, I offer either of them, or the smartest P.-d. in the office, a sovereign, who can find in that column either a word or a line against "E. M.'s" cuts or their length, so that this charge has no more solid foundation than the censure and the ridicule launched against other systems, and is equally the offspring of "Extension's" fertile imagination. My chief objections to "E. M.'s" views were, that while disparaging summer-pruning, he practised it to excess; to cut in June and July, and again in September, being too much of a good thing for our climate, and also that he limited his prunings to "surplus shoots," whatever those might mean, but not a word from first to last as to the length of his cuts, or the number of eyes left at the base of his summer-pruned shoots. D. T. Fish. [We have had

further communications on the subject from Mr. Fish in support of his contention, but the excessive demands on our space prevent us from giving them a place. Ed.]

— It is refreshing to find Mr. Fish stating a clear and precise issue, and putting it in a nutshell, thus:—"Does or does not summer-pruning augment or accelerate fertility?" Summer-pruning is an elastic phrase used by Mr. Fish now, but holding him to his position, as stated or implied on June 3, I can answer him decisively in this way:—If you plant two Apple, Pear, or stone-fruits under exactly equal conditions, and summer-pinch one and leave the other untouched by the knife, the latter from the first will be by far the more fruitful or productive, and the fruit of it at least equal to the other in every way. But please note, that I deprive both trees of the benefits of root-pruning or root-restriction in any form, because I find wherever I go, that much that is credited to pinching is really due to root-pruning or transplanting, and these practices are acknowledged and common to all systems of fruit culture. Deprive your pincher of this aid, then you have him quite safe, and that is the true way to put his theories to the test. As you put in your leader of June 3, the extensionist provides a safety valve for the "abounding energies" of the tree in his unpinched branches, whereas the summer-pincher shuts the valve off and the trees explode—to carry the simile a little further. I say again, cut off his root-pruning and you will soon reduce your pincher to absolute despair when the extensionist will be gathering his fruit. It will be noticed, I dare say, that although summer-pinch is really the subject of dispute, Mr. Fish is constantly bringing in root-pruning in an unobtrusive way, knowing perfectly well, I doubt not, that without it his defence of pinching has not a leg to stand on. The close-pinch system, founded on pure "rule of thumb," has caused more trouble to fruit growers than anything else I know of, and it is not creditable to gardeners or gardening that we should still be wrangling over such a simple problem. *Extension.*

BLACKMORIANA.—A well-known fruiterer told his crowd of customers in Kingston market on Saturday last, that his Apricots were that morning gathered in Hampton Court Gardens, and his Peaches were grown by the celebrated author of *Larry Doony*. We have long been familiar with "flowery rhetoric." Now we hear of the "fruits of literature." D.

FRUIT TREES IN POTS ON THE DINNER TABLE.—These have a somewhat bizarre appearance, but when not of enormous size, they are permissible on large tables. Vines some years ago were so grown, notably by Sage when gardener to Lord Brownlow at Ashridge, Berkhamsted. These plants were arranged on iron stands or trellises, either table or pyramidal in form, and carried from eight to twelve bunches. Oranges, grown on small plants, and ripened in suitable warmth, are very ornamental on the table. Peaches, Cherries, Figs, Pears, and Apples are unsuitable for the purpose, by reason of the size of the pots in which it is necessary to grow them. A. Y. E.

NEW VARIETY OF ACHIMENES LONGIFLORA.—The letter of your correspondent ("The Old-un") in the current number of the *Gardeners' Chronicle*, no doubt refers to the Achimenes staged by us at the Chiswick Show. If he had paid a little more attention to the exhibit, he would have seen that we had two varieties of Achimenes longiflora—the old blue major, and a new one, quite distinct, and of a much deeper blue in colour. If your correspondent is fond of Achimenes, we have no doubt he would be much interested in a visit to our houses, where he would see the different varieties growing side by side. *Sutton & Sons*. [Messrs. Sutton kindly send a few blooms of the old and the new varieties, which, on inspection, show a slight difference, the new one having blooms of a slightly deeper tint of blue, and the reverse of the leaves is reddish-brown; whilst in the old variety it is green, which proves the contention of the exhibitors. Ed.]

ANEMONOPSIS MACROPHYLLA.—Can anyone yet tell me—for I asked the question before, three years ago—in what part of England, and in what soil and situation this elegant and remarkable plant does well? It is, I believe, the only species of its genus, and is a native of Japan. It flowers in July on wiry stems, 18 inches high, four or five flowers coming singly on very slender deflexed branches. The pendent pale purple flower is something between a Columbine and an Anemone, but quite distinct from

either. I have grown it for several years, but it never seems quite happy, and the plant disappears after two or three years. I have tried light soil and strong soil, sun and shade, without satisfactory results. It is looking less badly than usual this year, on light raised beds, with an eastern aspect, sheltered by a wall, and kept watered. It ripens a little seed, from which I have two or three times raised about a dozen plants, so that I have not been without material for experiment, but I do not make progress with it. The leaves wither, as if from damp, before the flowers come out, which gives a shabby appearance to what might be one of the choicest of hardy perennials. *C. Wolley Dod, Edge Hall, Malpas.*

POLYGONUM AS FODDER.—I can show a bank 6 feet wide and 150 long, with finer var. of Polygonum than have been growing for some years; some I have cut for my cows, but some are standing, and it will show how they have stood the drought. I am shipping the seed and roots to India for growing on embankments by the side of the rivers and watercourses, for it stops the silt, and prevents the banks being washed away. It is grown on sandhills, near the sea, and if the dry canes are not cut for fuel, they greatly assist in stopping the sand. *Thos. Christy.*

TOMATO DUNEDIN FAVOURITE.—This Tomato, which will, I believe, be sent out by Messrs. Hurst & Son, is in my opinion of great commercial value. Among fifteen varieties which I am growing this season it was the earliest to ripen, and the first fruits were as perfectly symmetrical as those that have followed. This is the result of long-continued and careful selection. The flesh of Dunedin Favourite is peculiarly rich, and it contains but few seeds; a very attractive combination of deep scarlet and crimson with glossy skin distinguishes the fruit. In weight it exceeds other Tomatoes, very solid, and with little or no core. Its level and regular shape is an advantage in packing for market. Some specimens of this Tomato were exhibited on July 11 at the show in the Chiswick Gardens. *W. R., Streatham Hill.*

FLORISTS' FLOWERS.

HEPATICAS.

My pretty Hepaticas lead the way among the spring-flowering plants. Large clumps of the single white and the single blue, growing at the foot of a wall on a west aspect, were cushions of bloom, and it is surprising how well the plants did, although the position is a very warm one in summer, and especially so during a time of drought. When planted, a deep hole was dug, and a foot or so of good loam and leaf-soil placed in it. In pots plunged in a bed of cocoa-nut fibre, the single and double red angulosa and Barlowii were early in bloom. The double blue is always latest in blooming, but it is a beauty when flowered in its best form. But it makes increase very slowly, and appears to be very impatient of division, and these no doubt are the main reasons why it is always scarce and dear. I find the best way is to grow three or four plants on undisturbed for a few years until they have five or six strong crowns; then detach the outer crowns and place round the sides of pots until they are strong enough to admit of being potted singly. I frequently get asked for plants of the Double blue Hepatica with four or six strong crowns, but it is difficult to find them.

How seldom one sees Hepaticas in the open border. They are no doubt frequently planted, but I fear little cared for after being planted, and a hot summer, or a dry and exposed position, results in their being roasted up. I think that if the plants were potted in the deep sort of Hyacinth pots, and the pots plunged in the open border, the plants would stand a better chance of succeeding. I have tried this experiment with other subjects requiring coolness and moisture at the roots during summer, and with decided success. The sides of the pots would help to keep the roots cool, and then the tops will stand a little roasting. They are greatly helped too by some fresh soil being placed around them as soon as they go out of flower, and over this some cocoa-nut fibre.

I regard *H. angulosa* as a very much overrated plant. It is a strong grower, and increases more rapidly than any other, but unless there are fine selections from it that I have not seen, the flowers are pale in colour, and somewhat starchy, and in my own experience not so freely produced as either of the other single-flowered types. It is easily recognised by its very robust habit of growth.

I very rarely get a self-sown seedling from the plants under my wall, though they are very strong. I take the precaution of surfacing the soil round the plants with a fine compost as soon as they have done flowering, so that if any seeds are shed they may have something to assist germination. But the plants plunged in the cocoa-nut fibre bed occasionally give me a few chance seedlings; perhaps the fibre is more favourable to germination than the soil in the border, and in the latter case drought may interfere with the sprouting of the seeds.

It would tend materially to the interest in the Hepatica if a good representation of the leading varieties could be seen at one of the spring meetings of the Royal Horticultural Society. It could be furnished only by those who grow large collections in the neighbourhood of the metropolis. *R. D.*

A TRAVELLER'S NOTES.

(Continued from p. 42.)

Kyoto, May 10, 1892.—On leaving Miyanoshta, I proceeded over the summit of Otome-toge (3300 feet elevation) to Gotemba, a village at the foot of Fuji-yama, chiefly known as the starting-place for those making the ascent from Yokohama. The ascent of Otome-toge, as of other hills I have been up, is particularly steep and fatiguing—scarcely a vestige of a path in some places, what there is, having arisen from the passing to and fro of woodcutters and their pack-horses. In some places the pathway (*Murray* calls it "almost like scaling a wall") ascends sheer and straight, even the pack-horses having to be provided with straw shoes tied around each hoof.

From the summit of Otome-toge, commonly known as the "Maiden's Pass," one of the most complete views possible of the Sacred Mountain is obtained, as well as the fertile plain at its base. The view is extremely fine, Fuji rising in the form of an unbroken snow-capped pyramid right ahead, completely dominating the surrounding chains of hills. Its regular pyramidal form, its great height (13,000 feet), four times as high as any mountain within sight, and, above all, its isolation in the centre of a huge plain, render the sight a most impressive one.

Descending from Otome-toge, with Fuji all the time in view, one passes through grass-covered slopes, which commence some 1500 feet from the summit. The Aster I mentioned in my last letter—which Professor Ito, of Najoya, informs me is *Aster incisus*—was largely represented, springing up on all sides, a few inches above the grass. *Pyrus japonica*, but a few inches high, was also freely flowering. *Pieris* (*Andromeda*) *japonica*, though not so fine as round the crater of Ojigoku, was to be seen, and in many places the undulating slopes of the mountain, especially near the summit, were covered with the low-growing "Maus Bamboo."

On the plain round Gotemba the vegetation was much richer. Nearly every vacant space was naturally cultivated, chiefly under Barley and Turnip, but the hedges round the homesteads contained many tall and pleasing specimens of Camellias, *Retinospora pisifera*, small *Cryptomerias*, and *Thuopsis dolabrata* was more frequent than I had yet seen it.

Bushes of *Berberis* were covered with yellow buds just bursting, and Dandelions were common on all the hedgerows. The amount of water round this village and spread over the plain is at all times great, doubtless at this moment greater on account of the recent heavy rains. All the fields are splendidly and systematically irrigated for the sake of the Rice—a crop which goes on when the Barley comes off—which should be in a few weeks now. The seedling beds of Rice, just a few inches high at present, will be by that time in a fit state for transplanting.

From Gotemba I came through by rail to Najoya, the fourth largest town in Japan—the distance is 217 miles from Yokohama. The line for the most part travels through fertile plains, or over huge

beds of rivers. It is curious in this part how out of all proportion are the beds of rivers to the amount of water they contain. The beds are extremely wide—about a quarter of a mile usually—in one instance nearly a mile, whereas the stream of water is often only a few yards in width, even after the recent heavy rains. That part of the bed one sees is very shallow, only a few feet deep, and invariably composed of sand, broken by stone boulders, and without a trace of any vegetation whatever.

The fertility of the country is surprising, and it nearly all seems to be under Barley. The quantity grown is out of all proportion to any other crop, and it looks in magnificent condition, and is evidently carefully cultivated. Just now the ears are pretty well fully formed, and will soon commence to ripen. It is cultivated in elevated rows like Asparagus, with trenches between, and has just recently been again earthed-up; that is to say, coolies with a long kind of flat spade (often the blade is 18 inches long) walk along each trench, take off a thin spit from the bottom, and lay it on the ridge, close to the stout stiff stems of the Barley. When this crop comes off, as I have said, Rice is put on, being transplanted from seedling beds. Many fields are pink with a low-growing plant, not unlike a *Silene* in colour—the effect in the distance is pretty. I am led to understand the fields are lying fallow for a season, and have been sown with this plant, *Astragalus lotoides*, useful for no other purpose except manure. The crest of the most celebrated and powerful family of the Shoguns is three Asarum leaves enclosed in a circle, their tips inwards. That of the imperial family is an ideal Chrysanthemum (though in its regularity and symmetry it looks like a perfect florist's Cineraria). The imperial family also frequently use (particularly the Empress) a crest composed of the leaves and flowers of *Paulownia imperialis*, now flowering well, a very beautiful tree.

The great Tokaido route is, for the most part, lined with Pines, some of them fine specimens. Without the castle a row of *Rhus vernicifera*, the Lacquer Plant, is just bursting into leaf; it does not attain a great height apparently.

I made an excursion to Iburi, a village 15 miles out of Naja, reached by rickshaws over a very bad road—the usual condition of all country roads in Japan. This mode of travelling long distances is most trying, and after several hours every bone in one's body seems to ache. No wonder Europeans rarely ever leave the beaten track, and confine their attention to a few of the big towns.

In this village are several small nurseries, chiefly containing neat rows of variegated Maples, *Sciadopitys*, *Cryptomerias*, *Retinosporas*, *Podocarpus*, &c. *Azalea mollis*, big bushes, were flowering well. Round this part of the country, the sides of the hills are often covered with low-growing *Azaleas*, chiefly a small-flowered brick-red one. Thus massed, they produce a charming effect. It may with truth be said, the *Azaleas* are to Japan what the *Heaths* are to Europe.

A very pretty plant I saw flowering in one of these nurseries was *Rehmannia glutinosa*; there were several clumps, beneath the shade of a *Cycas*. Though only growing some few inches high, it produces long *Scrophulariaceous* flowers, of a pleasing purple colour, and about 2 inches long, in sufficient quantity to make the plant distinctly decorative.

In the village is nothing remarkable, except an old Pine, with a straight stem, some 6 feet high, and a flat-trained head covering many square yards; it is most neatly and cleverly trained.

From Otsu I came to Kyoto, via the Temple of Midera, the village of Karasaki, and the mountain Hiei-zan. The temple, not far from Otsu, along the shores of the lake, covers, with its adjacent buildings, a considerable area. Many of these are hidden by the fine groves of *Cryptomerias* and Oaks surrounding the temple. The Maples, chiefly the ordinary *palmatum* (polymorphum), are also fine, and justly famous.

The village of Karasaki, about 3 miles further along the shores, is nothing but a fishing hamlet, yet celebrated all over Japan for the most curious Pine known. Its height is not great, about 50 feet; the circumference of the trunk at the base is about 20 feet, though at a few feet from the ground, owing to its dividing into three main forks, it is 37 feet. The following dimensions are also given: length of branches from east to west, 240 feet; length of branches from north to south, 288 feet; number of branches, 380.

It is impossible to step out these distances to see if they are even approximately correct, owing to the

numerous supports, both stone pedestals and wood, on which the great main branches rest. There are many dozen forming a whole scaffolding of wooden legs and stone cushions, but nevertheless, I see no reason to doubt them. Old wounds, caused by time and decay have been stopped by plaster; in one instance, a small roof has been erected over a particularly bad spot. A small Humbo shrine stands in front of this tree, which from its great age, has obtained the reputation of sanctity.

Proceeding still further between cultivated fields on the one hand, and the blue waters of the great lake on the other, the foot of Hiei-zan is soon reached, and then commences as toilsome and as steep a four-mile climb as one can well wish for. I am not surprised at the Japs considering it a pilgrimage to ascend some of these mountains. *James H. Veitch.*

(To be continued.)

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 26.—The show held in the Drill Hall, James Street, Westminster, on Tuesday last, was not by any means so large, or so well attended, as usual, but there were many plants of interest, and a good collection of fruit from amateurs and nurserymen.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. C. T. Drury, H. B. May, H. Herbat, David W. Thompson, R. Dean, O. Thomas, G. Stevens, C. F. Bause, C. J. Salter, H. Cannell, J. D. Pawle, W. Bennett Poë, C. E. Shea, T. W. Girdlestone, C. E. Pearson, T. Baines, G. Gordon, and H. H. D'Ombra.

Messrs. John Laing & Son, Forest Hill, London, S.E., staged a miscellaneous group of stove and greenhouse plants, including some fine *Caladiums* and *Begonias*, also a plant in flower of *Caragana cardinalis*, and some *Disa grandiflora*. *Caladium Le Nain Rouge* is one of the small-leaved type, a very colour (Award of Merit). *Begonia Mrs. Joseph*, also given an Award of Merit, is a large double variety, flowers red (Silver Flora Medal).

A collection of Sweet Peas was brought by Mr. Henry Eckford, Wem, Salop. Most of the best varieties were there, and a few seedlings from this well-known raiser were granted Awards of Merit. These were the following: The Belle, a pretty mottled Rose variety; Eliza Eckford, white, with a little pink, very attractive. A number of Pansy and Viola blooms also accompanied this exhibit (Silver Banksian Medal).

Messrs. H. Cannell & Sons, Swanley, Kent, staged a group of *Begonias*, cultivated from seed sown as late as last February. The plants were good, and carried large double flowers. Also a number of plants of *Begonia Octavia*, that pretty double white *Begonia* of nice dwarf habit (Silver Banksian Medal).

From Messrs. Paul & Son, The Old Nurseries, Cheshunt, came a few hardy flowers, also a plant of *Clematis viticella* var. *Kermesina*. The flowers of this section are small, and this variety is a shade of violet-rose.

Amongst some hardy plants from the same firm was one of a *Campanula Mariessii* (Awarded a First-class Certificate). This is a dwarf plant, with erect habit, about 4 inches high as shown. The flowers are about 3 inches across, terminal, and of a pretty blue, with a narrow band in each segment of darker hue, pistil light blue. Leaves are small, rather stiff and serrated, light green, produced in threes, in shape lanceolate-ovate. Mode of extension by rhizomes or underground runners.

Amongst some plants exhibited by Messrs. Jas. Veitch & Son, Chelsea, were plants of *Cupressus Lawsoniana versicolor*, and *Retinospora squarrosa sulphurea*. The former has slight white variegation, and the latter has but faint variegation of yellow. Also the following:—*Rhododendron* var. *Sylvia*, one of the smaller-flowered varieties raised by the firm—a very lovely yellow. Plants of *Lantana Drap d'Or*, not more than 6 inches high, but blooming very freely; it is a good yellow variety. *Didymocarpus lacunosa* was awarded a Botanical Certificate; the species are from tropical Asia, and produce flowers very like those of *Streptocarpus*. This one has flowers of violet-purple—a stemless herb. (See p. 120.)

Messrs. E. D. Shuttleworth & Co., Peckham Rye, and Fleet, Hants, had a group of *Crotons* arranged with Ferns, included were large, well-coloured plants of *C. Hawkerii* and *C. Queen Victoria*. Amongst

the smaller plants were those of *C. Countess*, *C. aucubæfolius*, *C. Lady Zetland*, &c. (Silver Banksian Medal).

J. T. Hopwood, Esq., Ketton Hall, Stamford (gr., Mr. W. H. Divers), showed a collection of border Carnations, Ketton Rose, a very fine variety of that colour (Bronze Banksian Medal).

Mrs. Darwin, The Grove, Huntingdon Road, Cambridge, showed a plant of *Begonia Mrs. Bourne*, one of the tuberous-rooted varieties, with large single yellow flowers of very great substance. The stem of the plant shown was fasciated, and some of the petals of most of the flowers were modified into leaves.

Mr. Anthony Waterer, Knap Hill Nursery, near Woking, again showed sprays of the variety of *Spiræa Bumalda*, var. *Anthony Waterer*; it is a fine deep crimson colour, and was given a First-class Certificate.

Mr. Fred. Bull, Wormingford, Colchester, had some Carnation seedlings—*Dives*, a scarlet self of fair quality; and *Esmeralda*, a large yellow ground, with lilac tides (Award of Merit).

Messrs. Dickson & Co., Chester, showed a plant of *Cupressus macrocarpa lutea*; it was of very slender and rather loose habit. Nearly the whole of the needles were light yellow. The specimen shown had probably been taken from a greenhouse (First-class Certificate).

Two plants of *Humulus japonica variegatus* were sent from M. F. Roemer, Quedlinburg. The variegation was very general. Messrs. F. Sander & Co., St. Albans, had a very fine plant of the new *Strobilanthes Dyerianus*, which was first shown at the Ghent show, and then described and figured in our columns.

Mr. P. McArthur, Maida Vale Nursery, staged a good group of miscellaneous plants, including a few Orchids, *Crotons*, Ferns, Palms, &c.; also three plants in flower of *Eucomis undulata* (Bronze Banksian Medal). Some bunches of Carnation *La Villette* were from Mr. E. Domaille, La Colombille, Guernsey.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Sec.), Dr. M. T. Masters, F.R.S., Thos. Statter, H. Ballantine, T. W. Bond, E. Hull, A. H. Smee, and H. M. Pollett.

Messrs. B. S. Williams & Son, Victoria and Paradise Nursery, Upper Holloway, N., staged a very effective group of Orchids, in which were good specimens of *Anguloa Ruckeri sanguinea*, *Epidendrum Imperator*, *Cattleya Acklandæ*, *C. gigas*, *Oncidium Gardneri*, *O. litum*, *Pescatorea Dayana*, *Paphinia cristata grandis*, *Trichocentrum tigrinum*, *Platyclinis filiformis*, *Cypripedium* × *Morganisæ*, *C. × orphanum*, and others; *Miltonia vexillaria* Cobbiana, *M. Roezlii*, and various fine species of *Odontoglossums* (Silver Banksian Medal). Messrs. F. Sander & Co., St. Albans, also had a group of rare Orchids, comprising fine plants of the beautiful *Aërides Sanderianum*, *Habenaria militaris*, *Cypripedium* × *Massaianum* (superciliare ♂, *Rothschildianum* ♀), *C. × Fausianum* (Dauthieri ♀, *calophyllum superbum* ♂), *C. × Youngianum*, *C. × Venus* (albansense ♀, *reticulatum* ♂), *Mormodes citrinum*, *Cattleya Batalini*, *Miltonia Roezlii alba*, *Zygopetalum* (Promenæa) *citrinum*, *Dendrobium transparens*, &c. (Silver Banksian Medal).

T. B. Haywood, Esq., Woodhatch, Reigate (gr., Mr. Salter), showed by far the best Orchid of the meeting in a grand spike of the large pure white *Miltonia vexillaria* "Daisy Haywood," the largest and best white form of the genus (First-class Certificate).

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed a small collection of cut spikes of grandly-grown *Cattleyas* and *Lælias*, for which a Cultural Commendation was awarded. They consisted of *Lælia elegans prasiata*, *L. e. superbiens*, *L. crispata superba*—a noble form (First-class Certificate); two varieties of *C. Rex*, *Lælia* × *Amesiana*, and a plant of *Vanda lamellata*.

Messrs. Pitcher & Manda, the United States Nurseries, Hextable, Swanley, Kent, showed *Sobralia macrantha* Princess May, a delicately-tinted form, with white sepals and petals, and pale yellow lip, the front portion tinged with lavender; and *Cypripedium* × *Edwardii* (Fairrieanum × *superbiens*), a charming hybrid, as all hybrids of *C. Fairrieanum* always are. The upper sepal was white, with numerous purple lines branching into each other; petals white, tinged with green on the upper edge, and profusely spotted with purple; lip greenish-white, tinged lilac (Award of Merit).

H. Tate, Esq., Jr., Allerton Beeches, near Liverpool (gr., Mr. J. Edwards), sent flowers of his beautiful and richly-tinted *Cattleya Hardyana*, Tate's var., which received an Award of Merit; and *Cypripedium* \times *Tryoniana* (*Harrisianum* \times *superbiens*). W. R. Lee, Esq., Beach Lawn, Audenshaw, near Manchester, showed *Cattleya Gaskelliana*, Audenshaw var., very fine in form and colour. Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., sent *Cattleya Warszewiczii*, Turnbull's var., with large light-coloured flowers of a pale rose hue, the lip mottled with a slightly darker tint than the petals—a very singular form; and a flower of their form of *C. Dowiana*, in which the petals are tipped with crimson; and T. A. Gledstanes, Esq., Manor House, Gunnersbury (gr., Mr. H. Denison), showed three fine plants of *Cattleya superba splendens*, which had been successfully cultivated in a warm sunny house for some years, the plants blooming magnificently, as a rule, twice a year. A Cultural Commendation was justly awarded.

Fruit Committee.

Present: T. Francis Rivers, Esq., in the chair; and Messrs. W. Wilks, G. Bunyard, J. Cheal, W. Warren, A. Dean, G. Woodward, W. H. Divers, G. Wythes, G. Reynolds, F. Q. Lane, H. Balderson, and J. Smith.

A box of well-coloured fruits of Peaches and Nectarines came from J. T. Hopwood, Esq., Ketton Hall, Stamford (gr., Mr. W. H. Divers). Peaches were Crimson Gálante and Dagmar; the Nectarine, Lord Napier.

From Roger Leigh, Esq., Barham Court, Maidstone (gr., Mr. Geo. Woodward) came a dish of Alexander Peach, from an east wall; they were of good size, and high colour; also a dish of large Nectarines Lord Napier, from a standard tree in an unheated house. A Smooth Cayenne Pineapple, weighing 5 lb. 12 oz., produced by an unrooted sucker planted September 15, 1892, was shown by Mr. Owen Thomas, Royal Gardens, Windsor.

Messrs. Geo. Bunyard & Co., Maidstone, had a very nice collection of Apples, the quality of which was very good, noticeable were Lady Sudeley, Quarrenden, Duchess of Oldenburg, Stirling Castle, Lord Suffield, Sugar Loaf, Lord Grosvenor, Beauty of Bath, Grenadier, and Peter the Great (Silver Knightian Medal). Also a collection of Apricots in seven varieties from the cool orchard-house.

Another collection of handsome fruits was from Messrs. T. F. Rivers & Co., Sawbridgeworth. These were Pears Souvenir du Congrès and Louise Bonne of Jersey, Apples Ribston Pippin, Nectarines Lord Napier and Dryden, Apricots Grosse Pêche and Mexican; Plums, Early Transparent Gage, Late Transparent Gage, and Monarch; Cherries Bigarreau, Empress Frances, and Géant d'Hedelfinger (Silver Knightian Medal).

Lord Foley, Ruxley Lodge, Esher (gr., Mr. J. W. Miller), showed dishes of large Peaches, Grosse Mignonne, Royal George, Alexander, and Noblesse, the latter not quite ripe (Cultural Commendation).

An Award of Merit was given to a seedling Melon, called Lee's Perfection, exhibited by F. Lee, Esq., Lynford Hall, Mundford, Norfolk; a yellow, medium-sized fruit, and white, deep flesh; flavour good, rather sharp. Others were from Mr. J. Rodbourn, Haling Park, Croydon, who had Croydon Hero, and Rodbourn's Green-flesh.

From the Society's Gardens at Chiswick came nine dishes of Apricots grown in the open. They were Turkey, Hemskirk, Grosse Pêche, Moor Park, Kaisha, St. Ambrose, Royal George, Shipley's Early, and Breda, a very small variety. Also a collection of Tomatos in thirty-four varieties, including about eight yellow varieties, and the very distinct peach-yellow Ponderosa was the largest shown. Mr. J. Smith, Mentmore, sent six dishes of Apricots; his Hemskirk, Moor Park, and Turkey were very good (Vote of Thanks).

Mr. O. Thomas, gr. to Her Majesty at the Royal Gardens, Frogmore, showed dishes of Apricot Moor Park, Powell's Late, Shipley, and Frogmore Early, all good. The Duke of Northumberland, Syon House, Brentford (gr., Mr. Wythes), showed eighteen fruits of the new Melon raised by him, and certificated last October, called Beauty of Syon. It has rather small fruits, in some cases well netted, has a thin skin, and is of good flavour; also four boxes of Morello Cherries and six of Apricots, in six varieties (Bronze Medal). S. G. Lutwyche, Esq., Oakfield, Eden Park, Beckenham (gr., Mr. J. May), had a box of Tomato Perfection, very fine, smooth, heavy fruits (Cultural Commenda-

tion). A very slightly-made small fruit-basket, to hold about a pound, with a wire handle over top, exhibited by Messrs. Cooper, Denison, & Walkden, 7 and 9, Bride Street, E.C., was Commended.

Lecture.

ON HOUSES FOR ALPINE PLANTS.

Mr. H. Selfe Leonard, in commencing his lecture on this subject, said that by alpine plants he meant mountainous plants in temperate climates, but the word had been often used to include many that are dwarf in habit, but not at all identical in their origin or in their requirements to the true alpine. On the other hand, there were some that are not exactly alpine in their origin, but whose requirements in respect to culture and climate were but little different to those strictly alpine, and which in a subject of this kind might be included. The lecturer said that there often arose the question, How far is artificial protection needed by this family, and how much are they benefited by it? He might answer those questions by saying that in his opinion it was essential to some and desirable to many. Mr. Leonard then explained that protection was not needed so much from frost, as from the wet during autumn and winter, and the east winds prevalent in spring, and then referred to the different methods of protection that had been adopted. The handlight was very favourable from many points of view, but its worst characteristic was that the rain from the top of the light was all poured on the ground immediately surrounding the exterior. Sloping glass for individual plants, the system of collecting those that generally need protection, and planting them together in an ordinary part of the rockery, and then covered with sloping lights, unheated frames and pits were all discussed, and the lecturer thought that one was best in some cases, the other in others, but not any system was equal to the alpine-house, which could be visited without inconvenience, and offered shelter to those who, in any weather, wished to look at them, and also offered means of procuring a dryer winter atmosphere or condition. It could be ventilated better by means of bottom ventilation, and it could be made bright throughout the year by having some of the plants in pots, and by growing these in frames during the time protection is needed. The house should have a moveable roof, and must be constructed so that drip is prevented. A large amount of air must always be available, the house should never be entirely closed, indeed, it need not quite meet at the top, but a space be left unglazed over the centre path, and the plants should be placed very near to the glass. Apart from these special requirements, ordinary houses that are used for growing Auriculas would answer the purpose. The roof could be removed during late spring, summer, and early autumn. The houses should run from north to south, and the plants could be shaded very thinly during extremely hot weather. In regard to the arrangement of the plants, the lecturer thought that there was much to be said in favour of planting them out, but if some were kept in pots, they are most under control, and they can be moved outside when required, and suitable soil accorded to each of them.

Mr. Leonard had written a list of plants suitable for the alpine-house, but this, which was not read at the meeting, will be published in the Society's Journal.

Mr. Geo. Paul, who was in the chair, said he did not like to take any plant under protection if it would succeed equally well outside, but he thought that Mr. Leonard had made out his case, and that some of the alpine were the better for protection from the wet autumn, and cold, damp atmosphere of winter.

THE DEVON AND EXETER GARDENERS' ASSOCIATION.

JULY 12.—The annual summer excursion of the above includes, besides the Englishman's dinner, visits to several gardens of note, of which flowery and fruity Devon boasts so many. There is no doubt that these annual and social gatherings do very much towards the success which has attended the Society since its formation, and account for the promise of a useful session next season. It was arranged for the members to meet at Streatham Hall, the residence of Mrs. Thornton West, Exeter, when Mr. Franklin, the head gardener, undertook to pilot them through the grounds and the numerous houses under his charge; notably the Palm-house, a recent erection, a description of which was given in these pages recently. I will only say that it

reflected great credit on Messrs. Veitch & Sons, of Exeter, who built the rockwork and arranged the whole of the interior, no less than on Mr. Franklin, for the skill and good culture which have been brought to bear on the plants with which it is filled; the Palms, Tree Ferns, and everything besides, were in perfect health, and showed much vigour. The vineries, pinery, peacheries, and Orchid-houses, the huge plant-stove (containing a vast number of specimens in great variety), and exotic fernery, and other plant and fruit-houses, all exhibited the head gardener's cultural abilities. The grounds, which are marred only by the numerous angles of the slopes and the terraces, are well kept, showing admirably-used and liberal expenditure of money, now, alas! so often lacking in fine old gardens. The Coniferae are numerous, varied, and give promise of making handsome specimens.

The party subsequently proceeded to Killerton, the seat of Sir Thomas Acland, Bart., M.P., a distance of eight miles. Through the fertile valley of the Exe, the route lay between splendid fields of golden Wheat and bearded Barley, orchards laden with Apples and Pears on each side of the road, the recent glorious rains having vastly changed the appearance of the crops that in this fertile part of the county one would scarcely think there had been a long period of drought. Onward through narrow roads arched with lofty Elms and other trees, all tokens of good soil, till Killerton was reached. Mr. Garland, the well-known gardener, who was on the look-out for the party, took the party through the flower garden, which was ablaze with colour. A corridor running the whole length of it on one side was filled with a good selection of flowering plants, with creepers and Fuchsias, Bougainvilleas, Plumbagos covering the roof. Sir Thomas and Lady Acland kindly invited the company to view the picture-gallery, which contained many beautiful specimens of the art of Sir Joshua Reynolds, notably among them many of the ancestors of the Acland family. The visitors then partook of refreshments, provided by Sir Thomas. The company then further explored the grounds, under Mr. Garland's conduct, which, with art and Nature most artfully combined, make a lovely whole. Trailing on large Rhododendrons and Kalmias were long festoons and wreaths of the crimson flowers of *Tropæolum speciosum*. The *Rhus Cotinus* exhibited a rare effect by its spreading branches intermixed with other shrubs. The grounds abound with fine specimens of noble Conifers, hardly excelled elsewhere. The Deodar Glen was a grand sight with a large number of Deodar Cedars on each side, coning most abundantly. The vegetable garden is in admirable order, a row of Tender-and-True Bean, the new running variety of the Canadian Wonder Dwarf, fruiting most abundantly.

After leaving Killerton, a two hours' drive took the party to Escott, Sir J. Kennaway's seat. The visitors were conducted round the place by Mr. Anderson, the head gardener. Many choice specimen trees of Coniferae were also to be seen. *Bambusa Metake* flourishes most luxuriantly here, and the plants were raised on the place from seed many years ago. The plants afford sufficient stakes for all purposes in the plant-houses. The kitchen garden was found in excellent order. Crops of Apples, Pears, Peaches, and Nectarines, abundant and fine; the Vines were carrying excellent crops, and the trees in the Peach-houses were laden with promising crops, everything betokening good culture. The excursion from first to last was a very enjoyable one.

THE CARNATION AND PICOTEE EXHIBITION AT OXFORD.

JULY 18.—The annual exhibition in Mr. Dodwell's gardens took place on the 18th inst., but the extreme heat and drought had put many of the Southern growers out of competition.

In the class for twelve Carnations, 1st, Mr. Tom Lord, Todmorden, with a capital stand of flowers, Bruce Findlay, Duke of York, a new and fine scarlet bizarre; Master Fred and Gordon Lewis, being very fine in this stand; 2nd, J. Whitham, Hebden Bridge, Master Fred, Joe Edwards, and Admiral Curzon, very fine in this stand; 3rd, Mr. Robert Sydenham.

In the class for six Carnations, 1st, Mr. J. Edwards, Manchester, Master Fred and Chaundy's Guardman being in this stand; 2nd, Mr. E. Shaw, Manchester, with a very fine Robert Houlgrave in this stand; five other prizes following.

For twelve white-ground Picotees, there was an unusually fine lot of exhibits with eleven stands in close competition, and some of our leading Northern

growers declared it to be the finest lot they ever saw. Messrs. Thomson & Co., Birmingham, were 1st with a fresh-looking bright lot of flowers, Mrs. Sharp, Amelia, Nellie, Little Phil, and Lady Louise, being especially fine; 2nd, Mr. Robert Sydenham, and in this stand we noticed Lakin's Ne Plus Ultra, new, as being very fine; and 3rd, Mr. T. Whitham, and eight other prizes awarded.

In the class for twelve selfs, fancies, or yellow-ground flowers: 1st, Mr. R. Sydenham, with an excellent lot of blooms, A. W. Jones, Janira, and Robert Sydenham being striking flowers in this stand. 2nd, Messrs. Thomson & Co., Negress, King of Purples and Von Beningra being especially fine. 3rd, Mr. George Chaundy, Oxford; with five other prizes following.

In the class for six white ground Picotees: 1st, Mr. A. W. Jones, Birmingham; 2nd, Mr. J. P. Sharp, Birmingham, with four other prizes following.

Other classes were well filled; and in the single specimen classes, the prizes were:—

Scarlet bizarres: 1st, Mr. Whitham, with Robert Houlgrave; 2nd, 3rd, and 4th, Mr. Tom Lord, with Admiral Curzon and two blooms of Duke of York; 5th, Mr. Phillips, with Robert Houlgrave.

Crimson bizarres: 1st, Mr. Whitham, with Master Fred; 2nd and 3rd, Mr. Robert Sydenham, with Master Fred and J. D. Hextall; 4th and 5th, Mr. Lord, with Thaddens and J. D. Hextall.

Pink and purple bizarres: 1st, Mr. Lord, with Bruce Findlay; 2nd and 3rd, Mr. Lord, with Arline.

Purple flakes: 1st and 3rd, Mr. T. Lord, with Mayor of Nottingham; 2nd, Mr. R. Sydenham, with Chas. Henwood.

Scarlet flakes: 1st, Mr. G. Chaundy, with William Dean; and 2nd, Messrs. Thomson & Co., with J. P. Sharp, a fine seedling.

Rose flakes: 1st, Mr. W. Read, Oxford, with a seedling; 2nd and 3rd, Mr. T. Lord, with Sybil and Thalia.

Heavy edge Picotees: 1st, Mr. A. R. Brown, with Little Phil; and 2nd, Mr. R. Sydenham, with Polly Brazil.

Medium edge Picotee: 1st, Messrs. Thomson, with Zerlina; and 2nd, Mr. Sydenham, with Mrs. Payne.

Light edge Picotee: 1st and 3rd, Mr. Jones, with Elizabeth and Mrs. Gorton; 2nd, Mr. Brown, with Thos. Williams.

Selfs: 1st, Mr. A. W. Jones, with Germania; 2nd, Mr. Chaundy, with a seedling.

Fancies: 1st and 2nd, Mr. Dodwell, with seedlings.

Yellow Grounds: 1st, Mr. W. Spencer, Jr., Birmingham, with Mr. Robert Sydenham; and 2nd, Mr. A. W. Jones, with Stadthall Bail. Premier Carnation, Master Fred, exhibited by Mr. Lord; Premier Picotee, Little Phil, exhibited by Mr. Whitham; Premier yellow ground, Mrs. Robert Sydenham, a bloom of the finest quality, exhibited by Mr. Wm. Spencer, Birmingham; Premier self, Germania, exhibited by Mr. A. W. Jones.

BRISTOL AND WEST OF ENGLAND CARNATION AND PICOTEE SHOW.

JULY 19.—This new Society held its first exhibition in the Clifton Zoological Gardens on the above date, but owing to the very early season, and the Carnation shows running so close to each other, there were not many collections present. For twelve Carnations, Mr. A. R. Brown, Birmingham, was 1st; Mr. F. Hooper, Bath, 2nd. For six Carnations, 1st, Mr. Dowell, Chew Magna, Bristol. For twelve Picotees, 1st, Mr. Chas. Turner, Slough; 2nd, Mr. A. R. Brown. For six Picotees, 1st, Mr. F. W. Baker, Bristol. For twelve yellow ground Picotees, 1st, Mr. Chas. Turner; 2nd, Mr. A. R. Brown. For six yellow grounds, 1st, Rev. G. R. Brown, Iron Acton, Bristol; 2nd, Mr. F. W. Baker, Keynsham, Bristol. For twelve selfs or fancies, 1st, Mr. C. Turner, Slough; 2nd, Mr. A. R. Brown.

The Charles Turner Medal, for twelve selfs, was won by Mr. A. R. Brown, and the premier Carnation was Admiral Curzon; premier Picotee, Thomas Williams; and premier yellow ground, Mrs. Robt. Sydenham. A First-class Certificate was awarded to Mr. Ambrose, gr. to F. R. Robinson, Esq., Sneyd Park, Bristol, for a very fine pure white Tree Carnation, named Blagdon Surprise.

NEWCASTLE-ON-TYNE, Great Summer Show.

JULY 20, 21, AND 22.—This year the annual exhibition has been held in July, instead of August, and in connection with the Northumberland Agricultural

Society, whose meeting has been held at this town. In this arrangement the executive of both societies are to be congratulated, and we should think that the gain has been mutual.

PLANTS.

The plant classes were well filled, both those for flowering plants and for fine foliage. For eight plants in bloom, Mr. Letts, gr. to the Marquis of Zetland, Aske Gardens, was a grand 1st with an even lot, all of which were in fine condition; these were Erica Candolleana (extra), E. effusa, Dipladenia amabilis, D. boliviensis (both very fine), Anthurium Scherzerianum, in two distinct forms; Allamanda nobilis, and A. Hendersoni. Mr. Morris of Park Road, Felling, was 2nd, his best being Ixora Pilgrimi, in profuse flower; a smaller plant of I. salicifolia, and a good Statice profusa.

With six plants, Mr. Nicholas, the Marquis of Zetland's gardener at Upleatham, was easily 1st, his plants being as fine as those from Aske; Erica Austiniana (highly coloured), E. Shannoni, Statice profusa, Stephanotis floribunda, Dipladenia boliviensis, and Allamanda nobilis, being the selection.

In the amateur class for three plants, Mr. Liddle, Fellingate, showed well, and took the 1st prize.

For four Ericas, Mr. Nicholas was 1st, with healthy plants of medium size, but bright and fresh; these were Ne plus Ultra, amula, Austiniana, and retorta major.

Fuchsias were shown extremely well, the plants being profusely flowered. Mr. Russell, Felling-on-Tyne, being 1st in two classes, and Mr. Bell, High Felling, in another. For eight foliage plants, Mr. Letts was 1st with large examples of good culture, Croton angustifolius and C. Queen Victoria, both being highly coloured, and Cycas circinalis, Dion edule, Dasylirion acrotrichum and Kentia Forsteriana, each alike good. Mr. J. Smith, gr. to Theo. Lange, Esq., Gateshead, was 2nd, with plants equally as large, but which lacked colour. Phoenix rupicola and an extra good Kentia Forsteriana were the best of these. In the class for six plants with fine foliage, Mr. Nicholas again stood 1st, his best being Croton angustifolius and C. Johannis, with a fine Dasylirion acrotrichum. W. McIntyre, gr. to Mrs. G. Pease, Darlington, was in this class an extremely close 2nd, there being but little to choose between the two lots. His best were Croton angustifolius, and Cycas revoluta.

With three Crotons, Mr. Letts was 1st, the plants dwarf and finely coloured, C. Thompsoni and C. aigburthiensis being the best; Mr. McIntyre followed. For three Dracenas, Mr. Wm. Stewart, gr. to Sir W. Lawson, Carlisle, was 1st, with D. Mooreana, D. Youngii and D. Shepherdii. Mr. McIntyre following again very closely.

The Fern classes were also well filled. In the open class for six, Mr. Nicholas was 1st, with remarkably fresh examples, some of which are rarely seen in a show; these were Sadleria cyathoides, a noble Tree Fern, and Lomaria zamiaefolia, with Leucostegia immersa, Davallia tenuifolia Veitchiana (extra fine), D. fijiensis plumosa, and Gleichenia Mendeli. Mr. McIntyre followed with smaller plants in this class, but took 1st in the amateurs' class for six, with Davallia fijiensis, D. tenuifolia Veitchiana, and other good plants, in this class being followed by Mr. Smith.

Table plants were of good useful size, and bright in colour. Mr. McIndoe, gr. to Sir J. W. Pease, Hutton Hall, was 1st in the open class, and Mr. Stewart in the amateurs. The pots in all of the exhibits in these classes were covered with ornamental but suitable pot-covers, thus enhancing the effect as a whole.

CUT FLOWERS.

These were throughout finer than at any show in the south this year, the season being favourable to the northern growers. Messrs. Harkness & Sons were 1st for forty-eight Roses, with a grand lot of blooms, very fresh and bright in colour, H.P.'s predominating, the best being Duc de Rohan, Harrison Weir, Emile Hausberg, Avocat Duviervier, Madame Hausmann, Marie Baumann, Comte de Raimbaud, and Duke of Fife, the latter a distinct dark kind, with a violet shading. Messrs. D. & W. Croll, Dundee, were 2nd, with rather smaller flowers, but well set up. In the next class, for thirty-six kinds, Messrs. Harkness still maintained 1st position.

For twelve yellow Roses, Mr. D. Robertson, Helensburgh, N.B., was 1st, with bright flowers of Francisca Kruger; and Messrs. Croll 2nd, with Marie Van Houtte.

For twelve of one sort, any variety, Mr. H. May, Bedale, was 1st, with very fine blooms of Alfred

Colomb; and Messrs. Croll 2nd, with Merveille de Lyon.

For twelve Tea-scented, Messrs. Croll were deservedly 1st, their finest being Devoniensis, Madame Lambard, and Madame Hoste; Messrs. J. Cocker & Sons, Aberdeen, were 2nd.

Messrs. Harkness & Son were 1st with eighteen kinds of hardy herbaceous and border flowers, showing the best kinds in season, and in large bunches; Mr. T. Battenby, Blaydon, being a very near 2nd, his flowers being too much crowded to be seen to advantage.

Pansies were quite a feature, the finest being in the fancy class for twenty-four blooms, in which Mr. Bailey, Jun., Sunderland, was 1st, staging some of the finest blooms seen this year at any show.

The best twenty-four show varieties came from Mr. Proudlock, Holywell.

Carnations and Picotees were quite up to the standard of the National Society. Mr. T. Flowdy, Sunderland Street, Gateshead, had the finest Carnations, and also the best Picotees in the larger classes, both exhibits being first-class.

For a box of twelve kinds of exotic cut flowers, Mr. Nicholas was a good 1st, with choice kinds, Ericas, Orchids, and Lapagerias all being prominent. In a smaller class Mr. McIndoe was 1st, with larger bunches.

Floral arrangements are always an important feature at Newcastle, and at no show this season, North or South, have we seen such a fine display, with such a keen competition as on this occasion.

In the open classes, Mr. Morris, Felling, was 1st for a single epergne, with a light and tasteful arrangement of good proportions; Mr. Edmondson, Green Market, Newcastle, following with a somewhat bolder vase, and a lightly arranged basket. Mr. Robertson was 1st, Orchids, Pancratiums, and light-coloured foliage of Asparagus plumosus predominating; Mr. Jennings coming 2nd with a heavier design, in which Cattleya blooms was the important feature. The 1st prize for a bridal bouquet went to Mr. Robertson also. Mr. Edmondson followed. Mr. Jennings was 1st for a hand bouquet, with a beautiful example, pale colours predominating therein. Mr. Thos. Battenby had the best ladies' spray, and also the best button-hole.

In the amateur classes the arrangements were equally good, the best epergne being that arranged by Miss Edmondson. The lady being equally successful with a basket arrangement, and with a hand bouquet. Mr. T. Battenby was 1st for bridal bouquet in this division with a free design.

FRUIT.

The competition in the sixteen classes was all that could be desired, the best features being the Grapes and the collections. Mr. McIndoe, was 1st for eight dishes, with a strong lot, Muscats and Black Hamburgh Grapes, Smooth Cayenne Pine, Beurré Superfin Pears, Bietigheimer Red Apples (extra fine), and Pitmaston Orange Nectarines, being the best dishes; Mr. Hunter, Lambton Castle Gardens, Darham, was a good 2nd. Mr. Hunter and Mr. McIndoe were 1st and 2nd respectively for four dishes, both showing well.

For four bunches Grapes, not fewer than two varieties, Mr. Hunter was 1st, with Black Hamburgh and Gros Maroc, both finely coloured, and of extra size. Mr. McIndoe, who was 2nd, had good bunches, but the Madresfield Court lacked colour. Mr. McIndoe was 1st, with Muscat of Alexandria against larger bunches of Cannon Hall, from Mr. Hunter. For any other white kind, Buckland Sweetwater was the favourite kind, from Mr. Stewart and Mr. Atkinson, Matfen Gardens, Corbridge, respectively. The best Black Hamburgs were from Mr. Atkinson, very fine bunches.

Mr. McDonald, gr., Hartford House, Cramlington, had the best Peaches in Barrington, and Mr. Marr, Clitheroe, the best Nectarines in Pitmaston Orange. The two best dishes of Figs were those from Mr. Hunter and Mr. McIndoe. The last-named had by far the best Cherries in Bigarreau Napoleon; and Mr. T. Battenby the best Strawberries in Maréchal McMahon. A fine dish of Perfection (type) of Tomato from Mr. J. Panton, Benwell Dene, Newcastle, was easily 1st in the class for Tomatos.

Miscellaneous exhibits were hardly so numerous as last year. Messrs. W. Fell & Co., Hexham, had a remarkably fine exhibit of Conifers in pots and tubs, with other shrubs, making an effective display; with these were cut flowers. Messrs. Little & Ballantyne, Carlisle, had a beautifully arranged group of decorative stove and greenhouse, fine-foliage, and flowering plants, in which Crotons, small Palms, and grasses were conspicuous. Messrs. J. Robson &

Sons showed a good stand of plants, so also did Messrs. Kent & Brydon. Mr. John Jennings also contributed plants. Messrs. Dobbie & Co., Rothesay, had a splendid exhibit of Pansies, Sweet Peas, and other cut flowers. Mr. Forbes, of Hawick, had Carnations in bunches, &c.

THE MIDLAND COUNTIES CARNATION AND PICOTEE.

JULY 22.—The third annual exhibition was held in the Edgbaston Botanical Gardens, Birmingham, on the above date, in fine weather, with a large attendance of visitors, and a very fair display of blooms, and an exceptionally large number of exhibits for the season, as so many of the southern and northern collections were out of flower.

For twelve Carnations, 1st, Mr. T. Lord, Todmorden; 2nd, Mr. R. Sydenham, Birmingham; and five other prizes besides these.

For twelve Picotees, 1st, Mr. R. Sydenham; 2nd, Messrs. Thomson & Co. Eleven stands were staged—a fine lot.

For twelve yellow grounds, Mr. R. Sydenham was 1st; Messrs. Thomson & Co., 2nd.

For twelve selfs, 1st, Mr. R. Sydenham; 2nd, Mr. A. Midhurst.

The classes for six Carnations and six Picotees were also well filled, Mr. Crossley Head, Hebden Bridge, taking the 1st prize in each class.

For six fancy or yellow ground flowers, 1st, Mr. A. W. Jones; 2nd, Mr. A. R. Brown, with five other prizes following.

For six selfs, 1st, Mr. Wm. Kenyon, Bury, Lancashire; 2nd, Mr. E. Shaw, Manchester; with five other prizes following.

Nineteen classes were devoted to single blooms, with four prizes in seventeen classes, and seven each for selfs and fancies; a large number of blooms were staged. The premiers were:—Bizarre Carnation, Master Fred, exhibited by Mr. T. Lord; flake, do., Sportsman, exhibited by Mr. B. Simonite; self, do., Germania, exhibited by Mr. C. Turner; yellow-ground Picotee, Mrs. Robert Sydenham, exhibited by Mr. W. Spencer; heavy-edge, do., Mrs. Payne, exhibited by Mr. R. W. Jones; light-edge, do., Thomas Williams, exhibited by Mr. R. Sydenham.

In the class for twelve varieties of Border Carnations, five stems of each, Messrs. Thomson & Co. were 1st, with four other prizes following; and in the class for six varieties of Border flowers, three stems of each, Mr. C. F. Thurstan, Wolverhampton, was 1st, with three other prizes following.

Shower bouquets, sprays and baskets of Carnations and Picotees, were numerous and well done, Messrs. Thomson & Co. taking the 1st prize for bouquet; Mr. Thurles, Floral Depot, 1st for sprays; and Mr. Herbert, for a basket.

For six Carnations in pots, Mr. Sydenham was 1st; and Messrs. Thomson & Co. 2nd.

There were other classes also for Border Carnations, and for twelve blooms arranged for effect, and good competition in each.

MISCELLANEOUS.

To give more variety to the exhibition, special prizes were offered for bouquets and sprays of Sweet Peas, and some charming exhibits were brought out, Mrs. Thurles being 1st for a lovely shower bouquet; and Miss Francis Mayell 1st for a spray.

Certificates of Merit were awarded to Messrs. Thomson & Co., Sparkhill Nurseries, for seedling self Carnation Topsy, and seedling yellow-ground Picotee Mrs. Spencer, a very fine flower. To Mr. George Chaundy, Oxford, for a fine seedling scarlet bizarre Carnation Albert Whitham.

The Birmingham Botanical Society's Silver Medals were awarded to Mr. Robert Sydenham, for most meritorious exhibits in classes 1 to 4; and to Messrs. Hewitt & Co., Solihull Nurseries, for most meritorious exhibits in classes 29 and 36.

The Botanical Society's Bronze Medals, to Messrs. Thomson & Co. and to Mr. F. Perkins, Leamington, for second-best meritorious exhibits in each section.

Very handsome Medals, given by the Midland Counties Carnation Society, were awarded to honorary exhibits as follows:—Messrs. Hewitt & Co., Solihull, for tuberous Begonias and herbaceous and other cut blooms, a Silver-gilt Medal; Mr. J. White, nurseryman, Worcester, for herbaceous and other cut flowers, a Silver Medal; Mr. B. R. Davis, Yeovil, for a superb display of double Begonia flowers, a Silver Medal; Messrs. Thomson & Co., Sparkhill Nurseries, for a collection of border Carnations, a Silver Medal; Messrs. Jarman & Co., Chard,

Somerset, for herbaceous and other cut blooms, a Bronze Medal; Mr. Henry Eckford, Wem, Salop, for new and choice Sweet Peas, a Bronze Medal.

The *Gardeners' Magazine* Silver Medal was awarded to Mr. A. W. Jones, Handsworth, Birmingham, for general excellence of culture of exhibits.

GARDENING AND FORESTRY EXHIBITION.

JULY 26.—Another of the special fortnightly shows was held at Earl's Court on Wednesday last. The principal classes had been arranged for Carnations and Picotees, but these are very much past their best, and there were but few entries.

Mr. E. Shaw, Moston, Manchester, was 1st in the class for twenty-four Carnation blooms of not fewer than twelve dissimilar varieties; and for twenty-four yellow grounds, Mr. Charles Turner, Royal Nurseries, Slough, was 1st, with a better lot than we had expected.

In the class for twelve, the 1st place was taken by Mr. G. Chaundry, New Marston, Oxford. Mr. Chas. Turner was again 1st for twenty-four selfs and fancies; and Mr. E. Shaw in the class for twelve, who also took 1st for twenty-four Picotees.

Mr. G. H. Sage, gr. to the Earl of Dysart, Ham House, Richmond, was 1st for six varieties of self-coloured border Carnations, and Mr. Chas. Turner 1st for twelve bunches of any border variety or self-coloured Carnation, with Mrs. Apsley Smith a very fine scarlet. Messrs. Paul & Son, The Old Nurseries, Cheshunt, were 2nd for twelve bunches of border Carnations, in as many distinct varieties.

Hardy flowers, in twelve bunches, were best shown by Mr. G. H. Sage, with a very fine lot.

The class for twenty-four bunches of hardy flowers created quite a show. A very fine lot was staged by Messrs. Paul & Son, Cheshunt; and Mr. G. H. Sage was 2nd.

The 1st prize for six bunches of Sweet Peas, distinct, went to Mr. A. Newell, gr. to Sir E. Saunders, Fairlawn, Wimbledon.

Fruit was shown in quantity in all the classes, and the quality was good. The 1st class was for three varieties of Grapes, two bunches of each, Mr. T. Osman, Ottershaw Park Gardens, Chertsey, being 1st, with extremely good Black Hamburg, Foster's Seedling, and Muscat of Alexandria. Mr. Tidy, gr. to W. K. D'Arcy, Esq., Stanmore Hall, Great Stanmore, was a good 2nd.

Mr. J. Friend, gr. to the Hon. P. C. Glyn, Rook's Nest, Godstone, was 1st for three bunches of Black Grapes, with Black Hamburg; and Mr. W. H. Lees, The Gardens, Trent Park, New Barnet, 1st, for three bunches of white, with Muscat of Alexandria, large and good berries, but not quite coloured. The same exhibitor was 1st for one dish of Apricots.

The 1st prize for six Peaches went to Mr. A. Maxim, gr. to Hon. Miss Shaw Lefevre, Heckfield Place, Winchfield, for a rather uneven dish of Sea Eagle; Mr. W. H. Lees was 2nd.

Mr. W. Tidy had the best Plums, showing Jefferson's; and Mr. R. Grindrod, Whitfield Gardens, Herefordshire, the best Apples, with Irish Peach. The best dessert Pears came from Mr. J. Friend.

Amongst the miscellaneous exhibits, the most noteworthy were the following:—A large collection of hardy flowers and Begonia blooms, from Messrs. John Laing & Sons, Forest Hill, London, S.E. A group of Phloxes and Gaillardias, from Mr. E. F. Such, The Nurseries, Maidenhead. A collection of Sweet Peas, from Mr. Henry Eckford, Wem, Salop. A fine collection of Roses and Carnations, from Messrs. Paul & Son, Cheshunt. Messrs. D. Prior & Son, Colchester, had a large number of Roses. Mr. Geo. Wythes, gr. to the Duke of Northumberland at Syon House, Brentford, a large group of stove and greenhouse plants, and a collection of Melons and other fruits.

A large group of hardy flowers, in great variety, came from Messrs. Barr & Son, Covent Garden; and a collection of orchard-house trees, with fruit in variety, from Messrs. W. Paul & Son, Waltham Cross, Herts.

PLANT NOTES.

HYPERICUM MOSERIANUM.

This is a hybrid raised by M. Moser, of Versailles, from *Hypericum calycinum*—now a naturalised plant in Britain—and the Japanese species *H. patulum*. Mr. Wolley Dod, writing in the *Gardeners' Chronicle*

last April (p. 476), notes that with him in Cheshire it is not hardy, last winter having killed it to the roots beyond recovery. Within a dozen miles of London, however, it appears, so far as the two last winters afford experience, to be hardy enough, even in fairly exposed positions. Certainly it does not stand the cold as well as *H. calycinum*, which retains a certain amount of foliage throughout the winter, but, like *H. patulum*, is herbaceous, and killed back to the ground each year. Owing to long drought, the growth made this season is not so long or so stout as usual, but the plants are already blossoming very freely, and the flowers are remarkably bright in colour. In general character the plant is intermediate between the parents, the golden-yellow flowers measuring 2 inches across, the conspicuous tuft of stamens being brightened by red anthers. One flower only is open on a stem at one time, but a quick succession is maintained, and for a month or six weeks there will be no lack of blossom. *W. J. B.*

LAW NOTES.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN v. MESSRS. JAMES COCKER AND SONS, ABERDEEN.

IN our issue of April 8 last, we gave the decision of the Sheriff-Principal of Aberdeen, Banff, and Kincardineshire, in the case of Messrs. James Cocker & Sons, rosarians, Aberdeen v. the Royal Horticultural Society of Aberdeen, in which the Messrs. Cocker sought to have the Society "ordained" to receive various exhibits sent in by them, and intended for exhibition at the grand floral *fête* to be held in the Central Park, Kittybrewster, Aberdeen, in August last year, and to submit the same to the judges, in order that the pursuers might get such of the prize-money as might be awarded them. The Messrs. Cocker had been connected with the Society for many years, but in the spring of last year Mr. Cocker, senior, disapproved of the new departure the Society was making in taking their show from the Duthie Public Park and holding it at the Central Park, ultimately resigning his position as a director, and intimating his withdrawal of a contribution which his firm had promised towards the expenses of the show. The pursuers tendered their subscription some days after the last day fixed for payment, but it was returned to them by the directors, who further informed them that they could not accept their exhibits. Sheriff-Substitute Robertson found that the pursuers were barred from competing at the competition, as they had not paid their subscription within the stipulated time. He expressed his doubts as to the remedy sought, but explained that the defenders had waived that point. Defenders were found entitled to expenses. Sheriff-Principal Guthrie Smith, on appeal, recalled the interlocutor of the Sheriff-Substitute, and, although it was too late to pronounce an operative decree, he thought the action was properly brought, and found the defenders liable in expenses. The Society carried the case to the Court of Session in Edinburgh, and the Second Division has just given their decision, dismissing the action, with expenses. The Lord Justice-Clerk, who gave the leading decision, said the Messrs. Cocker had not sought the proper remedy, which was one of damages. An application before a sheriff, to have it ordered that certain plants should be put into a certain competition was unprecedented. As this show was to be held within six days of the application, it was quite impossible, even if the Court had jurisdiction, that any judgment could have been given effect to in time. Lord Young, who followed, remarked that if the pursuers were wronged, they had their remedy in an action of damages. He did not see how the Court could deal with an application for specific performance. It was manifest that to have an order for specific performance carried out in this case was an impossibility. He hoped, however, that the pursuers would not carry the action any further.

A PARTICK GARDENER'S ACTION.

An interesting case has recently been decided by Sheriff Guthrie at Glasgow. James Downes, gardener, Broomhill, Partick, brought an action against his employer, Geo. Breen, for damages for unjustifiable dismissal between terms. Mr. Breen brought a counter-action against Downes, whom he tried to hold responsible for certain plants in the hothouse and garden. The proof lasted several days, and after taking the case to avizandum, the Sheriff found Downes entitled to £10 damages; while in the counter-action he found that the dismissal had not been justified by sufficient evidence of gross failure of duty. Downes was allowed expenses in the joint actions. Mr. Breen has since intimated an appeal to Sheriff-Principal Berry.

TRADE NOTICE.

THE manufacturing firm of Mark Smith, Limited, carrying on the business of manufacturing chemists at Louth, Lincolnshire, have amalgamated with the Horticultural and Agricultural Chemical Co., Glasgow, under the title of Mark Smith, Limited.

CUCUMBER DISEASES.

WITHIN the present month we have received from correspondents residing in widely-separated parts of England, specimens of Cucumber-plants, fruit, leaves, bine, and roots, which were affected with some kind of fungous disease, against which the cultivators were unable to contend by the use of the usual remedies—charcoal-dust, lime, and soot; and in their embarrassment, with, in some cases, large sums of money involved in the cultivation of the plant, they have sought our assistance.

Dr. M. C. Cooke, to whom we forwarded two of the specimens, writes as follows:—

"C. U. The plants are rightly described as containing 'hard black substances enclosed with fluffy-white, which cause the bine to bleed and rot.' These hard substances are a "sclerotium," which is at first whitish, surrounded by a white woolly mycelium, like a white mould, but wholly barren. At length the nodules become harder, naked, and the surface turns black. In this condition, which is a resting-stage, the nodules are like a compact mycelium, or spawn, of a new growth. What this new growth may be can only be determined by watching, and artificial cultivation. In all essentials this disease resembles a disease of Potato haulms, first noticed in *Gardeners' Chronicle*, August 20, 1880, and afterwards traced to its development in a *Peziza* in *Gardeners' Chronicle*, September 15, 1883. This is the first time that we have heard of this disease as affecting Cucumber plants, although in the present case it is stated that it has been observed, more or less, for the past four years; and this year, attributing the disease as in some measure resulting from the soil, all fresh soil and manure were employed in the cultivation. We are assured that the only thing which keeps this disease in check is air, and to use no more water than is positively necessary. The use of sulphur, in any form, is not likely to be of any service, but with such a new form of disease, it is difficult to suggest any remedy or any provision for the future, except burning the diseased portions, so as to destroy the hibernating sclerotia. This disease is known in the United States, and Dr. Humphrey reports that the sclerotium has been cultivated, and found to produce a small *Peziza* (*Sclerotinia Libertiana*), closely allied to the one developed from the Sclerotium of Potato haulms."

"T. W.—The roots of the plants sent in are in a perfectly healthy state, and there are no galls, or trace of Nematode worms. The fruits are rotting at the ends, and the foliage also, but there are none of the symptoms of the disease attributed to bacteria, and none of the microbes have been observed in the diseased portions. All the rotting parts contain

mycelium, and a profusion of spores of one of the 'rots,' called 'Anthracnose' in the United States. As far as can be determined from the present specimens, it is probable that the fungus causing the mischief is *Glæosporium lagenarium*, with sporules 10 or 12 micromillimètres long—that is to say, smaller than in the typical form. Mixed with this fungus is another, but more sparingly, and more superficial, with curved, fusiform, three-septate conidia, which seems to be *Fusarium reticulatum*. It is noteworthy that this same *Fusarium* has always been recorded in company with *Glæosporium lagenarium*. The only remedy yet found to be of service in combating these mischievous and destructive fungi of the *Glæosporium*-type are the copper solutions, such as modifications of the Bordeaux Mixture or Eau Celeste. It would be far better to try a solution of 2 lb. of sulphate of iron in five gallons of water, as, for manifest reasons, sulphate of iron would be preferable to sulphate of copper, where articles of food are concerned." M. C. C.

FRUIT REGISTER.

IN a *Bulletin* of the Cornell University Agricultural Experiment Station, Professor L. H. Bailey reports on four recently-introduced fruits, viz.:—

Prunus Simoni, introduced from China, probably, and sent out by Simon Louis, of Metz. By some it is considered so close to the Nectarine as not worth botanical separation—which Nectarine it is like, however, is not stated. The flavour, nevertheless, is "mawkish and bitter," though the fruit is exceedingly attractive to look on. Professor Bailey, though commending it as an ornamental tree, and for the sake of its handsome fruit, says it is worthless for orchard cultivation, but may be useful for hybridising.

The Wine-berry (*Rubus phœnicolasius*) is a handsome Japanese Bramble, described by Maximowicz in 1872, and introduced to Kew in 1875, and figured in our columns in September, 1886. It is ornamental, but useless for fruit. Mr. Berckmans says the plant was known in Holland a generation ago.

The Crandall Currant.—This is none other than the fruit of *Ribes aureum*, one of the commonest of our spring-flowering deciduous shrubs, which does not often produce fruit in this country. Professor Bailey considers this type of Currant to have great promise, as the parent of a new and valuable race of small fruit. The fruits are borne singly, like those of the Gooseberry.

The Dwarf June berry (*Amelanchier canadensis* var. *oblongifolia*).—The fruits are as large as Marrow Peas, with a pleasant sweet taste, and an agreeable aroma, exceedingly attractive to robins [American ones].

Obituary.

EBENEZER SEWARD—A genial old florist was taken away in a sudden manner yesterday (July 21). Mr. Ebenezer Seward, who for many years had carried on a small business as Florist and Seedsman, at Godmanchester, walked over to Huntingdon on business, and whilst conversing with the gentleman whom he came to see, died suddenly in the chair in which he was sitting. He will be best remembered in the gardening world as the raiser or originator of *Pvethrum* Golden Feather (raised from a sport). Unfortunately for himself, he parted with it to E. G. Henderson & Son, of the Pineapple Nursery, Edgware Road, at the suggestion of the Rev. G. Pinder, late Vicar of Harford, before its great qualities as a carpet-bedder and edging-plant had been discovered, and before it had been ascertained that the plant reproduced itself perfectly from seed [Mr. Seward was, at that time, gardener to P. E. Tillard, Esq., of Godmanchester. See *Gardeners' Chronicle*, May 29, 1880, Ed.]. I have often conversed with him, and condoled with him on the nice little fortune he seemed to have missed by parting with a plant which became of universal importance. F. W. Cooper.

MR. J. PITHERS—Cultivators of the *Chrysanthemum* will learn with regret of the death of Mr. J. PITHERS, which took place at Chilwell, on Wednesday, the 26th inst. The deceased was *Chrysanthemum* grower to Messrs. J. R. Pearson & Sons for several years, and had proved himself to be an excellent cultivator; but he was well-known in the south of England as a successful exhibitor before going to the midland firm.

VARIORUM.

"THE NORTH BRITISH AGRICULTURIST."—We heartily congratulate this excellent Scottish Agricultural Journal on attaining its jubilee, a circumstance which has been happily celebrated by the issue of a special number, very much enlarged, and enclosed in a smart red cover. It is freely illustrated by portraits of distinguished agriculturists, and by a supplement presenting the portraits of twenty-four of the principal makers and dealers connected with the Scottish Agricultural Implement trade.

LIGHT, AND ANIMAL COLORATION.—The influence of light on vegetable coloration is well understood, and its physical and chemical effects have been carefully observed and explained by Sachs and other morphologists. But the physiological causes of animal coloration have not hitherto been revealed to us, though the matter has frequently been the subject of research. It is well known that several fresh-water and marine fishes change their colour from white to dark as soon as they have been transferred from a medium with a light-coloured bottom to another with a dark-coloured bottom. The common frog can change its colour to some extent in harmony with its surroundings; and so, too, can the green tree-frog, which is bright green among green leaves, but dark green when on the earth or among brown leaves. The causes of these changes have been recently investigated by W. Biedermann, who has discovered three different layers of cells which contribute to give the frog its varying colours. There is first, deeply seated in the skin, a layer of pigment-cells, which contain black pigment both in their interior and in their ramified processes, spreading within the skin. These cells are covered by a second layer of interference cells, containing bright yellow granules as well as granules of a pigment which sometimes appears blue or purple, and sometimes grey—the whole being covered with a transparent outer skin. The normal green colour of the frog is produced by a combination of blue and yellow interference cells appearing on a black background; but if the black pigment of the deepest layer is protruded into its ramifications, the colour of the animal becomes darker; if it retires deeper, the yellow granules of the middle layer become more apparent, and the frog assumes its lemon-yellow colour. Finally, when the yellow pigment gathers into round drops between the bluish interference cells, the skin acquires a whitish-grey tint. The same arrangement exists in other reptiles and amphibia. By a series of experiments it has been proved that light acts in as direct a way upon these pigment cells as it does upon the chlorophyll grains in the leaves of plants. *Newcastle Daily Chronicle*.

CERCIDIPHYLLUM JAPONICUM.—The second of the Japanese trees of the *Magnolia* family, is the representative of a monotypic endemic genus. It is the most interesting, as it is the largest deciduous tree of the empire, and more than any other of its inhabitants, gives their peculiar appearance and character to the forests of Yezo. Of the botanical characters and relationship of this tree we shall have something to say in a later issue, in connection with a figure of the male and female flowers, for *Cercidiphyllum* is dioecious, and produces its minute apetalous precocious staminate and pistillate flowers on different individuals. In Yezo, *Cercidiphyllum* inhabits the slopes of low hills, and selects a moist

situation and rich deep soil, from which the denseness of the forest and the impenetrable growth of dwarf Bamboo, which covers the forest floor, effectually check evaporation. In such situations it attains its greatest size, often rising to the height of 100 feet, and developing a cluster of stems 8 or 10 feet through. Sometimes *Cercidiphyllum* forms a single trunk 3 or 4 feet in diameter, and free of branches for 50 feet above the ground; but more commonly it sends up a number of stems, which are united together for several feet into a stout trunk, and then gradually diverge. The trunk of *Cercidiphyllum* is covered with thick pale bark, deeply furrowed, and broken into narrow ridges. Similar bark covers the principal branches; these are very stout, and issue from the stem nearly at right angles, gradually drooping, the slender reddish branchlets in which they end are often decidedly pendulous. The upper branches and branchlets are erect, the whole skeleton of the tree showing even in summer through the sparse, small, nearly circular leaves, which are placed remotely on the branches; in the autumn they turn clear bright yellow. In port and in the general appearance of its foliage, *Cercidiphyllum*, as it appears in the forests of Yezo, might at first sight be mistaken for a venerable Ginkgo tree, which, in old age, has the same habit, with pendulous branches below and erect branches above; but the trunk and its covering are very different in the two trees. *Cercidiphyllum* is distributed from central Yezo southward nearly through the entire length of the Japanese islands. At the north, it grows at the sea-level, and is very common; but on the main island it is confined to high elevations, and is rather rare. Except in Yezo, it seldom grows more than 20 or 30 feet high, and I never saw it, except in that island, below 5000 feet elevation, where, as at Yumoto, in the Nikko Mountains, it is scattered through the lower borders of the Hemlock forest. *Cercidiphyllum* is a valuable timber tree, producing soft, straight-grained, light yellow wood, which resembles the wood of *Liriodendron*, although rather lighter and softer, and probably inferior in quality. It is very straight-grained, and easily worked, and in Yezo it is a favourite material for the interior finish of cheap houses, and for cases, packing-boxes, &c. From its great trunks the Ainos hollowed their canoes, and it is from this wood that they make the mortars found in every Aino house, and used in pounding grain. *C. S. Sargent, in Garden and Forest.*

BOTANY AND ART.—It is the duty of the artist to study congruity in the vegetable forms he brings together, to place every plant in a natural situation, and to imitate the general outline of plants correctly. Some knowledge of botany is required to enable him to do so with confidence, and the greater his acquaintance with the science, the greater will be his capacity for imparting variety to his scenes, without trenching on their truth to Nature. But when the artist has to compose a group of small extent, where a few figures are represented, of a large size, in a limited space, so near the eye of the spectator that every feature and emotion of the countenance is a part of the picture, then, whether it be a sylvan or a garden scene, there cannot be too faithful a representation of surrounding objects. The simple trunk of a tree has its character, varying with the species—the stem of the Oak, of the Pine, of the Beech, or of the Birch—each has its own peculiar surface to be studied by the artist, not to speak of the widely different ramification and foliage of those trees. And so also, and in a greater degree, of the small plants in the foreground. The commonest way-side weeds have a picturesque character. But how seldom do we see a Bramble or a wild Rose naturally represented, or even a Thistle or a Dock. The things that figure in many modern pictures for Brambles or Roses (where the artist is so far ambitious as to attempt a definite representation of them) have no prototype in Nature, and would simply remind us of the ornaments of Christabel's chamber, which were "All cut out of the carver's brain," save that they

are deficient in the grace and delicacy of the great fancies described by the poet. Surely we want a Wilkie or a Teniers for our woods and hedges, to picture faithfully the wildlings of Nature. If a stable-yard and a village alehouse can be refined into a graceful picture, how much more might the thousand picturesque nooks of our island supply subjects to the artist who would be contented to study them minutely, and still with freedom, not in the servility of a mere copyist. Even a subject so homely as the garden of the sluggard, where "the wild Briar, the Thorn and the Thistle grew broader and higher," painted with botanical truth, and in a genial spirit, would form no bad picture. *The Architect.*

DROPSY IN THE TOMATO.—Mr. G. F. ALLANSON records in one of the Bulletins of the Cornell University Experiment Station (May, 1893) a diseased condition of the Tomato, in which the leaves were bent downwards, whilst the leaflets were upturned. The veinlets, midrib, petioles, and surface of the stem, presented numerous elevated areas of a "frosty" aspect, not unnaturally attributed to fungus growths. Microscopic examination, however, showed no fungi, but an overgrowth of the cells of the epiderm and subjacent layers. Experiments were made (1) by inoculating healthy plants with diseased material, and (2) by endeavouring to separate any germs that might be present, to cultivate them, and inoculate with them. Although various bacteria were thus found, and isolated, yet they produced no effect on the healthy plant. It was therefore considered probable that the trouble was due to excess of root pressure over transpiration, in other words that more water was absorbed than the plant could deal with. Transpiration is therefore affected, and the process still further obstructed by the humidity of the house, and the diminished intensity of the light. If the temperature of the soil be high in proportion to that of the air, water is apt to accumulate in the plant. The aim should be to have the temperature of the air considerably higher than that of the roots, to secure sufficient exposure to light, and adequate ventilation. To prove the correctness or otherwise of the inferences, experiments were made by injecting water into the tissues of the Tomato-plant. In this way, changes in the construction of the tissues were produced of a similar character to those observed. The subject is treated in a thoroughly scientific method, so that the Bulletin, within its limits, is one of the most complete applications of science to the explanation of healthy and of diseased function and structure that we have seen.

BANANAS IN COSTA RICA.—It is stated, says Mr. JOHN R. JACKSON, of Kew, that the cultivation and export of Bananas from Costa Rica continues to increase, and that a large company, called the "Banana Company of Matura" has now about 2000 acres under cultivation, and expect in course of time to export 40,000 bunches a month, which would increase the value of the present exports by about £35,000.

MARKETS.

COVENT GARDEN, July 27.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

The soft fruit is now finished, and heavy supplies of top fruit are now taking their place, prices ruling low. Trade quieting down. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, $\frac{1}{2}$ -sieve	1 0-4 6	Oranges, per case	20 0-30 0
Currants, black, $\frac{1}{2}$ -sieve	4 0-...	Peaches, per doz.	1 0-8 0
Cobs, per 100 lb.	...	Pine-apples, St. Michael	...
Gooseberries, half-sieve	1 6-2 0	Plums, p. half-sieve	2 0-4 0
Grapes, per lb.	0 9-1 6		
Lemons, per case	12 0-20 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	1 0-...	Mushrooms, punnet	2 0-...
Beet, red, per dozen	2 0-3 0	Mustard and Cress,	...
Carrots, per bunch	0 4-0 6	punnet	0 4-...
Cauliflowers, each	0 3-0 6	Parsley, per bunch	0 3-0 6
Cucumbers, each	0 4-0 8	Shallots, per lb.	0 6-...
Endive, per dozen	2 0-3 0	Tomatoes, per lb.	0 6-0 9
Herbs, per bunch	0 9-1 0	Turnips, per bunch	0 4-0 6
Lettuces, per doz.	1 6-2 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	2 0-4 0	Fansy, per doz. bun.	1 0-2 0
Aster (French), bun.	1 0-1 6	Orchids:—	
Bouvardias, per bun.	0 6-1 0	Cattleya, 12 blms.	6 0-12 0
Calceolarias, doz. bun.	4 0-6 0	Odontoglossum	
Carnation, doz. bun.	4 0-9 0	crispum, 12 blms.	2 0-6 0
—dozen blooms	1 0-3 0	Pelargoniums, scar-	
Cornflower, 12 bun.	1 0-3 0	let, p. 12 bun.	3 0-6 0
Eucharis, per dozen	3 0-4 0	—12 sprays	...
Gardenia, per dozen	1 0-3 0	Poppy, doz. bunches	1 6-4 0
Heliotrope, 12 sprays	0 3-0 6	Primula, dble, p. bun.	0 6-1 0
Lilium lancifolium,		Pyrethrum, 12 bun.	2 0-4 0
—p. doz. blooms	2 0-4 0	Roses, doz. bunches	3 0-8 0
—Harrisii, p. doz.	2 0-5 0	—Tea, per dozen	0 6-2 0
Maiden Hair Fern,		—coloured, dozen	2 0-4 0
12 bunches	...	—yellow (Mare-	
Marguerite, 12 bun.	1 6-3 0	chale), per doz.	1 6-6 0
Mignonette, 12 bun.	2 0-4 0	—red, per dozen	1 0-1 6
Myosotis, 12 bunches	2 0-3 0	Stocks, per bunch	...
Peas, Sweet, various,		Sweet Sultan, 12 bun.	2 0-4 0
doz. bunches	3 0-6 0	Tuberose, 12 blms.	0 4-0 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Heliotrope, per doz.	4 0-6 0
Aspidistra, per doz.	15 0-30 0	Hydrangea, per doz.	12 0-24 0
—specimen, each	7 6-21 0	Ivy Geranium, doz.	4 0-6 0
Balms, per doz.	4 0-6 0	Lilium Harrisii	...
Campanula, per doz.	6 0-12 0	—lancifolium, dz.	12 0-18 0
Calceolarias, per doz.	4 0-6 0	Lobelia, per doz.	3 0-6 0
Cockscombs, per doz.	4 0-6 0	Marguerite, per doz.	6 0-12 0
Crassula, per doz.	18 0-42 0	Mignonette, per doz.	...
Cyperus, per dozen	4 0-10 0	—pots	4 0-6 0
Dracena, each	1 0-5 0	Musk, per doz.	...
Ferns, various, doz.	4 0-9 0	Nasturtiums, p. doz.	4 0-6 0
Ferns, small, per	...	Palms, various, each	10 6-84 0
100	...	—specimens	...
Ficus elastica, each	1 6-7 6	Pelargonium, p. doz.	6 0-12 0
Foliage plants, doz.	12 0-42 0	—scarlet, p. doz.	3 0-6 0
Fuchsia, per doz.	6 0-9 0		

POTATOS.

Supplies are heavy, and prices are much easier. Best samples, 6s. to 6s. 6d.; medium, 5s. to 5s. 6d.; ordinary, 4s. 6d.

SEEDS.

LONDON: July 26.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that the chief interest just now is centred in *Trifolium incarnatum*, a good quantity of which, on early contract purchases, is due shortly in England. Whether the whole of same can be delivered here in time is a puzzling problem. The new Essex Giant Seed Rye is cheap and good. Extreme prices are at present asked for new winter Vetches. For spring Tares there is still a free sale. Mustard keeps scarce and dear. New Rapeseed, on the other hand, is very reasonable. Peas and Haricots keep steady. For Canary-seed there is a quiet sale, on former terms.

FRUITS AND VEGETABLES.

BOROUGH: July 25.—Quotations:—Peas, 2s. 6d. to 3s. per bushel; Cabbages, 3s. to 5s. per tally; Parsley, 1s. 6d. to 2s. per dozen bunches; Turnips, 2s. 6d. to 4s.; Onions, Egyptian, 4s. 6d. to 5s. per cwt.; Cherries, 4s. to 5s.; Plums, 3s. to 4s. per half-sieve.

SPITALFIELDS: July 25.—Quotations:—Peas, 2s. 6d. to 3s. 6d. per bushel; Cabbages, 2s. to 5s. per tally; Turnips, 2s. 6d. to 4s.; Onions, Egyptian, 4s. 6d. to 5s. per cwt.; Cherries, 4s. to 5s.; Plums, 3s. to 4s. per half-sieve.

STRATFORD: July 26.—This market has been well supplied with all kinds of produce during the past week, and a good trade done at the undermentioned prices:—Cabbages, 2s. to 5s. per tally; Cauliflowers, 9d. to 1s. per dozen; Turnips, 3s. to 3s. 6d. per dozen bunches; Carrots, household, 2s. to 4s. do.; Mangels, 30s. to 35s. per ton; Onions, Egyptian, 5s. to 6s. per bag; Apples, English, 2s. to 3s. per bushel; Plums, 2s. to 3s. 6d. per half-sieve; do. flats, 4s. 6d. to 6s. per bushel; Gages, 2s. 6d. to 3s. 6d. per half-flat; do. baskets, 2s. to 2s. 6d. per basket; Pears, 1s. 6d. to 2s. 6d. per half-sieve; 3s. to 4s. per flat.

FARRINGTON: July 27.—Quotations:—Apples, 4s. per bushel; William Pears, 3s. per case; Greengages, 2s. per basket; English Plums, 3s. 6d. per half-bushel; Melons, 7s. per case; Lettuce, 1s. 6d. per score; Cabbages, 1s. 3d. per dozen; Tomatoes, 5d. per lb.; Peas, 2s. 6d. to 3s. 6d. per bushel; Turnips, 2s. 6d. to 4s. per cwt.; Marrows, 1s. 6d. per dozen; Onions, Egyptian, 4s. 6d. to 5s. per cwt.; Parsley, 1s. 6d. to 2s. per dozen bunches.

POTATOS.

BOROUGH: July 25.—Quotations:—New: 5s. to 7s. per cwt. No quotations for Old.

SPITALFIELDS: July 25.—Quotations:—New: 5s. to 7s. per cwt.

STRATFORD: July 26.—Quotations:—English Kidneys, 90s. to 160s.; Hebrons, 110s. to 120s.; Snowdrops, 100s. to 120s.; Bruces, 100s. to 110s. per ton.

FARRINGTON: July 27.—Quotations: Re! Beauties, 120s. to 130s.; white do., 120s. to 130s.; Snowdrops, 130s. to 140s.; Regents, 120s. per ton.

LONDON AVERAGES: July 26.—New: English Hebrons, 100s. to 120s.; Snowdrops, 100s. to 120; Kidneys, 90s. to 120s. per ton; Canary, 7s. to 9s., and other foreign kinds, 4s. to 6s. per cwt.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending July 22, and for the corresponding period in the previous year:—1893: Wheat, 28s. 5d.; Barley, 20s. 3d.; Oats, 21s. 9d. 1892: Wheat, 29s. 3d.; Barley, 22s. 10d.; Oats, 21s.

HAY.

Averages.—The following are the averages of the prices during the past week at the principal metropolitan markets:—Clover, prime, 140s. to 165s.; new, do., 115s. to 130s.; inferior, do., 100s. to 120s.; hay, best, 145s. to 165s.; inferior, do., 90s. to 100s.; new, mixture, 115s. to 130s.; and straw, 42s. to 50s. per load.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.			
	ACCUMULATED.					More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.	
	Mean for the week ending July 22.										
	Above (+) or below (—) the Mean for the week ending July 22.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.						
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.						
0	0	aver	88	0	+ 432	— 57	10	+ 119	21.0	15	25
1	1	—	99	0	+ 268	— 21	2	+ 98	13.0	38	32
2	1	—	114	0	+ 287	— 62	1	+ 85	10.8	40	38
3	0	aver	131	0	+ 372	— 37	2	+ 83	9.7	29	44
4	1	—	122	0	+ 494	— 47	1	+ 83	10.4	37	41
5	1	—	133	0	+ 424	— 43	2	+ 79	10.5	30	45
6	1	—	99	0	+ 400	— 63	6	+ 98	18.2	42	37
7	0	aver	120	0	+ 512	— 91	1	+ 87	13.2	43	37
8	0	aver	127	0	+ 553	— 70	5	+ 82	15.7	35	48
9	0	aver	106	0	+ 431	— 104	6	+ 104	15.6	47	31
10	0	aver	119	0	+ 460	— 100	3	+ 93	15.5	34	35
*	1	+	141	0	+ 630	— 52	3	+ 87	12.2	41	55

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts:—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts:—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 22, is furnished from the Meteorological Office:—

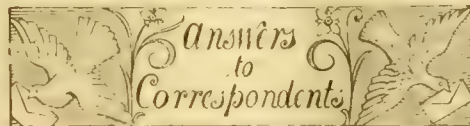
"The weather was again very unsettled, with heavy falls of rain in many parts of the kingdom. Thunderstorms occurred at several of our northern stations on the 16th or 17th.

"The temperature was slightly below the mean in most of the 'Wheat-producing' districts, as well as in 'Scotland, W.,' but in other localities it agreed almost precisely with the normal. The highest readings, which occurred at various times in the different districts, but mostly about the middle of

the week, were, as a rule, a little above 70°. In the West and North of Scotland, however, the thermometer did not reach that point; while in 'England, N.W.' (at Stonyhurst), it rose to 76°. The lowest readings, which were also observed on varying dates, ranged from 39° or 40° in the 'Scotch districts,' to 48° in 'England, S.' and 'England, N.W.,' and to 56° in the 'Channel Islands.' On the night of the 19th, the thermometer in many parts of England did not fall below 60°.

"The rainfall varied considerably, not only in different parts of the kingdom, but also in neighbouring portions of each district. In 'England, N.E.,' the 'Midland Counties,' 'England, N.W.,' and 'Ireland, S.,' there was a deficit—mostly very slight; but in other districts the amount was more than the mean, the excess being large at many of our western and extreme northern stations.

"The bright sunshine was also very irregularly distributed. In the eastern and southern parts of England, as well as in 'Scotland, N.,' there was a deficiency; but in other districts the amount was in excess of the mean. The percentage of the possible duration ranged from 15 in 'Scotland, N.,' 29 in 'England, E.,' and 30 in 'England, S.,' to 47 in 'Ireland, N.'"



* * The great demands on our space compel us to postpone some, and pass over other communications that were marked for insertion.

ARECA NUTS: W. G. The fruit of a species of Palm—Areca Catechu.

BEGONIAS: J. C. The leaves are affected by a species of rust fungus such as occurs on Gloxinias, Grapes, &c., and may be induced by the same errors in culture. It cannot be cured; avoid checking growth by cool currents of air blowing through the lower ventilators.

BRICK WALLED GLASSHOUSE: A. P. If the foundations be made in the ground, it becomes a landlord's fixture, and may not be removed by the tenant, unless the former is willing.

CARNATION: J. Cobban & Son. Your seedling of a dark crimson colour, is an excellent border variety; hardy, very double, large, full, and fragrant, and being fit for cutting earlier than most; it is an acquisition for market growers.

CARNATIONS AND TOMATOS: J. B. Send your full address, and we will communicate with you. You will do well to use the Bordeaux Mixture on your Tomatos, if they have not got too bad. We gave the recipe for this mixture in our issue for July 1.

CORRECTION.—Owing to a misprint in our notice of the Royal Horticultural Society's show at Islington, the date was given in our last issue as August 22 instead of August 29. It will remain open till September 1.

DISEASED LILIES: Lily. The too-common Lily fungus. Try spraying with Bordeaux Mixture next early season. We are aware the fungus is internal, but the copper solution may be useful nevertheless. Burn the diseased stems.

FUNGUS FROM A COAL-PIT: G. W. It is a Polyporus (Fomes annosus, Fr.), not uncommon in mines, but stunted and deformed.

HEDGE UNDER SHADE TREES: B. O. P. Amongst deciduous shrubs the best for the purpose is the Cornelian Cherry (Cornus mas.), as it may be close clipped twice or thrice a year for a number of years without apparently being the worse for it. There are variegated forms of it.

HYACINTHS GROWN IN WATER: D. B. Philip Miller was, we believe, the first to bring this practice into notice, by a publication of an article in the *Philosophical Transactions*, vol. xxxvii.

LETTUCE: A. M. The plants were injured by the young of woodlice, and in the case of those sent by "A. M." a fungus had completed their destruction.

LETTUCES TO CUT IN HOUSES, AT END OF FEBRUARY: New Reader. We assume that the seed will be sown in the open air, and the plants also grown there till they have become somewhat less than half-grown before they are lifted early in November, and planted in the houses. Good varieties of Cabbage Lettuce are:—(Veitch's) Golden Queen, early dwarf, compact, remaining a long time in good condition, and one of the best for early forcing; Perfect Gem (Veitch's), compact, close, solid, does not bolt readily; All the Year Round, Early Paris Market, and Lee's Hardy Green. Cos varieties: Brown Bath, Hick's Hardy White, and London White. The seeds of the above may be sown in the first week in September, thinly, in drills, and great care be taken to prevent drawing, thinning them early to 6 or 8 inches apart. We should not recommend sowing seed in the houses before the first week in February, and then it should be done in pans or boxes placed close to the glass in a temperature at night of 55° to 60° by 65° to 68°. Very little forcing can be done before the sun has gained some power—say, in the middle of February—and then it must be very gradual; all the more reason to have strong plants raised in the autumn. Great attention must be paid to ventilation, so as to avoid loss by damp, and every ray of light should reach the plants from November to February; therefore, keep the glass as clean as possible. The temperature at that period may be 45° to 50°, with a 5° rise by day.

MARKET CUCUMBERS: New Reader. Sion House Improved and Masters' Prolific for winter fruiting, Lockie's Perfection and Telegraph for summer, also the second-named variety.

MELONS: T. W. The germination of the seeds within the fruit is not uncommon.

NAMES OF FRUITS: J. S. Apple, Red Astrachan.—F. D. 1, New Hawthornden; 2, Duchesse of Oldenburgh; 3, Probably Stone's Apple.—M. I. Gooseberries: 5, Crown Bob; 6, Yellow Rambullion. Peach: Pavie de Pempone, a worthless clingstone; the other Peaches were quite rotten.

NAMES OF PLANTS: E. C. C. D. Lord Anson's Pea.—J. A. C. *Lysimachia thyrsiflora*.—Wm. W. 1, the Orchid cannot be recognized from the bad specimen sent; 2, *Campanula persicifolia*; 3, *Campanula persicifolia*, double-fl.; 4, *Campanula persicifolia*; 5, *Campanula isophylla*; 6, *Campanula Trachelium*, double white.—J. S. Turkey Oak, *Quercus cerris*.—W. C. & Son. We cannot name your Oak with certainty. We believe it to be one of the numerous forms between *Q. suber* and *Q. ilex*.—G. H. Balm, *Melissa officinalis*, broad; Savory, *Satureia montana*, narrow, both S. European.—Folkstone, Burnet, *Poterium Sanguisorba*; the young leaves are used in salads in France. We have very rarely seen them so used here.—Dr. Slims, *Melilotus officinalis*.—J. S., *Sevenoaks*, 1, *Athyrium filix-femina*; 2, *Lomaria procerca*; 3, *Onychium japonicum*; 4, *Todea africana* (barbara); 5, *Litobrochia vespertilionis*; 6, *Lomaria nuda*.—S. S., *Crawley*, 1, *Adiantum hispidulum*; 2, *Adiantum tenerum*; 3, the same; 4, *Aspidium coriaceum*; 5, *Aspidium aristatum variegatum*; 6, *Pteris serrulata cristata*; 7, *Pteris longifolia*.—J. J. 1, *Justicia carnea*; 2, *Lantana*, a garden variety; 3, *Campylobotrys refulgens*.—C. S., *Stirling*, 1, *Hæmanthus puniceus*; 2, *Lythrum Salicaria*; 3, *Sanguisorba canadensis grandiflora*; 4, *Sedum spurium*; 5, *Helenium autumnale*; 6, *Panicum plicatum*.—J. R. 1, *Odontoglossum Lindleyanum*; 2, *Selaginella Brownii*; 3, *S. denticulata*; the other, without number, is *S. Wildenowii*.—F. P. D. 1, *Aspidium spinulosum* (Lastrea); 2, *Aspidium (Polystichum) angulare*; 3, the same species; 4, *Lomaria alpina*; 5, *Lastrea filix-mas*; 6, *Pteris quadriaurita*; 7, *Dicksonia antarctica*; 8, *Aspidium lepidum*.—G. H. S. 1, *Carica papaya*; 2, *Clerodendron fragrans flore-pleno*; 3, *Solanum Warscewiczii*; 4, Send fair specimen; 5, *Apheandra Porteana*; 6, *Bignonia argyrea violascens*; 7, *Momordica charantia*.—Ipomœa, *Convolvulus mauritanicus*.—G. McKenzie, 1, *Sidalcea oregana*; 2, *Thalictrum angustifolium*.

NOTICE OF LEAVING EMPLOYMENT: *A. P.* Being a weekly servant, a week's notice is sufficient on either side.

PORTLAND CEMENT HOT-WATER PIPE JOINTS: *A. P.* It is safe enough as a joint, if the space between the pipe and collar is filled with a rather liquid cement, and the pipes are firmly supported. It is well to put into the joint a ring of tow or oakum before running in the cement.

PRUNUS PISSARDI: *J. B.* This may be expected to fruit freely in future. It has not long been introduced.

ROSES: *Jersey.* We believe that the Rose finds no place in the sculptures or paintings of ancient Egypt. Hehn (*Wanderings of Plants*) says that the Greeks were earlier acquainted with the Rose than the Hebrews. Basing his statement upon linguistic considerations, Hehn traces the spread of the Rose from Media by way of Armenia and Phrygia to Greece.

SHANKING: *Y. Y. Z.* It is due to some fault of nutrition; the balance between absorption by the roots and transpiration by the leaves is somehow upset, how we cannot tell; you should be the best judge.

SIX CHRYSANTHEMUMS FOR CUTTING FOR MARKET: *New Reader.* Elaine, white early; La Nympe, white early; La Triomphante, white, suffused with purple-rose, mid-season, tall; William Holmes, chestnut-red, tipped gold, early; Val d'Andorre, orange-red, mid-season; Margot, rosy-salmon, early, large recurving petals. The above are Japanese reflexed varieties. Six Japanese, not reflexed:—Source d'Or, orange, gold shading, mid-season; Thunberg, soft yellow, mid-season; Mr. H. Cannell is like the last, but finer; Mdle. Lacroix, white, large, full, early, not tall; L'ile des Pairs, yellowish-crimson, early, very free; Lady Selborne, white, early; Flamme de Punch, orange, shaded red or crimson, early.

SPAWN: *S. H. M. H.* Probably, toad's spawn.

TOMATO DISEASED: *J. J.* Dress the foliage with the Bordeaux Mixture. See our issues for July 1 and July 22 this year. The fungus is a *Peronospora* allied to that of Potatoes.—*F. G. M.* The name and nature of the disease affecting your Tomatoes, and the cure for the same, have been very frequently given in these pages, and so lately as July 1 (p. 19) and July 22 (p. 108).

VINE DISEASE: *J. S. and J. K.* The disease is the same as commented on by Mr. Blackmore. It is now known to be caused by a fungus-like creature allied to that which causes clubbing in Cabbages. We shall have more to say about it when the pressure on our space abates.

WOODLICE IN CUCUMBER PITS: *G. T.* Pour boiling water into their haunts. Diluted carbolic acid would have a good effect used in the same manner. Many could be trapped in flower-pots or drain-pipes stuffed with hay.

COMMUNICATIONS RECEIVED.—*J. Tullet*,—*W. J.*—*E. P.*, Ghent.—*W. R.*—*W. & N.*—*W. D.*—*Sutton & Sons*,—*T. G.*—*W. McD.*—*H. G.*, Cardiff.—*M. C. C.*—*A. P.*, Halstead.—*T. C.* & *Co.*—*H. B.*—*J. H.*—*J. F. S.*—*A. P.*—*J. S. W.*—*W. Smith.*—*C. N.*—*T. G. H.*—*P. W. A.* (too late, now).—*A. B. R.*—*J. B.*—*F. Q. C.*—*W. D.*—*H. G.*—*C. P.* (on pruning, where do you reside, and what is your name?).—*Dr. F. K.*—*H. W. W.*—*R. D.*—*G. S. W.*—*R. M.*—*W. Miller* (next week).—*J. B.*—*F. M.*—*V. H. M.*—*J. G. Baker.*—*J. S.*—*T. B.*—*H. C. P.*—*B. W.*—*R. M.*—*W. H.*—*W. W.*—*C. M. P.*

PHOTOGRAPHS RECEIVED WITH THANKS.—*G. F. W.* (4)—*J. W.*—*P. W. S.*, Cannes (2).—*J. A.*

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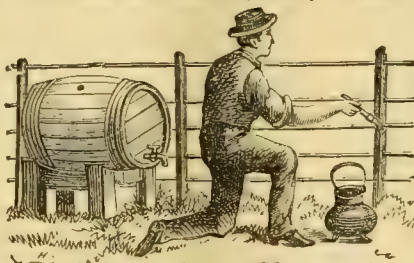
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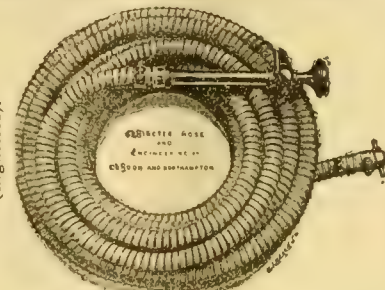
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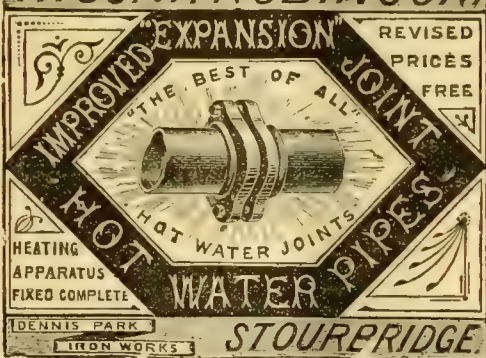
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GARDENER (SINGLE-HANDED, or where help is given).—Age 29; fourteen years' practical experience; and good references.—F. WORRALL, Stoneleigh, Kenilworth, Warwickshire.

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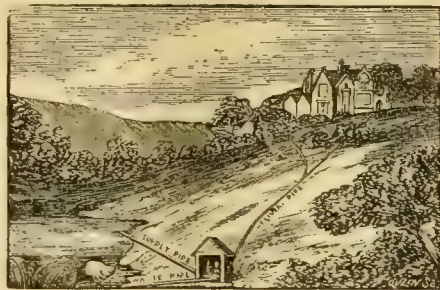
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Fig. A.



This Ram raises a portion of the same water that works it.



View of Ram worked by water from a spring, and supplying the house and garden on the hill.

Fig. B.



This Ram, whilst worked by a stream of impure water, will pump clean water from a well or spring.

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"DEAR SIR.—In September of last year I applied to you for a Hydraulic Ram for the purposes of the Usk Waterworks, to be capable of raising 27,000 gallons per day to a height of 127 feet, with a working fall of driving water of 27 feet, and on your guaranteeing that performance, I gave you an order for the Ram. The Machine you supplied has now been put to work, and I have much satisfaction in saying that it far and away exceeds in its performance my most sanguine expectations, and possibly yours also. I have just completed a series of exhaustive tests with the following results:—

"Working fall of driving water, 30 feet; vertical height raised, 127 feet; length of rising main, 850 feet from Ram to outflow; length of supply pipe, 200 feet; gallons per hour raised 1512; driving water used per hour, 883 gallons, showing the remarkable and gratifying result of 83 per cent. of efficiency.

"The tests were carefully made and repeated, the water measured, and levels properly taken. Several trials were made, and I shall be glad to give any Engineer interested in the subject facilities for repeating the tests at the spot.

"I may here state that for the rising main I used a large diameter of pipe in order to reduce friction, with excellent effect.

"Yours faithfully, T. DYNE STEEL."

From C. PAGE WOOD, Esq., Wakes Hall, Wakes Colne, Essex, January 11, 1889.

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Yours faithfully, C. PAGE WOOD."

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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2745.

No. 345.—VOL. XIV. {THIRD SERIES}

SATURDAY, AUGUST 5, 1893.

[Regt. as a Newspaper. {PRICE 3d. POST-FREE, 3½d}

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To the Trade.

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MESSRS. PROTHEROE AND MORRIS beg to announce that they have now arranged their SALES of DUTCH BULBS for the ensuing season.

SPECIAL TRADE SALES will take place as follows:—
 August 21, over 2000 lots August 31, over 1500 lots
 August 24, over 1500 lots Sept. 19, over 1200 lots
 August 28, over 1500 lots Sept. 21, over 1200 lots
 Also a grand lot of SPECIAL TULIPS, and a magnificent lot of ROMAN HYACINTHS will be included.

The whole for Sale absolutely Without Reserve.
 Messrs. P. & M. have personally inspected the Farms in Holland, and made special arrangements for consignments of Bulbs for these Sales from some of the largest Growers, who can be depended upon both for the quality of the Bulbs and correctness of names.

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About 1 mile from Langley Station.
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On view day prior and morning of Sale. Catalogues may be had of Mr. Phillips, Head Gardener, on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, August 11, at half-past 12 o'clock, 700 **ODONTOGLOSSUM ALEXANDRE** (finest Carderian strain), including many distinct plants, in grand condition, and ready for immediate potting; 100 **CATTLEYA LABIATA AUTUMNALIS**, mostly in flower; 50 **LELIA PURPURATA**, established plants, all unfowered; **PILUMNA NOBILIS**, **DENDROBIUM PHALENOPSIS SCHROEDERAE**; 50 lots of healthy **ESTABLISHED ORCHIDS**, from private collections; a collection of choice **ANGREJUMS**, quantity of bulbs from Ceylon, **ORCHIDS** in **FLOWER and BUD**, &c.

On view morning of Sale, and Catalogues had.

Monday, August 21.

ENORMOUS CONSIGNMENT of LILIES from BERMUDA, received direct for unreserved Sale.
 56,630 **LILIUM HARRISI**, 5 to 7, 7 to 9, 9 to 11, and 11 to 14 inches.

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MESSRS. PROTHEROE AND MORRIS will include the above in their **SPECIAL TRADE SALE** of **DUTCH BULBS** on **MONDAY**, August 21.

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WANTED, a NURSERY, mostly Glass, near **London** preferred.
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WANTED, a Small NURSERY, with **Cottage** attached, near **Wimbledon** preferred.
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TO BE LET, with **Immediate or Michaelmas** Possession, the well-known, old-established Peterborough **BUSINESS**, comprising a **NURSERY FARM** of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the Town. Also, a superior **SEED SHOP and STORE**, in a first class central position; and a **FLOWER STAND** on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, **FOX and VERGETTE**, Estate Agents, Peterborough.

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The hardiest cool greenhouse plant in existence, as easy to grow as old propagate as Geraniums; dense heads of brilliant and rich unadorned red flowers from January to July, individual trusses measuring 10 in. across, 40 to 60 flowers in one truss; everybody will grow this truly magnificent gem once they see it; sent at by several leading firms short time ago 2s. 6d. each rooted cutting. I can offer strong, sturdy, & well-rooted plants, 2 for 1s. 4, 4 for 2s. 3d., 6 for 3s.; extra large, 1s. 3d. each.
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EXHIBITIONS.

MAIDENHEAD HORTICULTURAL SOCIETY.
ANNUAL SHOW at **CURTISFIELD**, Maidenhead, on **THURSDAY**, August 10, 1893. Entries close on August 4.
 Schedules and particulars from—
 Queen Street Chambers. **CHAS. A. VARDY**, Hon. Sec.

CARDIFF HORTICULTURAL SOCIETY.
FIFTH ANNUAL SHOW, August 15 and 16.
PRIZES and Specials, £300. Entries close August 8.
H. GILLET, Secretary.
 65, Woodville Road, Cardiff.

READING HORTICULTURAL SOCIETY,
SUMMER SHOW, Forbury Gardens, Reading, August 16, 1893.
PRIZES, £170. Entries close August 12. Schedules and all particulars from—
 Dunollie, Bulmershe Road, Reading. **WM. L. WALKER**, Sec.

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SPECIAL OFFER of KENTIAS, in 60's pots, grand stuff, ready for 48's.
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Williams' superb Strain, 1s. 6d. per dozen; 10s. per 100.
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 Extra fine plants in little pots and runners ready shortly.
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The most superb variety in cultivation; of fine globular form, with golden yellow skin; often grows to the weight of 2 to 3 lb. each, and of a mild, delicate flavour. Splendid for exhibition. Sow now. Seed, with cultural directions, per ounce, 2s., post-free.

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Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. **SPECIAL ORCHID PEAT**, in sack only. Rich fibrous LOAM, superior LEAF-MOULD, Coarse, Crystal, and Fine SILVER SAND, CHARCOAL, C. N. FIBRE REFUSE, fresh SPHAGNUM, Patent MANURES, FERTILISERS, INSECTICIDES, and all other Garden Requisites. **Peat Moss Litter.**

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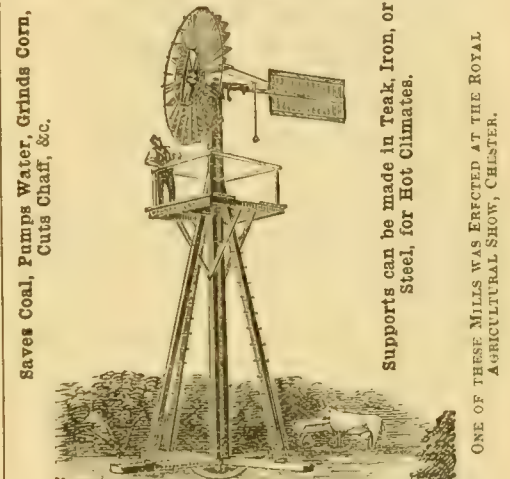
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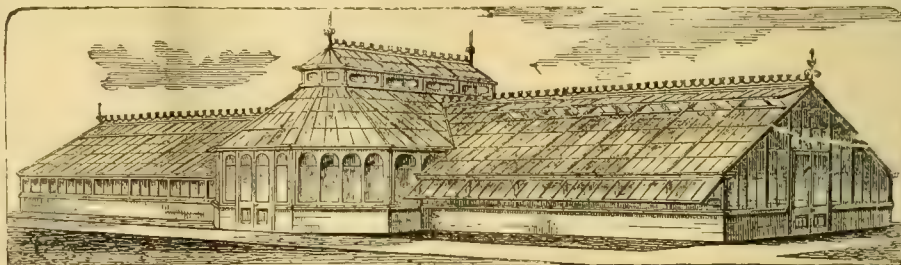
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THE
Gardeners' Chronicle.

SATURDAY, AUGUST 5, 1893.

ROSES AND THE SEASON.

THE Metropolitan Show of the National Rose Society on July 1 will be long remembered in many ways; it was without doubt the worst show the Society has ever held since 1879. In that year the incessant downpour during the blooming season caused the utter collapse of a great many exhibitors, and the very bedraggled and faded exhibition of the Roses which did appear. In 1893 the conditions were just the reverse, the inferiority of the show was not owing to excessive moisture but to excessive drought, and although in a few instances where thunderstorms have prevailed there were some weather-beaten flowers, yet on the whole, the falling off was not in the form or colour of the flowers, but in deficiency of size, which could, of course, be easily accounted for by the long spell of dry weather.

Exhibitors who had a good supply of water had an immense advantage, and hence some amateurs were able to overcome the difficulties of the season.

Another notable feature was the utter collapse of the Southern and Western growers, and the triumph of the North and East. Messrs. Harkness & Son, of Bedale, swept everything before them, as they have done in every show where they exhibited this season. The cooler climate of Yorkshire and the abundant rains which they have experienced, helped them to attain this end. Other exhibitors from the North and North-Midlands also came to the front, Messrs. Mack of Catterick and Croll of Dundee, amongst nurserymen, and Mr. H. V. Machin, Worksop, amongst amateurs, being successful exhibitors; but the renowned Colchester growers, the Tea champions from the West of England, and growers from the southern counties had, with few exceptions, to bite the dust. I asked one of the champion growers from Exeter, "Have you any Roses here?" His reply was, "Mine were over weeks ago," and I believe this was literally true. The collapse also of the two growers who had held the Champion Tea Challenge Cup was unmistakable; and so much was this the case that even at the show in their own neighbourhood at Gloucester they did not put in an appearance. Another notable feature was the manner in which some of the older and more highly-coloured Roses were shown. One would have supposed that the intense sunlight would have quite bleached such flowers as Horace Vernet, Duke of Wellington, Earl of Dufferin, Louis Van Houtte, Camille de Rohan, and others; but rarely have these and other old favourites been better exhibited, while the light Roses were many of them remarkably fresh and clean. It is not often that we see light and dark Roses equally well shown in the same season; the

bloom of Horace Vernet by which Messrs. Harkness & Sons obtained the Silver Medal, was perfect in form, colour, and size; but the same can hardly be said of the Ulrich Brunner which obtained the Silver Medal in the amateur class.

The Tea classes were not nearly so well represented as on some occasions, or, indeed, as at the Drill Hall on June 20, but the victor on that occasion, the Rev. A. Foster-Melliar, carried all before him; no finer bloom of Madame Cusin was ever exhibited as that in his stand, indeed, it is questionable whether it was ever shown so well, and some have even said that it was the best Tea Rose ever exhibited. The Bride, which won the Silver Medal in the nurseryman's class for Mr. B. R. Cant as the best Tea Rose, was perfect in every respect; another Tea Rose which was well shown was Jean Ducher, so disappointing to the exhibitor in wet seasons, but rejoicing very much in the long spell of dry weather. Among the Tea Roses which disappointed us was Ernest Metz. For three consecutive years the National Rose Society has singled it out for special exhibition. In 1891 and 1892 there was no competition, and when the subject was debated as to whether it should have the same place this year, it was said, "Give it another trial, as the two wet seasons have not been in its favour." The class was retained, and with the same result; only two stands of it were shown, and it must be uncertain in its blooming, for many exhibitors who grow it to some extent were unable to stage it. It does not seem to have been a favourable season for Comtesse de Nadaillac; for, although there were some pretty blooms of it, I did not see a first-rate one; on the other hand, Marie Van Houtte seems to have found a season which specially suited it. Its beautiful yellow-ground and pink edges were never more distinctly seen; a bloom of it in the Rev. A. Foster-Melliar's stand, which had been cut from the bush the Monday previous, was specially noticeable. Again, Her Majesty was well exhibited by Mr. F. Cant and others, but I think few would care to have it in the large Pæony-like form of the half-dozen blooms shown by Dr. Tucker of Farningham.

Remarkable, too, was the exhibition of new Roses, not for its extent, but from the fact that three Gold Medals were awarded, two of these going to one firm, Messrs. Alex. Dickson & Sons, of Newtownards—a feat never before accomplished by any firm; and the third being given for the first time to a garden and non-exhibition Rose. Two Roses shown by Messrs. Dickson were, Marchioness of Londonderry, a large pure white and full Rose, and Mrs. Sharman Crawford, a brilliant rosy-pink flower, of fine form, large petals, and bright in colour. They had a third, Miss Kellar, which some of the judges looked upon with favour, but there was no ground plant exhibited with the blooms, and consequently it could not be entered for competition. The garden Rose for which the Gold Medal was awarded, was that fine Crimson Rambler, shown by Mr. C. Turner of Slough, a crimson semi-double Rose of the Polyantha section, blooming in immense clusters, and evidently most vigorous in habit; a plant of it was exhibited in the pot about 9 or 10 feet high; this Rose has already received the highest awards it was possible to obtain, including a Gold Medal from the Central Horticultural Society of France, and there is no doubt it will be immensely popular as a pillar Rose. Of the French Roses of the last two years, next to nothing was seen. Gustave Piganeau was well shown, but did not obtain the same high position as it did last year,

for neither here nor at Worksop was it placed as the premier Rose.

Garden Roses were, as might have been expected, a disappointment; June was the month for them this season. The Gallicas, Hybrid Bourbons, and Hybrid Chinas were conspicuous by their absence; so also were the single Roses, most of which, at any rate in the South, had been over for a fortnight or more. Hence, in many cases the exhibitors were so hard pushed, that they had to put in Roses which, under a strict interpretation of the Society's rules, would have been excluded. L'Idéale has again shown itself to be a most valuable and beautiful flower, and a worthy rival of William Allen Richardson, although very distinct from it in colour; another Rose, a Hybrid Tea, Gustave Regis, is likely to become a favourite as a garden Rose; it has a very long pointed bud, only semi-double, clear yellow in colour, and having long strong shoots, which will bear pegging down, and most likely form a valuable bedding Rose. A semi-double—almost single—Rose was shown by Mr. F. Cant, but it was generally considered too much like Bardon to be of very special value.

There were no complaints as at last year's show about want of space or accommodation, which, as was pointed out at the time, arose then simply from the existence of the Electrical Exhibition, and the opinion was general that there is no place like the Crystal Palace (notwithstanding the difficulty of getting to and leaving it) for the Society's Metropolitan Exhibition. *Wild Rose.*

NEW OR NOTEWORTHY PLANTS.

HYMENOCALLIS CONCINNA, Baker, n. sp.*

This new species of *Hymenocallis* has been imported lately by Messrs. Dammann, from Mexico. In habit it resembles the small forms of the West Indian *H. caribæa*; but it is quite hardy at Naples, whilst *H. caribæa* needs protection, and the leaves remain upon the bulb all the year, whilst *H. caribæa* loses its leaves in August, and is at rest till March.

Bulb small for the genus. Leaves lorate, sessile, an inch broad, and as long as the peduncle when the plant is in flower. Peduncle slender, a foot long. Flowers many in an umbel, quite sessile; spathe-valves few, ovate-acuminate or lanceolate. Perianth-tube slender, 2 inches long; lobes linear, as long as the tube. Filaments shorter than the lobes; basal cup funnel-shaped, half an inch long, the edges not at all spreading; anthers very long and slender. *J. G. Baker, Herbarium, Kew.*

POLYSTACHYA LAWRENCEANA, Kränzlín.†

This *Polystachya* is certainly one of the most showy of the genus, the flowers being more than half an inch in diameter, and of comparatively bright colour. It is very near to *Polystachya laxiflora*, Lindl., from Fernando Po, and *P. puberula*, Lindl.;

* *Hymenocallis concinna*, Baker, n. sp.—Bulbo parvo; foliis persistentibus sessilibus loratis; pedunculo gracili pedali; umbellis multifloris, pedicellis nullis; perianthii tubo gracili b. pollicari, segmentis linearibus tubo æquilongis; filamentorum tubo brevi infundibulari, margine suberecto.

† *Polystachya Lawrenceana*, Kränzlín.—Bulbis subglobosis; foliis oblongo-lanceolatis acutis late viridibus sub anthesi 3½ pollic. longis et 1 pollic. latis; scapo 12–15 cm. alto, cataphyllis destituto puberulo; racemo simplice paucifloro distichautho; bracteis magnis rhombeis acutis apice reflexis, 3 ovarii pedicellati æquantibus ipsis et toto flore extus puberulis; sepalis dorsali oblongo acuto; petalis æquilongis lineari-lanceolatis acutis vix semilatis; sepalis lateralibus latissime triangulis acutis extus carinatis basi coalitis; labelli lobis lateralibus dolabratis antice rotundatis antrorsis; lobo intermedio multo majore fere orbiculari medio sulcato antice deflexo coarctato; disco inter lobos laterales pulvinari triangulo dense piloso instructo; superficie lobi intermedii rugulosa ceterum calva; gynostemio perbrevis ceterum generis. Flores inter majores generis sub anthesi 1.5 cm. diametro; sepalis petalisque luteo-viridia; labellum pallide lilacinum, *F. Kränzlín.*

but it differs from the latter by the larger flowers, and from the first-named by its simple raceme (*P. laxiflora* has a many-branched flower-stalk), the tip of the labellum (three-toothed in *P. laxiflora*, simple in our species), the hairy cushion and the colour of the flower, which is green and pale lilac in our species, whilst the flower of *P. laxiflora* (which flowered at Kew in May, 1861) is of a pale yellow colour. In spite of all these differences, which are more than sufficient to establish a new species, *P. laxiflora* is the next to *P. Lawrenceana* and all the others, even *P. odorata*, Lindl., from Fernando Po, show greater difference. The plant was imported by Mr. J. O'Brien from Sierra Leone, and flowered by Mr. White, Orchid grower to Sir Trevor Lawrence, M.P., at Burford Lodge, Dorking. A revision and compilation of the species of *Polystachya* described in the botanical works, prove how rapidly the number of known species of this genus is increasing. Lindley in his *Genera and Species* enumerates five species; in his *West African Tropical Orchids* he adds nine new ones. Reichenbach in the sixth volume of *Walper's Annales* (only a compilation of newly-described species), enumerates twenty-two; in Bentham and Hooker's *Genera Plantarum*, forty species are admitted; and for myself I dare say, that after a careful examination of all materials I could reach, at least sixty species are described, all without exception by authors of high range in botany, or at least, by men well acquainted with Orchids. I received fresh materials from the collection of Sir Trevor Lawrence, Burford, Dorking. *F. Kränzlín.* [We learn that the species was sent to Mr. O'Brien by Mr. John Buchanan from the Upper Zambesi, not from Sierra Leone. Ed.]

CATTELEYA WARSCWICZII VAR. FRANCONVILENSIS.

In a chastely beautiful white form of that most noble of all Cattleyas—*C. Warscewiczii*—comes a fresh surprise from the collection of M. le Duc de Massa, Chateau de Franconville, France. Not even the long journey the specimen had undergone could dim its beauty, and it arrived almost as fresh as when cut.

The flower is fine in form and size; the sepals and petals pure white. The lip is of a lighter hue of bright purplish-crimson than in the ordinary form, the front portion being simply marbled with that colour on a pure white ground, a broad margin of white also running round the edge. The eye-like blotches on each side of the middle of the labellum peculiar to all the forms of *C. Warscewiczii* except that magnificent novelty, *C. W. Rothschildiana*, which was imported in the same lot as *C. W. var. Franconvillensis*, are cream-white, with a yellow tinge on the portion nearest the base. It is an altogether unexpected novelty, occupying the same position with regard to *C. Warscewiczii* as *C. labiata Reineckiana* does to *C. Mossiæ*. It came out of the importation by Messrs. F. Sander & Co., now generally known as *C. Warscewiczii Sanderæ*, and which has produced such fine novelties lately. *James O'Brien.*

ORCHID NOTES AND GLEANINGS.

CATTELEYA GRANULOSA DUBUYSSONII.

From the gardens of C. Mitchell, Esq., Jesmond Towers, Newcastle-on-Tyne, Mr. T. J. Wheeler, the gardener, sends for name the finest form of this variety which we have seen. Its broad, wax-like, clear, pale yellow sepals and petals measure over 6 inches across. The side lobes and isthmus of the lip are orange-colour, the front lobe white, tinged and veined with rosy-purple. There are a few small purple dots on the segments. It is a yellow and nearly unspotted form of *C. granulosa Schofieldiana*, and a very ornate flower.

REARING OF CITRUS AND DECIDUOUS TREES FROM SEED.

A CAPITAL little pamphlet has recently issued from the pen of B. M. Lelong, secretary of the Californian State Board of Horticulture, on the rearing of Citrus and deciduous trees from seed, budding, grafting,

and appliances, of which we give a few extracts on the growing of seedlings.

APPLE.

In France there are numerous orchards of seedling trees bearing common fruit. This fruit is sold there to the growers at very low figures, and the cheapness of labour and other conditions being equal, many have emerged into the business of raising seedlings for the export trade.

Apple seedlings are propagated from seeds obtained from various kinds of Apples having an abundance of seeds, and while the windfalls and culls can be used for this purpose, it should be borne in mind that such fruit must be matured fruit, as the kernels in the seeds of immature or undeveloped fruit are generally only half developed, and only a small percentage grow, and those that do grow do not make thrifty stocks.

The well-ripened fruit nearly always contains plump seeds, and their producing a thrifty tree is borne out by the fact that the seedlings from such seeds are always the largest trees in the nursery or seed-bed, while those from half-grown, unripe, or undeveloped fruit generally remain small and very slender, requiring at least another year's growth before they attain the size of seedlings (of one season's growth) from plump seeds of ripe and developed fruit.

The Apple pips are planted in February or March, and there are several requirements that should necessarily be observed, as the ones following, and they should not be lost sight of if one wishes to succeed in germinating Apple seeds:—

Seeds that have been allowed to become dry are put into a sack and then immersed in water, and allowed to remain therein (sack and all) for four or five minutes; the sack is then strung up, to allow the water to escape. This operation is repeated several times for two or three days, or till the seeds have begun to swell; then they can be planted, and the soil must not be allowed to become dry. In the East, they throw the seed, when it has been allowed to become dry, into boiling water, then turning quickly into cold water, repeating the process two or three times, until the hard shell is softened. Apple seeds that have been allowed to become dry, when treated in this way will germinate in a few days after they are planted. Great care should be exercised in the operation; it does not mean that they should be left in the water till the heat destroys their germinating power, but by a short quick scald and sudden cooling the heat does not have time to reach the germ. After a season's growth the plants or seedlings are large enough to transplant into the nursery.

CHERRY.

The seeds from the Black Mazzard Cherry produce the best stocks for raising standard Cherry trees. The raising of Cherry seedlings is not very difficult, yet to be successful it requires considerable attention, and the following of details closely. Cherry seedlings do not grow as rapidly as the Peach or Apricot, and the plants are seldom budded until the second year's growth. The fruit is collected when fully ripe, and the pulp washed off; the pits are soon thereafter placed in boxes, covered with alternating layers of sand, and thus kept until spring, when they are planted in well-prepared seed-beds, or in nursery rows. If the pits, after being washed from the pulp, are to be shipped to a distance, they should be dried in the shade for a few days, to prevent moulding, but the drying process should not be continued too long, as exposure to air will lessen or destroy their power of vegetation. Cherry pits start very early in the spring, and should be planted in February, as soon as all signs of frost are over, and the ground begins to get warm. The season following, the plants may be transplanted to permanent rows in the nursery.

Dwarf Cherry stocks are not extensively used in California, but in some sections they are preferred. For dwarf Cherries the seeds of the Mahaleb are used. The Morello stock is also considered very good, and even harder. Dwarf species are somewhat difficult to bud into; the operation is most

successfully performed late in summer, just as the stocks begin to relax in growth.

CITRON.

The Citron is propagated from seed and by cuttings. The seed is planted and treated in the same way as Orange seeds. The plants grow more rapidly than those of the Orange or the Lemon, and the plants can be budded the year following. The Citron grows and does well on Orange stock, and this is the most profitable way to grow them. The practice of propagating the Citron by cuttings should be discontinued, because the Citron roots are subject to the attacks of gum disease, and sooner or later the disease develops in the stocks, and the death of the trees is most certain.

FIG.

The Figs grown in California seldom contain fertile seeds; the kernel is lacking, and therefore their planting should be avoided. The imported Figs possess fertile seeds, and nearly all germinate. The Figs are broken open with the hand, and the seeds washed out in warm water; they are then spread out on a piece of paper or board for a little while to dry, or, rather, for the moisture to leave them. These are sown in April, in well-prepared shallow boxes. The plants are taken out of the boxes after the second year's growth, and planted in nursery rows.

LEMON.

The lemon seed is planted, and receives the same treatment as the seed of the Orange. The raising of Lemon seedlings, however, is not practised, because the stocks are subject to gum disease, and for this reason have been discarded. However, Lemon stocks grown from seed make better trees than those propagated by cuttings. The roots are somewhat healthier, but neither are recommended.

The Lemon is budded on the Orange, and grows thriftily, and becomes a prolific bearer. The Orange stock is less liable to gum disease, and does not influence the top to any extent as to be noticeable in the fruit. At first the Lemons will be inclined to be roundish, but as the trees grow older will assume their elongated shape.

The Orange stocks are much hardier, and more able to support the heavy weight of the fruit and foliage. The Lemon grows readily from the cutting. The cuttings are planted in early spring and through the summer. The smaller the cuttings the better, but they should not be too small. The wound in small cuttings soon heals over, and they make healthier trees than those from large cuttings, but in either case they are short-lived, and should not be planted.

LIME.

The Lime is very easily propagated from seed. The seeds always germinate without much difficulty.

The fruit is placed in tubs or barrels to rot, and then is washed out, preserved, and planted the same as orange seeds. The plants are transplanted the season following.

The seed-bed or boxes must be well protected from frost, as the plants are very sensitive, and on account of their being so susceptible to frosts, the Lime is not grown successfully excepting in warm belts and sheltered localities.

The Lime comes true from the seed; the seeds "sport" only in exceptional cases. *J. J. Willis, Harpenden.*

(To be continued).

TRING PARK, HERTFORDSHIRE.

(Continued from p. 131.)

THE ORCHID-HOUSES and their choice occupants have been frequently noted by us; a hasty survey on the occasion of our last visit showed that none of the subjects for which the gardens are famed have been allowed to degenerate.

The planted-out specimens of *Vanda teres* having made a grand show, have just been replanted, and never looked better. In the house of *Phalænopsis*, some

of the plants having foliage of great size have been cultivated in these gardens successfully for so many years, that they demonstrate the fact that there is nothing in the plants themselves to render them unmanageable. Mr. Hill says that, beyond keeping them in an even temperature at all seasons, and watching every day for the signs of thrips, there is little difficulty in growing these Moth Orchids. In another warm division are some fine *Cypripediums*, and notably, *C. Rothschildianum*, and overhead are suspended many plants of the last lovely, sensational Orchid, *Eulophiella Elisabethæ*. It may be as well to emphasise the fact that the Tring Park plants of it are growing well, suspended in a warm house, and kept tolerably wet, as with a new plant it is useful to know one way in which it will thrive. The plants of *Vanda cœrulea*, which on the occasion of our last visit were so thickly set with fine blue flowers, are in a more prosperous condition than long-cultivated plants of the species usually assume, for although some grow it very easily, by far the greater part of growers fail. Too much sunlight in summer seems bad for it, and it likes to be in a warm house which is damped down and nearly shut up entirely early in the afternoon while the warm weather lasts. The *Lælias* and *Cattleyas* are vigorous in growth, but at present with little flower.

One of the houses contains a large number of plants of *Cattleya aurea*, among which are the original *C. aurea marmorata*, *C. Hardyana*, and the typical *C. Warcewiczii Rothschildiana*, one of the most beautiful and distinct of *Cattleyas*. Among plants in flower in the intermediate-houses we remarked some of the fine yellow *Sobralia xantholenca*, one of the beautiful pink-tinted *S. Lucasiana*, the carmine-coloured *Broughtonia sanguinea*, &c. A house of *Dendrobiums*, growing well, came next, and then the cool-houses, in which the *Odontoglossums* were very thriving, and sending up some spikes, to mingle with the showy lot of *Disa grandiflora*, &c., in bloom. Here, too, was remarked a plant in flower of the pretty scarlet *Lælia monophylla*, and also some of the brightly-coloured *Cochlodora vulcanica grandiflora*.

Among the plants well in bloom we observed a very showy houseful of *Celosia pyramidalis* and tuberous *Begonias*; a large quantity of a very fine strain of *Vallota purpurea eximia*, which have given and are still giving a grand lot of flowers; a small batch of the showy *Hæmanthus Katherinae superbus*, and preparing for bloom later; a pitful of *Nerine Fothergilli major* is at present just in the right condition. Many other striking things also appeared, but we noted only the more prominent. Among the best examples of culture are the thousands of *Carnations* for flowering in pots, a large lot of which will be available from autumn onward.

COLONIAL NOTES.

BOTANIC STATIONS.—One of the most useful works accomplished in the West Indies and other colonies of late years has been the establishment of Botanic Stations in various localities. The designation is, perhaps unfortunate, as leading to the inference that the gardens in question are of a purely scientific character, whereas their main object is the introduction and cultivation of economic plants best suited to the conditions of each locality, and the diffusion of useful information among the planters and settlers. These stations are in connection one with the other, and with Kew. It is owing to the forethought and energy of Mr. Morris in particular, that these establishments have been founded. His experience in Ceylon, Jamaica, and now at Kew, renders his assistance in this matter highly valuable, and aided by the staffs of the several establishments will doubtless lay the foundation of an era of prosperity. Of the older West Indian gardens of Jamaica and Trinidad, we have occasionally the opportunity of speaking, and now, through the kindness of Mr. C. A. Barber, the Superintendent of Agriculture, we are in a position

to make mention of some of the embryo establishments under the general supervision of that gentleman, referring the reader for fuller details than we give to the *Leeward Islands Gazette*.

DOMINICA.

The founding of the Botanic Station in Dominica will probably, in future years, be referred to as one of the greatest strides in the progress of that island during the present period.

Admirably situated within the Tropics, with a broken and varied surface, with its sheltered valleys and steep mountain sides, Dominica possesses a lovely flora, only limited in extent and variety by the size of the island, and its distance from any large continental mass. And the same characters which render it the El Dorado of botanists mark it out as a peculiarly suitable home for all the minor and profitable industries in Tropical Agriculture.

The population, somewhat under 30,000, is small for the size of the island; and not much more than one-tenth of the island is under any manner of cultivation.

It is needless to point out the necessity, in such a land, for a well-organized dépôt, by whose help plants suited to the soil and climate may be introduced, grown experimentally and distributed broadcast at nominal prices; while the experienced gardener at the head of it will become the centre of information concerning the best methods of propagating, growing and treating these plants.

The site selected for the Botanic Station in Dominica is not all that could be desired. As a general rule it has been very properly thought desirable that, where new and beautiful plants are being grown, they should be placed within reach of the towns where the population is concentrated. But the real purpose of a botanic station has too frequently been lost sight of, and the attempt to combine a public recreation-ground with an acclimatization garden has crippled the work of the more useful and less ornamental character. Such has, without doubt, been the case in Dominica.

The Botanic Station lies at the back of the town of Roseau, on slightly-elevated land, about half a mile from the sea. Its situation is romantic. Immediately to the east rise the steep cliffs of Morne Bruce to a height of 500 or 600 feet above the sea level. Paths cut along the sides of these cliffs form delightful shady walks while the sun's rays are still in the east; and the planting of Bamboo clumps and shade-trees, along their edges, will render them equally enjoyable during the latter part of the day. The station lies mapped out below; and as plot after plot is being brought under cultivation, and new roads and beds are being laid out, the appearance of the whole, from this point of view, is attractive in the extreme. In the distance, a fine view of Roseau and its road-station is spread out, while, round to the right, picturesque glimpses may be had up the Roseau valley.

Judging by the present rate of progress, it is reasonable to assume that in a few years time, when the ornamental trees have shot up, and the Bananas upon the station have given place to various economic plants, the botanic station in Dominica bids fair to become one of the most picturesque in the West Indies.

The land has been laid out in plots, and various economic plants are being grown. The presence of great numbers of Banana trees has been made use of in starting the young plants. Each plot is 110 feet square, and the parting hedges are formed of the physic-nut (*Jatropha Curcas*) on which it is intended later on to grow *Vanilla planifolia*. Liberian and Arabian Coffee, different kinds of Cacao, Cinnamon, Limes, Chinese Ginger, Oranges, Targieries, Mulberries, Lemons, Musk-ochro, Rubbers, and various other economic plants have been placed in these plots; and the walks between have been lined with Pine-apples of various kinds, Egyptian cotton, Nutmegs, and different ornamental plants. A few plots of fibre plants have been laid out further toward the north; and it is intended in this direction to make use of a barren slope as a fibre garden, with plots of all the fibre plants likely to be of use in the Leeward Islands.

The lower slopes beneath the cliffs are at present in Bananas, Cacao and Limes. A gradual improvement of this part of the garden is intended as time proceeds; but a good deal of this land is very dry and stony, and there is at present no means of irrigation. Along the upper slopes a quantity of Guinea Grass has been planted.

At the junction of the three roads, a wide space has been left, in which an ornamental pond might be placed. A circular basin of water with the Victoria Regia and various other kinds of Water Lilies, surrounded by shade-trees and sheltered by clumps of Bamboos, will form an exceedingly attractive central object; and when the trees already planted have begun to make headway, there will be avenues in three directions leading towards the principal gates.

The gates, of which, at present, only one has been erected, are much needed. Cows and calves, sheep and goats, are at present tethered at different points on the uncultivated land; but it requires the Curator to be constantly on the alert to prevent the abuse of this privilege. On a recent visit, I came across a goat tethered to the upright leafy spike of a young royal Palm, and at the same time a fine specimen of *Caryota urens* was pointed out to me as having been eaten down by a cow which had strolled through one of the gates in passing.

It is a matter of great importance to the welfare and utility of the station that a suitable office be erected for the Curator pending the building of his house. Such an office should contain the books of the Curator, the rudiments of an economic reference library, and the herbarium, with a set of woods and dried plants of the island. It should be beautified by the training of creepers over it, and would form a pleasant shelter and place of rest for visitors during the heavy showers which sometimes surprise one in these islands.

MONTSERRAT.

The small Botanic Station in Montserrat lies to the south of the town of Plymouth, and comprises a strip of land a quarter of an acre in extent along the base of the cliff. The public road runs through the station, but the small piece of the garden between the road and the sea is given up to various experiments in raising a protecting belt against the sea-blast. Several of the trees formerly upon the land have been left standing, and under their pleasant shade the plant-sheds and small office have been erected. The general appearance of the station is attractive; and from the number of names found in the visitors' book, it appears to be an exceedingly popular institution.

The soil of the garden is of a light and sandy character, and is unfitted for many classes of cultivation. It is, however, being steadily improved by planting and the addition of manure. The water supply is fortunately abundant, and to this fact the success of the station is, in a great measure, due. The site is, however, much exposed to the westerly breezes, which, when they blow, cause great destruction among the shrubs, frequently completely stripping them of their foliage. With the completion, however, of this somewhat tardily-growing shelter-belt, and the continued addition of ordinary farmyard manure, the best results may be anticipated. There are a number of stock farms in the south of the island, from which a cheap and continuous supply of manure may be obtained. The one permanent drawback to the station appears to be its exceedingly contracted area. There is at present practically no room for experiments with new economic plants, and thus one of the primary objects of a botanical station is in danger of being overlooked.

Mr. Joseph Wade, the Curator, entered upon the land and cleared it of scrub in November, 1890; and great praise is due to him for the thoroughness with which he has cultivated the small area at his disposal. The beds are at present devoted to different kinds of vegetables. It has been the curator's wish to spread the knowledge of such cultivations among the poorer classes, and fine specimens of Tomatos, Lettuces, Cabbages, Cucumbers, &c., have been grown. A somewhat disproportionately large area under Pine-apples has also yielded some excellent fruit. The ground is not yet suited for Cacao, Nutmegs, Liberian Coffee, or Spices; but a few Bananas, Nutmegs, Loquats, &c., are planted under the shade of the larger trees, and are doing fairly well. A number of good kinds of Vines and Turkey Figs have been procured from England, and it is intended to make some trials with these fruits. Now that the success of English vegetables has been fairly demonstrated, it is desirable that more attention be paid to ornamental shrubs and other branches of horticulture; and also that a few experiments be made in the growth of economic plants, such as Cotton and Tobacco.

(To be continued.)

NOTES FROM THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, CHISWICK.

HERBACEOUS PHLOXES.—Severe drought does not agree with the herbaceous Phlox, but the collection in the Chiswick gardens is flowering fairly well. The dwarf type of Phlox is getting grown more freely each year, and amongst the many varieties, mostly of French origin, occur beautiful colours. But the great point is their dwarf and compact, not to say bushy habit of growth, which makes them of the greatest value for grouping or forming dense masses, either of distinct or several colours. We noted a few very fine kinds in bloom, and they are as follows: Independence, very dwarf, the flowers produced in large heads, each individual bloom large and pure white. A mass of this, backed up by dark-coloured leafage, would look well. Gen. Chaver, brilliant red, is just as free a bright colour, that keeps its colour well, in spite of fierce sunshine. John Laing, purple magenta, and Eugene Danganvilliers, are two good kinds. One of the finest in the collection is the latter, and represented by several specimens. It is a sturdy grower, the individual flowers large, light mauve in colour, with a white eye. If only one were chosen, we should select this. Gen. Faidherbe, brilliant red, is a free and excellent variety for its effective colour. Mrs. Keynes is rather taller in growth, the flowers large and white touched with mauve. Protei is also large, white suffused with purple. Proté is creamy white, a distinct, pleasing flower, free, and the habit of the plant dense and strong. Nain Bébé has a large purple flower, and Graham W. Culloch, intense crimson; they are small, but very rich in tone. One of the more distinct in the salmon-coloured varieties is Adonis, a clear and delightful shade. Too many purples are not wanted, nor the magenta shades. They get very dingy in the sun. Of course the dry weather has induced dwarfness of growth in most plants, but all the kinds mentioned are naturally of short stature. *V.*

DEUTZIA PARVIFLORA.

AMONG the many interesting plants exhibited at Ghent in April last was the Chinese shrub of which we now give an illustration (fig. 31, p. 153). It was exhibited by M. Lemoine, of Nancy, to whom we are indebted for the photograph whence our illustration was taken. The plant is quite hardy, even at Nancy, and its flowers expand earlier than those of any other species, on which account it is well suited for forcing purposes.

The general appearance is sufficiently indicated in the accompanying figure, which shows how freely the flowers are produced in close terminal panicles. The flowers themselves are creamy-white, the petals cup-shaped, as in a *Cratægus*. The plant was introduced into European cultivation by Professor Sargent, who distributed specimens from the Arnold Arboretum to the Jardin des Plantes. The species was originally described by Bunge, whilst Regel figured a variety of it under the name *Amurensis* in *Garten Flora*, 1862, t. 370. The same, or a closely-allied plant, occurs in the Himalayas from Kashmir to Bhotan (see Hemsley, in *Journ. Linn. Soc.* vol. xxiii., p. 276, where the full synonymy is given). In the *Flora of British India* the Chinese plant is doubtfully referred to *D. corymbosa* by Mr. C. B. Clarke. Now that the plant is in cultivation, an opportunity will be afforded of settling these doubtful questions.

REMARKS ON THE FRUIT CROPS OF 1893.

[FOR TABULATED SUMMARY, SEE P. 89.]

(Continued from p. 126.)

7. ENGLAND, N.W.

LANCASHIRE.—Fruit crops in this neighbourhood are quite up to the average. Some kinds, such as Gooseberries, Cherries, Currants, and Apples, rather over the average. Owing to the long spell of dry weather, Apples, Pears, &c., will be rather small. Strawberries were very fine, but soon over. Peaches on outside walls are an excellent crop, and very early, but the red-spider is very troublesome. *J. Hathaway, Lathom, Ormskirk.*

—The Apple crop is a heavy one, and the trees as a rule have escaped the attacks of insect pests. Pears are also a good crop, except on walls. Plums have been much blighted in places, especially Damsons, and the unusually heavy set of fruit has been much reduced, but a good crop is still left. Morello Cherries are loaded, but the trees have suffered for want of water, and the fruit is ripening prematurely, and will consequently be small. Other Cherries were good. Gooseberries are a heavier crop than usual, but caterpillar and red spider have ruined the trees in places. Had heavy showers on the 9th, 10th, and 11th. *Wm. P. Roberts, The Gardens, Cuerden Hall, Preston.*

8. ENGLAND, S.W.

CORNWALL.—This is the twenty-seventh season that I have experienced here, and I find this to be the most exceptional during that period—in fact, we have witnessed the longest drought on record, for four months we have only had occasional showers. These dry and sunny summers always augur well for fruit and other crops in this neighbourhood, where the soil is loam and deep; unfortunately, these abundant seasons only average one in six years (Jubilee to wit, 1887). It is surprising to see such fine fruit and the weather so dry. Strawberries were a month earlier, so also is nearly all kinds of fruit. Rivers' Early Plums are over, so are Doyenné d'Été Pears and Alexandria Peaches; such Pears as Beurré d'Amanlis, Pitmaston Duchess, Huyshe's Victoria, Bergamotte d'Esperen, Napoleon, Chaumontel, Beurré Giffard, and Swan's Egg, are giving heavy crops; the following Apples are bearing heavy crops, Monster Pippin, Early Bowhill, Cox's Orange Pippin, Blenheim Orange (especially trees twenty years old in orchard), Kerry Pippin, Wellington, Keswick Codlin, King of Pippins, &c. *Chas. Lee, Bocomnoc, Lostwithie.*

CORNWALL.—The Apple crop, although severely thinned by the long period of hot dry weather, is still, in this neighbourhood, greatly in excess of average, and is now swelling satisfactorily. A great proportion of the Pears has dropped, yet a good average remains. Peaches and Nectarines are very plentiful, and though small, very good. The earliest Strawberries

The crops of small fruits are enormous. Strawberries did well on the flat, on sloping ground they were dried up. Raspberries, where mulched and watered, have given fine fruit, and plenty of it. *Geo. Baker, Membland, Plymouth.*

DEVONSHIRE.—The weather throughout the season

rainfall. Apples, Pears, &c., which before had threatened to be under-sized, are now showing up well under its influence, and now give promise of fine development. Strawberries had a long season, and were of excellent size and quality. *James Eastone, 38, Temple Road, Exeter.*

DEVONSHIRE.—Apples and Pears do not flourish here, although they make good growth, the sea fog in autumn preventing the wood ripening properly, and so it dies back considerably. The fruit of Pears, in most instances, swells but very little, and cracks very much before they ripen. Peaches do no good out-of-doors, and must have glass protection. Raspberries, black Currants, and Morello Cherries crop prodigiously. *J. Ollerhead, Rousdon.*

— The promise of fruit of all kinds in the spring was the best on record. The long spell of dry weather told on many kinds, and on some of our light soils caused the loss of nearly all the crops. Strawberries were excellent with me up to the last. Raspberries, though most promising, suffered most. The Apple crop was being lost up to the time the rains came. All wall trees on south, east, and west borders were obliged to be constantly watered. I never before saw trees so much affected by drought. Apples and Pears now promise to be fine. The crops of Plums are everywhere enormous. *D. C. Powell, Powderham, Exeter.*

— Strawberries were gathered generally out-doors on May 1, and the gathering lasted till the middle of June, it being, on the whole, the best season we have ever had. Laxton's Noble was grown for early work, but it is quite useless for marketing after Vicomtesse H. du Thury and other of the better varieties come into bearing, the fruit being soft, and ill-adapted for carriage. Sir Joseph Paxton is the variety that is most extensively grown in this part, and the most profitable. We gathered Pear Doyenné d'Été on June 12, nearly three weeks earlier than usual. Early Rivers Plums were ripe on June 20, and the last fruits were picked July 8; several other varieties were gathered in the week ending July 22. The Mr. Gladstone Apple was ripe in the last week in June, from a pyramid, the crop on this tree numbering about 500. This is a capital early dessert App'e, and, if grown in quantity would greatly affect the price of foreign Apples at this season. Red Astrachan Apples were gathered, of full size and perfect in colour, a fortnight ago. I find that this variety cankers very much in most situations. Of the early culinary varieties of Apples many of them are nearly of full size—I mention Lord Suffield, Lord Grosvenor, and Ecklinville Seedling—while all the others are swelling away, and promise to be an excellent crop. The fruit, at the present time, is larger than it was at the end of August last year [But will it keep so long? Ed.]. Cherries were gathered very early in the month of May—a fortnight earlier than usual; Apricots the same, which are carrying unprecedentedly heavy crops of fruit. *South Devon.*

GLOUCESTERSHIRE.—Owing to the excessive heat and long drought, all fruits are about a month earlier than usual. Fruit trees when in flower were magnificent, but the bloom lasted only a few days. Codlins generally have set well, although a great many of late have fallen off, and the remainder are small; some of the popular fruiting varieties have failed altogether, and in some instances the trees have perished. Pears are very scarce—only here and there is a tree seen with a fair crop of fruit. Early Prolific Plum has an abundant crop; other varieties only a few. Apricots, Peaches, and Nectarines, although a heavy crop, are very small. Gooseberries and Currants have been very plentiful. Strawberries were an average crop—generally small fruit. *Herbert Noble, Ashton Court Gardens, Bristol.*

— Apples in this district set a very heavy crop, but on a light sandy soil many have fallen off, nevertheless the crop is good. Pears were never better; they are bright, clean, and most promising. Cherries are somewhat smaller than usual. Peaches and



FIG. 31.—DEUTZIA PARVIFLORA. (SEE P. 152.)

were fine and good, but the later crops soon over. Bush fruits of all kinds most abundant and excellent. *James Murton, Pencalenick, Truro.*

DEVONSHIRE.—The Apple crop in this district is very good; many dropped owing to the drought—on most trees over plenty are left. Pears are mostly doing well. Cherries are a heavy crop, and clean.

favoured the fruit crops so entirely, that all kinds are much beyond average, stone-fruits especially. From the beginning of March to the end of June was an unbroken period of evenness of temperature, absence of storms and of frosty nights, and withal, bright sunny days. Cherry, Apricot, and Plum, especially, are large crops, and such as are rarely seen. Within the past fortnight (July) there has been considerable

Nectarines were never better where the trees have been properly cared for, and the fruit thinned out. *Thomas Shingles, The Gardens, Tortworth.*

HEREFORDSHIRE.—A magnificent bloom on all kinds of fruit trees in spring, followed by one of the driest seasons on record, and one of the worst attacks of insect pests for many years, has resulted in a very poor crop of Apples, Pears, and Plums. Apricots are a heavy crop and good. *Thos. Spencer, Goodrich Court Gardens, Ross.*

MONMOUTHSHIRE.—I do not remember fruit crops generally flowering more freely here than they did this spring, and were it not for the frosts we had on April 12, 13, 14, which injured Pears and Plums, I might record the best crops we have had in our low situation; and as it is, taking them collectively, they are a good average. Of Apples, Blenheim Orange, Hornead Pearmain, Tom Putt, Warner's King, and Forge are cropping heavily; and of Pears, Beurré d'Amanlis, Clapp's Favourite, Doyenné du Comice, Durondeau, Louise Bonne of Jersey, and Doyenné de Merode are good as cordons on an east wall, while Beurré Diel, Beurré Rance, Beurré Superfin, Brockworth Park, Flemish Beauty, Marie Louise, Ne Plus Meuris, Pitmaston Duchess, and Williams' Bon Chrétien are the best as large trained trees. Plums are almost a failure with us, although on higher situations near they are fairly good. Apricots are good in quality, as are Cherries. Bush fruits are plentiful and good, particularly Currants and Gooseberries, Raspberries being lighter in crop than usual, while Strawberries were good in every way. Scarlet Queen is both good and very early. Noble was also unusually fine upon a south border. We have mulched and watered liberally, and this, together with our heavy, cool, and deep soil, has enabled the trees, &c., to withstand the drought well. Nuts of all kinds are abundant. *Thomas Coomber, The Hendre.*

SOMERSETSHIRE.—Far better crops than anticipated. Severe frosts, experienced when very many of the kinds were in flower, not doing much harm. Apples too thick on old trees, and are very small accordingly. Pears on some walls plentiful enough, also large and well-formed; in the open, very scarce in some gardens, ours included, and abundant in others. Peaches, Nectarines, Apricots, Cherries, and Plums (on walls), abundant and good. Strawberries injured by frost, and in some instances spoiled by excessive heat and drought. *W. Iggulden, Marston Gardens, Frome.*

—The year of 1893 will be remembered for many years from a fruit point of view, everything coming so unusually early—in our garden some things a month. The drought was terrible, over four months with but just a few showers. Gooseberries were terribly infested with the caterpillar. Apricots have an enormous crop and fine, and the trees clean. Plums very good, especially Jefferson and Coe's. Apples, of the Codlin class, very clean and early. *J. Crook, Ford Abbey, Chard.*

—The spring this year was favourable for all kinds of fruit; there having been scarcely any frost or rough wind, the fruit set well, and we have in Somerset, as far as I have travelled, on the whole, a crop above the average, especially of Apricots, Plums, and Pears. *W. Hallett, Cossington House Farm, Bridgwater.*

WORCESTERSHIRE.—The Apple crops are, on the whole, under average, and extremely partial—unaccountably so; now and then heavy crops on trees, then whole plantations nearly barren. Severe frosts whilst in flower, accompanied by a dry arid east wind. Choice Pears on pyramids and walls suffered severely from the larvæ of the gnat-fly (*Diplosis pyrinaea*), which lays its eggs in the buds and blossoms. This is the most perplexing insect we have ever had to deal with; how to combat it in future is a serious question. Stone fruits of all kinds abundant and good, although the extreme drought and aridity of the atmosphere kept them under-sized. Alexandra Peaches were gathered out-

doors on June 21, and Strawberries (Noble) on May 15. Bush fruit suffered from drought, and Gooseberries attacked by red-spider. *W. Crump, Madresfield, Malvern.*

WORCESTERSHIRE.—Taken altogether, our fruit crop is the heaviest we have had for some years; the trees, too, are clean and healthy, and the fruit is colouring up nicely. Apples and Plums are an exceedingly heavy crop, also all bush fruits; but from the extreme heat and drought, they have ripened fully three weeks earlier than usual. *W. Child, Croome Court, Severn Stoke.*

WALES.

ABERYSTWYTH.—The fruit crop on the whole is very good. Apples are a heavy crop, at one time they were suffering very much from the drought and beginning to drop, but recent rains have saved them, and they are swelling fast. All small fruits were very heavy crops. Birds are very troublesome this year through the scarcity of insects occasioned by the drought. *R. C. Williams, Crosswood Park.*

DENEIGHSHIRE.—Generally speaking, all crops have been plentiful and of good quality, although by this exceptionally abnormal season much forced, especially black Currants and Raspberries, which were soon over. Noble Strawberry is an excellent dry-weather variety; Sir Joseph Paxton has done good service. Codlin varieties of Apples are a heavy crop; the Pippin class are also good crops. Trees of Red Astrachan, Hawthornden, and Greening Apples have good crops. The early Pears are a thin crop, whilst late Pears are a good one. Sweet Cherries were never better, but Morello suffered from the great heat. Apricots were never better here. *P. Middleton, Wynnstay Gardens, Ruabon.*

FLINTSHIRE.—Apples on old standard trees and Plums and Apricots are much above an average crop. Here as elsewhere the drought wrought much injury to small fruits, and insects were abundant. *James Barnard, Mostyn Hall Gardens.*

GLAMORGANSHIRE.—All kinds of fruit are from four to five weeks earlier than usual in this district, and in cases of an insufficient water supply, the fruit undersized. Red-spider is very prevalent in some gardens, especially on the Gooseberry bushes, in some instances killing them outright. Taking the whole fruit crop of the district, it is much over the average. Cooking varieties of Apples were ready for use on June 20. The Pear trees are very healthy looking, as are Peaches and Nectarines. Our Strawberry crop was the finest and best I can remember. All small fruits most plentiful, but lacking in flavour hitherto. *R. Milner, Penrice Castle, Swansea.*

—All kinds of fruit trees flowered to excess this year, from a fortnight to three weeks earlier than usual. The weather was favourable during the time they were in flower, and the fruits set well, and swelled away freely, until the trees began to feel the effects of the drought, when the Apple trees got covered with red-spider, and the fruit began to drop off in great quantities, and they have continued to drop, more or less, ever since, although many of them are more than half-grown. *A. Pettigrew, Castle Gardens, Cardiff.*

9. IRELAND, N.

ARMAGH.—The Apple crop will be heavy and good in this district; the fruit is swelling fast, and will be ripe much earlier than usual. Pears are a good crop, and the fruits large for the time of year. Plums and Damsons set very thickly, but many dropped off. Still a good crop remains. Cherry trees suffered very much from dryness of the soil, but the crop of fruit was a good one. The Raspberries are a very heavy crop, but the fruits small. Black Currant bushes are badly blighted, whilst red Currants have good crops of small berries. *Thomas Sheasby, Castle Dillon.*

GALWAY.—Fruit crops were never finer or more abundant than those of the present year; the season for Strawberries was short when compared with other years, the great heat ripening the whole

crop in the course of a few weeks. Small fruits were all fine, and a very heavy crop. Morello Cherries are a heavier crop than other varieties, and the fruit of a very fine size. Apples and Pears are a grand crop, and the fruit much larger than I have ever seen them at this date. *John Cobban, Garbally, Ballinasloe.*

CHANNEL ISLANDS.

JERSEY.—Apples are abundant this season. Pears promise to be a fair average crop. Apricots are plentiful. Cherries hung in wreaths upon the branches of the trees, and ripened well. Peaches and Nectarines are a fair average crop. The Early Amsden Peach ripened in June, and Early Louise is ripe; the later varieties look healthy and well. Of early Strawberries, Laxton's Noble particularly were abundant and good, but the later varieties were stained and scorched by the continuous heat. Gooseberries and Currants were good, but Raspberries could not hold out, for want of moisture. Medlars look well, and Mulberries promise to be fine. Out-of-door Grapes will be indifferent, but indoor crops look well when properly cared for. *Charles B. Saunders, St. Saviour's.*

ISLE OF MAN.—The Strawberry crop ripened fully three weeks before the average time, and I may say the same of other kinds of small fruits, which have been very fine, especially Gooseberries and Currants. Apples and Pears would have been above the average had not long drought seriously affected them, a great many dropping off the trees. *Jas. Murphy, Cronkbourne Gardens, Douglas.*

FLORISTS' FLOWERS.

THE CARNATION AND PICOTEE.

A MONTH ago I wrote upon the Carnation and Picotee, and now that the National and other Societies' Exhibitions are passed, a few more remarks may be of use to my readers. The flowers were quite three weeks earlier than usual, and all the crown flowers passed out of bloom on July 11. The growers in the Midland Counties, who were able to cut crown-blossoms, had an advantage over the southern growers, in being able to exhibit larger blossoms. The leading feature at the Chiswick was the collection of seedlings exhibited by M. R. Smith, Esq., Hayes Common, who has given special attention to border varieties of the Carnation, and been successful beyond precedent in raising beautiful varieties, and who finds in his gardener, Mr. C. Blick, an excellent cultivator. It must not be supposed that such flowers can be produced without trouble; and those who go home and think that, by merely planting their Carnations in the garden, without any preparation of the soil, similar results will be produced, may find themselves mistaken when it is too late. All kinds of soils are not suitable for the culture of the Carnation, although it is about as accommodating in this respect as most garden favourites. I allude to the preparation of the soil at this time, because I have been making preparations for planting out seedling Carnations. It is trenched about 18 inches deep, and a dressing of rich manure is worked into the soil as the work is being done. If our plants, flowering this year, had not been planted in well-prepared soil, their flowering could not have been satisfactory. Besides the preparation of the soil, attention must be given to the plants after they have been planted out; frequent hoeing to kill weeds, and loosen the surface, hardened by rains, is a necessary part of their culture. During the last few years the plants have been attacked by the Carnation-maggot, which eats into the heart of the plants, and is not easily detected before much mischief is done. Named varieties raised from layers or cuttings require quite as much attention as seedlings, and to obtain well-developed flowers, such as are seen at exhibitions, this preparation of the soil is very necessary, and when the plants are intended to be planted before the winter, the ground should be prepared with as little delay

as possible. I began the layering business on July 12, and the layers will be sufficiently rooted to plant out by September 12; the plants will be all the better if the ground can be prepared for them six weeks previously, the exposure of the soil having a beneficial influence upon the well-being of the plants to a greater degree than is generally supposed. Very light soil over gravel is not well adapted for the Carnation, but even this kind may be improved by adding good yellow loam to it. A clay soil is not much better adapted for them, but this can be improved by well draining it and adding wood-ashes or burnt earth. The best kind of soil is a clayey loam, rather inclining to light than heavy. Instructions as to layering were given at p. 744, and no delay should take place in finishing this work, as the sooner the layers are pegged down, the better will the plants be rooted.

Fertilising the Flowers.—This operation, with the intent of obtaining good crosses, should be attended to where the flowers are still in good condition. Those who have beds of seedlings flowering for the first time should daily look over the plants and mark all the varieties that seem to be of merit. This is a job which requires much consideration, and a careful comparison of the seedling blooms with flowers of the best named varieties in the same class, and unless there is some superiority in the seedlings, it is scarcely worth while growing them a second year. All the varieties intended to be grown again should be layered at once.

Tree or Perpetual-flowering Carnations.—These varieties are now in preparation for the winter, and the best place for them at present is a fully-exposed position out-of-doors, as, if kept in frames, or crowded in some out-of-the-way corner, where direct sunlight does not reach them, and the air is almost stagnant, they are sure to become a prey to green-fly, and other insects. In fact, with all the care I have been able to bestow upon our plants, they have required frequent dipping in a mixture of soft-soap and rain-water, to destroy the insects infesting them. The plants should not be over-potted, but it is quite as well to give them sufficient pot-room, in order that they may be able to develop full-sized blooms. Pots of 6 and 7 inches in diameter are sufficiently large for plants which were propagated last spring. It is not well to grow too many varieties, but rather a large number of plants of a few varieties, but of distinct colours. Winter Cheer is a very fine and distinct dwarf variety, with scarlet-coloured flowers; Madame Carle produces very freely flowers of pure white, but not of large size; the flowers of the variety Mrs. Moore are also pure white—they are of large size, but not freely produced; Miss Joliffe Improved produces larger flowers than the original Miss Joliffe, and is the best of the pink-hued varieties; Mrs. Treen is a good crimson-coloured variety, as also is Mrs. A. Hemsley. See that the plants do not suffer for want of water, for if they once receive a check, the chances are that they will not start into free growth again. Cleanliness and careful watering are all that the plants require until they are taken under glass at the end of September.

PINKS.

Instructions were given to take the pipings of these about the third week in June, and if they have done well these will now be rooted, and fit for planting out in a border of fine soil, about 3 or 4 inches asunder. By this treatment they form well-rooted sturdy plants for planting in their flowering beds about the middle of September. The same remarks as to the preparation of the soil apply to the Pink as much as to the Carnation and Picotee. Although the Pink is altogether a more hardy and easier grown plant, and will flourish in a position where the Carnation will not, they will do all the better when the soil has been previously well prepared for them; the plants are apt to be attacked by aphid when they are under glass, therefore it is a good practice to dip them in some solution that will kill the fly, before planting them out. The forcing Pinks, which were propagated in March or April, are now

of large size, and planted out in the open borders. All that they require is to have the ground hoed, and if they are planted in light open soil they will form large clumps for potting up in September.

DAHLIAS

will now require much attention. They are growing fast, the recent showers following after the long spell of dry hot weather has had a most beneficial effect upon them; and they should be kept in a growing condition. Each plant was furnished with a stout stick in the spring, and in addition to this four or five more will be required for each plant to support the side shoots. Some growers allow the plants to grow as they like until the end of the present month, and then thin out severely with a knife. Some of the best of the old growers objected to this, and never used a knife at all; the shoots being removed when of small size with the thumb and finger—that is, the small shoots which grow from each joint of the side branches. It is in accordance with the maxims of good gardening that no plant should be robbed of a large number of its leaves and branches at one time. Growers for exhibition are also careful to remove in the early stages all misshapen buds, and such as are likely to produce what the fanciers term cross-eyed flowers. Those who grow for exhibition are careful to shade the flowers as soon as they show colour, especially the light ground varieties. The dark flowers should not be so closely shaded. In such seasons as the present, when thrips are abundant everywhere, it may be necessary to tie up every flower intended for exhibition in a muslin bag, but before doing so, see that no thrips are tied up in the bag with the flowers. To make sure, one man should hold the flower in his hand, whilst another syringes it well with clean water. If dry weather should again set in, the plants should be syringed, or watered overhead every night. Mulching the ground between the plants has of course been attended to some time ago. Perhaps the best material for this is half-decayed stable manure. Moreover, manure water should be applied as soon as the buds are well formed. If a stock of any particular variety is required, now is a good time to take cuttings of the lateral growths. Of course, in that case, the thumb and finger should not be used to remove them before they are grown large enough. Put each cutting in a small pot of fine sandy soil, and they will root freely in a hotbed, if taken off at a joint; but the heat should be very gentle, and well nigh spent before the cuttings are put in the frame. *J. Douglas.*

CHRYSANTHEMUMS.

The details of summer-management are numerous, and very often rendered irksome in the carrying out by reason of the many other duties requiring attention at this season. So great a hold has Chrysanthemum culture upon some persons, that numerous details beyond affording water to the plants, are done in the evening, rather than let them suffer from neglect. I know of employers who begrudge the time spent during the day upon these plants, yet when they are in full beauty prize them highly. So much then for perseverance under difficulties of the successful cultivator. One of the greatest errors a person can be guilty of is attempting to grow too many plants, it being, as I have often said, better to grow fifty well, than spoil a hundred. No matter for what purpose the plants are cultivated, they will be by this date in their flowering pots; the only exception being the latest batch of bush-grown plants, or the Pompons. I am this year giving Porter's Invincible Wire Cocks a trial, and where a difficulty is experienced in standing the pots all the summer on a hard bottom, or on boards, tiles, or slates to keep worms out, these cocks appear to be excellent excluders. They consist of closely-woven brass wire, through which a worm cannot pass, and one is laid over the hole, and broken cocks put in in the ordinary way on the top. Pots of small diameter may be employed for Pompon and single-flowered sections. The bulk of our plants are grown in 7-inch pots, some few,

perhaps, in 8-inch. I do not care for huge plants, but rather those of upright growth, with few branches, and these carrying great lengths of flower-spikes.

A good many complaints have reached me about the unfavourable state of plants, owing, it is said, to a too free use of bones as drainage in place of crocks. Now, when bones are so used, they become putrid when wetted, and affect the roots injuriously that are in the adjacent mould. A compost of three parts loam to one of partly-decayed or even only fermented horse-droppings, a small portion of leaf-soil, not quite decayed, with sufficient sand and charcoal to keep the whole porous, forms a suitable compost, and to every bushel of compost 2 lb. of either Thomson's or Innes' Vine Manure may be incorporated. Assuming the plants intended for producing large blooms are now in their summer quarters, considerable attention will be needed in regulating the shoots, which are being made very rapidly, in contra-distinction to the stocked growth made in the hot weather. The bulk of our plants have three stems each, which means that they will give that number of blooms, one only being allowed to develop on each stem. I would advise cultivators to afford sufficient space for the plants, that the leaves of one do not overlap those of its neighbours. If all are tied to single stakes made fast to horizontal rails, abundance of air and light will reach them. Instead of placing the three stakes in the pot, to be afterwards tied to the wires, one stake only should be thrust into the pot, and this not in the centre, but near to the side. To this stake the centre shoot is made fast, and temporary small stakes are secured to the wires for the two side shoots. By allowing ample space for the leaves and shoots to develop fully, the wood becomes matured. When the plants are housed, the two side branches will be loosely tied to the middle stake. All side shoots must be promptly removed, so as to concentrate the energy of the plant in the selected growths. Incessant attention should be paid to tying the shoots to their supports, neglect in this often causing much disappointment at a later period; and the points of shoots being brittle and tender, they are liable to be broken off by the wind, rains, and other causes, and the loss of branches spoils the symmetry of the plants. Some persons I know of think the plants are safer when the shoots are allowed to remain loose at the point for the length of 1 foot or more, thinking that if they bend to the wind they are safer than though they were tied securely up to the tip, and I have known these same persons having to lament the loss of as many as fifty shoots in one day during a strong gale of wind or a heavy shower of rain. Remove early all small laterals from the stems. Because the Chrysanthemum is a moisture-loving subject, some persons suppose that it cannot have too much moisture at the roots, which is a mistake, often exhibiting its bad effects in pale-coloured leaves. If water be partially withheld from such plants for at least a fortnight a marked difference will be discernible. I do not mean to advise water being quite withheld from them, but a lessened supply, and only when it is absolutely necessary to prevent flagging. No better method that I know of exists for ascertaining the condition of the soil than rapping the pots with the knuckles. Use soft water if it be available, the plants thriving so much better with it than when well-water is used. If rain-water cannot always be secured, a very good substitute can be made by dissolving common washing soda in hot water, adding a quarter of a pound to every 40 gallons of clear water. If allowed to stand twenty-four hours it is ready for use, the sediment not being used, impregnated so thickly as it is with lime and other substances.

In hot and dry weather the plants will be the better if the foliage be vigorously syringed morning and evening with clear water generally; but if there be any signs of mildew, red-spider, or a slight paleness in the foliage, a handful of soot or sulphur thrown into the water at syringing time will add to the "tone" of the leaves very considerably, as well

as check insect pests. Some varieties throw up many root-suckers, but these should be promptly removed and utilised as cuttings, which will strike in a cold frame, and grow into stocky plants very useful for decoration, as one decent-sized bloom will be produced on the point of each.

One object in growing these small plants is the securing of stout suckers suitable for cuttings of new or rare varieties, which may be difficult to obtain in the usual way from the plants that are grown to give large blooms, and which, mainly owing to being highly fed, do not throw up so many cuttings as are sometimes required.

Very soon the plants will require a course of stimulating food given to them. There is such a difference of opinion as to the time when this should commence; some cultivators say not until after the bloom-buds are formed, others much earlier; my advice is to commence gently with weak doses directly the pots are full of healthy roots, when the roots need more feeding. If strong stimulants are given before the roots have taken full possession of the soil, the latter is rendered sour and unwholesome. *E. Molyneux.*

APPLE CULTURE FOR FARMERS.

THROUGH the oft-repeated freaks of Nature I am not this year in a position to send you a very glowing account of the out-door fruit crop of this district. We do not lay claim to having our fruit trees in better bearing condition than those of anyone else; yet we are satisfied when the blooming period arrives to know that our blossom appears to be as good and as strong as that of our neighbours.

We seem in this country to have frosts at such measured times as to almost completely kill the bloom of every variety of fruiting tree directly it begins to open, and in many instances long before the bud has opened. To satisfy ourselves as to this, one has only with a sharp knife to split the bud in two, and then, if killed, the embryo fruit will be found black at the core. But for those almost ever recurring frosts, and the various caterpillars which commence their depredations immediately the bloom begins to fade, so that any blossom buds which escape the frost are nearly deformed by the caterpillars; but for these two potent drawbacks, we might boast of fruits equal, if not better, than those from any other known temperate climate. We are sorely handicapped by these two very grievous drawbacks. Trees on walls may be protected from frosts, and by hand picking and careful syringing they may even be kept scrupulously clean, *i.e.* where the cost of labour is no object; but to treat extensive open orchards in a similar way is a very different thing. We have a small orchard here in a very snug sheltered corner, the very place where anyone might say an orchard ought to be, yet year after year, what with the frost and the caterpillars, our little orchard is seldom or ever what we might fairly expect it to be, and I often envy those who have better success when their orchards are freely exposed to the north and east.

To our other multitudinous studies of the pests of the insect world which prey upon and often wreck the best intentions, even of the most vigilant gardener, we must now at once commence the study of the Lepidoptera family—at any rate, that branch of it to which belong the winter moth (*Chermatobia brumata*), both male and female of them, and get our bands of cart-grease ready and placed in position for their capture when the female insects are on their march up the stems of the trees. Gardeners had better see to their laurels at once in this matter, else they may find themselves far out-distanced by farmers, many of whom, through the apparent failure of their own industry, are about to throw up the agricultural sponge, and go in for Apple growing; for this there is just now ample scope, an industry which has a great future before it. For the supply of the trees which will be required, not in thousands but in millions, I would advise the Veitches,

the Bunyards, the Dicksons, the Laings, and the Lanes to be getting their stock ready.

Apples, either raw or cooked, with a little Demerara sugar and clove thrown in, form the very best food obtainable for the feeding and fattening of pigs [and men. *Ed.*] Only imagine the flavour on your palate of such pork, bacon, and ham from animals fed on such ambrosial food as this! This country could supply all its own bacon, &c., so that there would be no fear of our being affected with trichinae. So that looking ahead, and making preparation in time, farmers, now much dispirited by low prices, might raise up an enormous trade from swine fed on Apples as above described. During the season a few Acorns thrown in would make the food even more *recherché*, for the pig dearly loves to crack an Acorn. What an odd thing that some of the almost bankrupt farmers had not already solved the problem in some such way as this, by turning some of their now almost profitless land into smiling orchards of fruit trees, and in the raising up of thousands of pigs to eat the crops. Like all other new or improved industries, there will be a run upon this trade at no very distant day, and those who have the courage first to begin and be first in the market will, of course, have by far the best of the trade. Landlords who have land which they can neither let nor sell, would do well to take into serious consideration the creation of orchards, suiting the various kinds of trees to soils best adapted for them, introducing Pears, and some of the most useful and free-bearing varieties of the Plum family.

Besides the unlimited outlet for an abundant Apple crop by means of feeding pigs with the fruit, there are a number of other industries of which fruit would form the staple product, which would receive similar impetus; such, for instance, as the extension of cider and perry manufacture, further development of the manufacture of jams and jellies, &c. All these household commodities would be brought into market at prices far below those obtaining now, thus bringing out a class of buyers in great numbers who could before never enjoy these luxuries.

Apologising for the above digression, I will now give a brief account of the state of our fruit crops. Apples are satisfactory and partial, some trees heavily laden, whilst others have few or no fruits. The Pear crop is very much worse than the Apple crop, and fruit seems to be thin everywhere, although the blossom, like that of other fruits, was all that one could desire. Plums are better, but the crop is not everywhere a good one. Cherries, especially the Morello, seem to be the fruit crop of the year in this part. Peaches and Nectarines—of these we have no fruiters outdoors, but indoors they are very fine indeed. Apricots—of these there is a sprinkling. Red and black Currants, Raspberries and Gooseberries are plentiful and good. Strawberries were very good, and the crops were saved by copious waterings and a heavy mulching before the drought had time to spoil them. Hazel-nuts as well as Acorns are plentiful, and have all the appearance of being very fine. Of Walnuts I cannot speak with certainty.

No season that I can remember could excel this one in the beauty of the foliage of the trees of this specially favoured wooded county. *W. Miller, Combe Abbey.*

FIBRE PREPARATION IN ZANZIBAR.

In a report on the trade and commerce of Zanzibar for 1892, it is stated that, in view of a considerable development of the coir and fibre industry, owing to the large number of fibre-producing plants which overrun the fertile portions of the island wherever the ground is not cleared for Cloves, some attention has been given to the question of setting up fibre-extracting mills. One such mill is said to be now in full working order, its complicated machinery being run without European supervision, entirely by natives of the island, who have been trained and instructed in their work by an energetic partner in the house. Some fifty native men and women are now employed in preparing fibre, spinning

yarn, &c., and a separate branch has lately been established for the weaving of matting. At the outset, about one thousand Cocoa-nuts were worked up in the day; now the efficiency of labour has so developed that, though the number of workers has been reduced, four thousand nuts are disposed of per day. A difficulty is experienced in the supply of material, although the Cocoa-nut tree flourishes throughout the island, in consequence of the absence of any adequate means of transport: it consequently pays better to take dhow loads of fruits from the mainland than to collect them on the island itself. The same difficulty stands in the way of utilising the Agave leaf, which grows in a desultory way wherever the ground is not cleared, and which would produce a still more valuable fibre did any means exist for collecting and bringing the raw material to the mills.

FUCHSIA DUNROBIN BEDDER.

THIS dwarf Fuchsia is one of the best things in the Chiswick gardens. There are two beds of it, one near the Council-room, and the other by the side of the walk leading from the conservatory. This form of *F. Riccartoni* deserves to become popular. It is very dwarf, not more than a foot in height at the utmost, and the leaves, though small, are numerous, and of the deepest green colour. The flowers are crimson, produced with great freedom, each plant a mound of foliage and blossom. A single bed of it is attractive, but doubtless more use will be made of it for edging large beds, and for this purpose it is well adapted. There is another important point, and that is its hardiness. Plants at Dunrobin Castle have stood many winters. It was raised by Mr. Melville of Snowdrop fame, and is likely to get as popular in gardens as any Fuchsias. Its dwarf habit is a great commendation. *V.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

CORN SALAD OR LAMB'S LETTUCE.—A sowing should now be made in a warm sunny spot, in drills 6 inches apart. The plants stand the winter well on rather poor, dry soil, but on that which is damp, rich, or heavy, it gets cut up in frosty weather, therefore a dry and warm place should always be found for it. When large enough to handle, thin the plants to 6 inches apart.

AMERICAN OR LAND CRESS.—This plant, being a perennial, is often left uncared for, but finer leaves are afforded by young plants, and seed should be sown annually at this time, and cultivated as recommended for the foregoing.

GLOBE ARTICHOKE.—Plants which may have finished their supply of head should have the old flower stems cut off at the ground-level, and all the outside leaves removed, for after the recent heavy showers, young growths will form very rapidly, and these will, by the latter part of September, be strong, and may be drawn together and blanched like Cardoons. The growth of the plants should be aided by liberal waterings of liquid manure. The stronger and quicker the growth, the tenderer will it be when blanched. Small suckers may be removed with a heel, and placed in 6-inch pots, plunging them into a bed of coal-ashes, watered, and shaded during bright sunshine. They will make nice plants by the arrival of winter, when they should be removed to cold-frame protection. Plants treated in this manner will produce fine, earlier heads the following season than if left to take their chance in the open ground.

LEEK.—Those intended for early exhibition purposes should now be earthed-up for blanching, which should be done when the soil is dryish, or the outside leaves will decay away. Succession plants may be encouraged to grow by affording manure-water or some artificial manure.

CELERY.—Afford the plants a dressing of soot, especially applying it on the soil alongside, to deter

snails and slugs, which eat holes in the leaf-stalks, spoiling their appearance, and setting up decay. Suckers should be removed from time to time, not allowing them first to get strong before breaking them out. Heavy watering must be afforded, and the soil not allowed to get dry, neglect of this causing toughness in the stalks, and a certain bitterness of flavour. Do not let weeds grow to any size before clearing them out of the trenches; and with the single-handed hoe keep the surface of the soil in the same slightly stirred.

POTATOS.—The haulm of most of the mid-season kinds having died down, the tubers may be lifted, and should the rind be not quite firm, allow them to remain on the ground for a few hours after digging, which will render it firm enough to handle with care, without losing any of it. The tubers must not be left on the ground for the morrow's sun to shine upon them, or discoloration of the rind will occur and the flavour will be spoiled. Potatoes put into a cool dry cellar, with light excluded, will keep in good condition longer than if covered with straw and earth, and they are better in flavour. But whether in a "bury" or in the cellar, they should be thinly placed, so that heating does not take place. Any neglect of these precautions at this season will spoil Potatoes.

COLEWORTS.—Plants will now be forward enough for planting, and should be transferred to rich ground at about 1 foot apart in the row, and 1½ foot from row to row. Dibble them into drills made with the hoe about 3 inches deep, and close the drill in about six weeks, and earth them up late in October.

CARROTS.—Where the early crop is fully grown, and it is not required immediately, it will be advisable to take up the roots, and store them in a cool cellar, for if much rain were to fall, the roots would split and become comparatively useless. A sowing of an early variety may now be made on a warm border and in such a manner that the beds may be protected from frosts. This sowing will be of much service in the spring months, particularly if Carrots are not forced. Carrots do not suffer from frost in a light sandy soil, but in that which is retentive and cold there is difficulty in keeping them in good condition throughout the winter if it be a severe one.

TURNIPS.—These may still be sown in good ground, choosing the hardiest and quickest growing kinds for the purpose. If the ground be not in a very fertile condition, a dusting of guano on the surface should be made before sowing.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdall Gardens, York.

CAMELIAS.—If the borders are well drained liberal supplies of water may be afforded, but the amount of water should not be so large as to induce fresh growth to be made, as the buds are now set earlier in point of time than I have observed them. Lady Hume Campbell and C. fimbriata alba are very forward with me, and liquid manure will be afforded these varieties sometimes, and daily syringings with the garden-engine or the water hose. If scale or mealy bug are present it is a good time for thoroughly cleaning the plants.

CLIMBERS.—Continue to give climbing plants in the conservatory plenty of water, say once a fortnight if in borders. *Datura Knightii* and *Clianthus puniceus* are plants that require a good supply of water at the roots and overhead at this season, which will greatly aid in keeping red spider in check. *Bougainvillea glabra* in large or small pots, or planted out in borders, is a useful decorative plant that requires liberal treatment, and to be kept cool, its rosy bracts being of a much better colour in a cool house. *Bougainvillea speciosa* requires a stove to flower it well, and to be planted in a border of rich soil, and have abundance of space in which to grow.

SARRACENIAS.—S. Drummondii and S. atrovirens resemble in many ways their allies of the tropics with their beautiful pitcher-like leaves with their traps for the unwary flies, requiring a temperature of from 50° to 60° in the summer, and one of 40° to 60° during the winter. They are best grown in well-drained pots filled with peat and sphagnum moss, afforded plenty of water whilst growing, and shade from bright sunshine. During the winter *Sarracenia*s should be kept slightly moist at the root.

VIOLETS.—These, if in preparation for winter flowering, must be kept clean and healthy; a slight sprinkling of nitrate of soda being afforded them before a shower of rain, which will help them con-

siderably if they are looking yellow, or have red spider on the leaves.

DAPHNE INDICA ALBA, AND D. I. RUBRA, whether planted in borders or in pots, should have abundance of air and light, and not too much water at the roots, or the leaves will turn of a yellow tinge, and the flower buds fall off. A top dressing of rich manure is beneficial to pot-bound plants.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

THE STRAWBERRY.—Those runners which were layered early will have made sufficient roots to fit them for planting out; and the earlier that this is done the stronger will the plants be when growth ceases for this season, with the result that the crop next season will be a good one. It is a mistake to leave runners which have been layered in small pots to be root-bound, as they then grow at the first less kindly when planted. Moreover, it is necessary to water root-bound plants in dry weather until rooting has become general; whereas, runners possessing just as many roots as will keep the ball intact go away at once if watered a short time before planting out, and once afterwards. Provided the ground to be planted was prepared and cropped as I recommended early in the spring, viz., by trenching, well manuring, and cropping it with early varieties of Potatoes, this should now be made as level as possible, which will be best done by digging it over quite shallow with flat-tined forks. It must then be trodden firmly and evenly, and the foot-prints obliterated with the fork or a rake. If space is of no moment, the distance apart to plant free-growing Strawberries like President, Sir Joseph Paxton, Vicomtesse H. de Thury, &c., is 3 feet from row to row, and 2 feet in the row, whilst those which are smaller growers, as Keen's Seedling, Oxonian, British Queen, Jas. Veitch, Dr. Hogg, Elton Pine, &c., may be set out at 30 inches from row to row, and 21 inches in the row.

THE MORELLO CHERRY.—As trees are cleared of their fruits, as is the case in this garden, it is at this season more convenient to pay attention to the trees on walls than in the spring, and there can really be no question as to the advisability of cutting out all the superfluous shoots, and those which have fruited this year, tying in as many young shoots as may be necessary for securing a crop next season. The trees should then be syringed several times, and if the land be dry, as it mostly is near walls, a heavy watering should be afforded. Standard Morellos will scarcely be so forward as wall-trained trees, but when the fruit is gathered it will be necessary to carry out a similar thinning of weak shoots and those which have fruited, but this operation need not be so severely carried out as is absolutely necessary with wall Cherries.

EARLY PEARS.—The earliest and the finest fruits of Williams' Bon Chrétien on trees trained to walls having a warm aspect, should be gathered at short intervals of time, and placed in boxes, darkened by having the lids partly closed. These may be put in a warm room or a vinery, and some should go into the fruit-room so as to afford a succession of fruits for dessert. Treated in this manner the fruits will be superior in flavour to those left to ripen fully on the trees. On pyramid or standard trees such is not the case. Clapp's Favourite and Beurré d'Amanlis Pears may also be gathered in small numbers and placed in warmth.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

PHALÆNOPSIS.—These plants should be making free growth at this season, and most of them a second leaf. On warm days I have the bottom and top ventilators of the house in which they are grown opened on the south side, closing the latter early in the afternoon, when damping down—that is, about 3 o'clock, later or earlier, according to the warmth outside. The bottom ventilators remain open day and night for the present, but the width of the openings is varied, according to the state of the weather; in the evening the house is damped once more, and at this time cow-shed drainings are thrown beneath the stages on which the plants stand. In the morning clean water is syringed amongst the plants, and a moist atmosphere maintained generally. The black thrips which attach themselves to the undersides of the young leaves must be closely sought for, as these insects increase fast, doing much damage. A sprinkling of soot in the evaporating troughs once a fortnight will be found of benefit.

THUNIA MARSHALLIANA AND T. BENSONIÆ.—These species, having finished flowering and growth, may be removed to a lighter and airier house than their growing quarters, and less water should be afforded, but on no account must the plants be dried off for the present. Our plants are removed to the end of the Mexican House, and nearly full sunlight allowed to fall on them, this house being shaded no more than is really needed, i.e. for a few hours only during the brightest part of the day. The gradually withholding of water will take quite another month to turn the leaves of a yellow colour and cause them to fall off. This done, the plants should be removed to a much cooler and more airy house, such as an early Peach-house or vinery, from which the fruit is cut, to mature the growth before resting. In this stage they will need very little water.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINERIES.—Vines recently planted should be encouraged to grow freely in order to complete their growth while there is sun heat and light to mature it. Care must be exercised to prevent the overcrowding of laterals. The syringe should be used freely in the afternoon, shutting up with sun heat at 85° or higher. When the trellis space is fully occupied with canes, a general course of stopping and thinning must be closely followed, and where growth is completed, let the warmth, accompanied with a free circulation of air, be maintained night and day. Water at the roots in sufficient quantity should be afforded to moisten the whole of the soil; merely moistening the surface of Vine borders will act most unfavourably even on young Vines. When grafting or inarching has been practised, an examination of the ties should be made, these being cut or loosened if a union has taken place, and the wood is swelling fast, otherwise maintain them intact. Follow former advice regarding the removal of small seedless and shanked berries from ripe and ripening grapes. Those to afford fruit for table for some time to come should be kept cool, and have the bunches shaded by some dark sort of tissue paper for black varieties, while white paper is more suitable for light or golden-coloured Grapes.

SOILS.—It is an important matter to the grower of fruit to have plenty of good soil, dug and stacked, at the present season. When digging, the right depth of the richer portion of the loam should be ascertained, which is seldom more than 2 or 3 inches, although in some old pastures 8 inches may be taken with advantage. The rough grass should first be removed from the turf, as it is sometimes productive of fungus on decomposition, and the soil, when carted in, should be stacked in long sharp-pitched ridges from 6 to 12 feet wide at the base, and the site for the stacking should not be a wet one. Where turf or other maiden soil cannot be had, it is a good practice to collect the surface-soil from vegetable ground, and mix rotted stable-dung with it (plenty of old straw in the soil is advantageous); and when this has been in a ridge for a year, and having been carefully turned during the time, it is in good order for use. This is an old practice, which we have often witnessed in London market gardens, where there is no old pasture to go to.

TOMATOS.—Those plants lately placed in their fruiting quarters should not be coddled, but have plenty of air and light, and the laterals removed, or stopped at one leaf from the stem, and as these plants are to furnish fruit in early winter, they should have free drainage, and the soil should contain no fat-manure, as assistance can be afforded to better advantage when the fruits are developing. Cuttings may now be taken off, and rooted in bottom-heat. Tomato-plants are sometimes cropped too heavily at this season, shortening the period during which they bear fruits, and although such plants may be restored to vigour by allowing young growth to take the place of the old, such plants cannot produce such fine fruit as young plants.

CUCUMBERS.—Those which have been grown from cuttings are inclined to bear fruits too freely, to the shortening of their existence, therefore thinning of the fruits should have regular attention. Winter fruiteders should be encouraged to make short-jointed strong bines, by a free admission of air and light. Cucumber plants grown in high temperatures on the non-airing method, fail in the hands of some growers, owing to the neglect of thinning of fruits and shoots. Frequent surfacing with bone manure and soil mixed together, when the roots appear at the surface of the soil, is of great use in maintaining activity of growth,

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, AUG. 8 { Royal Horticultural Society, all committees meet, and lecture by Mr. J. G. Baker, F.R.S., on Cannas, at the Drill Hall, James Street, Westminster.

SHOWS.

SATURDAY, AUG. 5 { Royal Horticultural of Southampton, and Monday.
 MONDAY, AUG. 7 { Beddington, Carshalton and Wallington Horticultural.
 TUESDAY, AUG. 8 { Leicester Horticultural in the Abbey Park.
 Royal Horticultural at the Drill Hall, James Street, Westminster. Exhibition of Cannas.
 WEDNESDAY, AUG. 9 { Gardening and Forestry Exhibition, Earl's Court. Flowering and Foliage Plants (two days).
 THURSDAY, AUG. 10—Taunton Dean Horticultural.

SALES.

WEDNESDAY, AUG. 9 { Sale of Stove and Greenhouse Plants at Langley Broom, Langley, near Slough, by Protheroe & Morris.
 FRIDAY, AUG. 11 { Sale of Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—62°·9.

The Rothamsted Jubilee. As a nation, we are rather apt to disparage ourselves and our institutions, and, as regards educational matters, not without reason. The fifty years of continuous experiment on a settled plan at Rothamsted form, however, a glorious exception, and one which no nation has attempted to rival. The several crops in the experimental fields are made to tell their own tale every year, and every condition of cropping and manuring is carefully noted and compared. Every fluctuation of temperature or rainfall is registered with special reference to the crop. Careful analysis of every crop and of the drainage water, at different levels, is made, and samples are preserved for future investigation if necessary. The records of all this work, which comprises researches into animal as well as vegetable growth, are necessarily extremely voluminous, but means have been taken by lectures and otherwise to render the experience gained available alike to the man of science and to the practical farmer; and Dr. GILBERT, who might fairly consider that he had earned his rest, is once more to cross the Atlantic this autumn, and carry on the propaganda in the States.

This work at Rothamsted, as important as it is colossal, has been achieved by the keen insight, the grasp and perseverance of Sir JOHN LAWES, and by the untiring energy of his coadjutor, Dr. GILBERT. Their joint work began fifty years ago, on a relatively small scale, in the farm attached to the park at Rothamsted, when a barn served as a laboratory. It has grown and developed to a degree that may fitly be called colossal. Of course, some of our Continental friends, not conversant with our way of doing things, may think the Government gives a large subsidy. Here, we know it does nothing of the sort. The whole scheme is, and has been, worked at the expense of Sir JOHN LAWES, who, moreover, has set aside a munificent fund in trust, as well as land and buildings, in order that the work may be efficiently carried on in the future.

On Saturday last a distinguished and representative gathering met at Harpenden to celebrate the jubilee of the co-partnership in work of Sir JOHN LAWES and Dr. GILBERT. A massive granite boulder is erected to commemo-

rate the event; a portrait of Sir JOHN LAWES and a handsome gift to Dr. GILBERT were also presented as evidences of the appreciation in which half a century of work—and such work—is held by those capable of forming an opinion. France and the United States were, as is meet, duly represented on this occasion as well as our leading Societies, scientific and practical.

"Dr. GILBERT and himself were," said Sir JOHN LAWES in replying to the addresses, "bound by no ties; but this connection, as he had said, had continued fifty years. What was the cause of that? It was nothing less than that he had an immense love of the work they were engaged in. He had delighted in the work from the very beginning, and had given as much time to it as he could consistent with other duties; but Dr. GILBERT had made it the work of his life. Had it not been for the labours of Dr. GILBERT the affairs at Rothamsted would have been in a different state to that in which they now were. Dr. GILBERT was not only at work when he was at home, but what were called holidays were spent by him in visiting other countries and places, by putting himself in communication with other bodies, so that he might make his own work more valuable to those at home. This year he was going to Chicago to deliver a course of lectures on the work at Rothamsted."

POLYGONUM SACHALINENSE.—So much interest has been excited by our notice of this plant as a forage-plant in a recent Number, that we are induced to revert to the subject, and give an illustration of the plant producing its seed-vessels. The plant was first described by F. SCHMIDT in 1853, and on its introduction to our gardens in 1869 or 1870, by Mr. WILLIAM BULL, it was made the subject of a descriptive notice by ourselves in our volume for 1870, December 3, p. 1599; and again in 1886, December 25, fig. 158 (here reproduced). It was figured also in the *Botanical Magazine*, t. 6540, and its great merits as a decorative plant have since been generally recognised. Our distinguished colleague, M. ED. ANDRÉ, introduced it into France from Moscow in 1869, but it was not till quite recently that M. DOUMET ADANSON called attention to its value as a forage-plant. As some confusion has arisen in the conversion from the simple metric system of weights and measures to our preposterously absurd muddle, we repeat the figures as given by Messrs. DOUMET ADANSON and BALLET. The total weight of produce in the green state varies from 20 to 40 kilogrammes the square metre, or 200,000 to 400,000 kilos. the hectare, equalling 200,000 lb., or 89 tons, 6 cwt. 16 lb., to 178 tons, 12 cwt. per English acre, or nearly double the weight of a crop of Cabbage planted at 2 feet apart, and each plant weighing, when full grown, 10 lb.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Royal Horticultural Society will be held on Tuesday, August 8, at the Drill Hall, James Street, Victoria Street, Westminster. On this occasion Mr. J. G. BAKER, F.R.S., of the Royal Herbarium, Kew, has promised to deliver a lecture on Cannas, which will commence at 3 o'clock. The Council of the Society will feel obliged by those exhibitors who will make special exhibits of these plants on that day. The Society will not hold another meeting in the Drill Hall until September 12, owing to the circumstance that it will hold a show at the Agricultural Hall, Islington, from August 29 to September 1 inclusive.

GARDENERS' ORPHAN FUND.—The monthly meeting of the Committee took place on the 28th ult., at the Horticultural Club, Hotel Windsor, WILLIAM MARSHALL, Esq., in the chair. In the course of the meeting some matters of interest connected with the administration of the Fund were discussed, and reserved for further consideration.

The Hon. Secretary announced the following receipts:—From Mr. J. LYNE, Local Secretary, The Gardens, Foxbury, Chislehurst, £16 1s.; Mr. G. W. CUMMINS, Local Secretary, The Gardens, The Grange, Wallington, sale of flowers at Croydon Horticultural Show, £8; collected at the Wimbledon Flower Show, £4 2s. 6d.; and box per Mr. J. Kneller, The Gardens, Studley Royal, Ripon, 9s. After the transaction of some routine business the Committee adjourned until the last Friday in October.

THE CHRYSANTHEMUM SEASON.—The opinion expressed by some that the season of bloom of the Chrysanthemum will be unusually early this year, is not shared by all the leading growers. At the recent meeting of the Committee of the National Chrysanthemum Society, it was reported that some of the affiliated Societies were arranging to hold their shows on an earlier date than usual. Mr. NORMAN DAVIS and other growers of repute were of opinion the height of the blooming season will be but little earlier than usual. It was held that, owing to the drought, bud formation in the Chrysanthemum had set in earlier than usual, but as many took their last buds three weeks or a month ago, the plants, owing to the rainy weather, had commenced to make growth, and that might go on for six weeks; then the crown bud would be made, and so he thought the flowers would be at their best at the usual time. Mr. H. J. JONES and Mr. C. GIBSON were of the same opinion. It may therefore be well that undue haste in putting forward the dates of Chrysanthemum shows be not shown at present.

WASPS.—These troublesome insects are very numerous this summer, the effect doubtless, in part of the general neglect in catching the queens in the early spring. It is not true economy to offer no rewards to the boys for catching them, as much fruit—in value greatly exceeding the rewards given for catching them—is spoilt. It is always advisable to burn the queens that are brought, the enterprise of some boys leading them to offer the insects over and over again as fresh catches, indeed until they are very far from being "fresh." A squib made of stiff paper and filled with two-thirds flowers of sulphur and one-third gunpowder, rammed in tightly, is a very good exterminator if set alight, and thrust into the entrance—this, or any other entrances to the nest being closed securely with soda. Gas tar, petroleum, carbolic acid, are all of use in destroying wasps' nests. Hanging nests can be brought down in the evening, with a gun loaded with number six shot, and half an ordinary charge of powder. When it has fallen cover at once with a large piece of stout canvas and trample the wasps to death; or syringe it with petroleum and set it alight. It is always best when wasping to wear a muslin net secured over a wide brimmed felt or straw hat, and thick gloves and gaiters. Enormous numbers may be trapped in various ways, but the destruction of the nest is the most effectual cure for the present plague. Speaking of wasps, we may mention that a correspondent has sent us blooms of Marie Van Houtte Rose eaten by wasps in a way we never noticed before.

NATIONAL ROSE SOCIETY.—"As enquiries have reached us as to the character of a circular recently issued by Mr. C. J. GRAHAME, owing to the circular and envelope being headed "National Rose Society," we think it should be clearly understood by the members—1. That Mr. GRAHAME has resigned his position as a member of the committee. 2. That the document in question has no official sanction whatever. H. HONYWOOD D'OMBRAIN, EDWARD MAWLEY, Hon. Secretaries."

EXPERIMENTS COMMITTEE OF THE KENT COUNTY COUNCIL.—A meeting of the above Committee was held at the Horticultural College, Swanley, on Thursday, July 27, and Mr. P. SMITH, M.A., B.Sc., gave an account of "Canker in Apple Trees," illustrated by diagrams. He said that this disease was usually caused by a fungus, *Nectria ditissima*,



FIG. 32.—POLYGONUM SACHALINENSE: RECOMMENDED AS A FORAGE PLANT. (SEE P. 158.)

which gained entrance to the wood through wounds in the bark, caused either by branches being broken or rubbed, and also by injury from frost. This disease once being established in a tree, usually spreads over it. He went on to say there was probably no absolute remedy, but injury to the bark should as much as possible be avoided, and in pruning the branches should be so cut off as to expose the wound as little as possible to rain. He recommended painting over the wound with gassar. Good treatment and cultivation of the soil aided the trees to resist the disease by keeping them in a healthy growing condition. The fact that certain varieties are much more subject to the disease than others was discussed, and it was thought that this was to some extent governed by the hardness of the wood, the more sappy-wooded trees being most liable to be attacked. A vote of thanks to Mr. P. SMITH was proposed and seconded. At the next meeting, August 10, Mr. J. V. WING has offered to give an account of his trials of manures on Potatoes this year, and Professor CHESHIRE an account of cultural methods observed in France, from which he has just returned.

"RED SPIDER."—A correspondent sends us a printed copy of Miss ORMEROD's favourable remarks on some Hop leaves which had been very effectively treated with a wash of his invention for the eradication of "red-spider." Any really efficient and to plants non-injurious means of lessening the numbers of these troublesome acari or mites—total eradication is out of the question—would prove a great boon to gardeners, if it should be found as cheap and as easily applied as flowers-of-sulphur. Perhaps the inventor of the remedy will kindly furnish us with a small quantity for the independent testing of its alleged powers.

GERMAN DENDROLOGICAL SOCIETY.—The Deutsche Dendrologische Gesellschaft will hold a special meeting for the confirmation of statutes and other purposes at Leipzig, on August 27, at 9 A.M.

THE JARDIN DES PLANTES.—A list has been published of the living plants offered by the Museum of Natural History, Paris, to other establishments in exchange.

BRITISH FLIES.—Mr. F. V. THEOBALD's account of British flies (ELLIOT STOCK), vol. i., should have received notice before. It is a systematic account of Dipterous insects illustrated with numerous figures. That these insects possess more than a pure scientific interest may be estimated when it is mentioned that fleas, gall flies, gnats, midges, of which no fewer than 268 species have been enumerated! and others are comprised in the group. References to the literature of each family are cited. Although many of the Cecidomyiidae are injurious to plants, such for instance as the Hessian fly, yet others render service by effecting the fertilisation of flowers. We do not know of any list of these gall-flies so complete as that given by Mr. THEOBALD, but in the account of the literature the publications of Professor TRAILL and of Mr. FITCH should have been mentioned. On the other hand we are glad to find a summary of the geological history of the group, including the notorious flies in amber, whilst the chapter summarising the ancient and modern systems of classification will be read with interest by entomologists who have not the means nor the time to study longer treatises.

FLORA AUSTRALIENSIS.—We are gratified to be able to announce the forthcoming publication of an eighth volume of this work, which will comprise the numerous additions made by Baron Sir FERDINAND V. MUELLER and others to the Flora of Australia, since the publication of the seventh volume by the late Mr. BENTHAM. The very numerous more or less fugitive reprints from various Australian publications will now be gathered together into one volume by their author, whose zeal and energy will, we trust, long remain unquenchable.

DUTCH HORTICULTURAL SOCIETY.—We are informed that the "Dutch Horticultural Travelling

Society" proposes to visit London shortly, to see some of the places of interest and nurseries in the vicinity of London. They will probably be present at the next meeting of the Royal Horticultural Society at the Drill Hall on the 18th inst. The conductor of the party is Mr. J. K. BUDDE, the Curator of the Botanic Garden, Utrecht, and the head-quarters in London will be WEDDE'S Hotel, 12, Greek Street, Soho.

BULBS FROM ASIA MINOR.—Mr. E. WHITTALL, a merchant of Smyrna and an ardent lover of plants, has, says the *Kew Bulletin*, considerably enriched the Kew collection of bulbous plants. He is collecting systematically, and the results promise to be very successful.

BEDDINGTON, CARSHALTON AND WALLINGTON HORTICULTURAL SOCIETY.—A DINNER COMPETITION.—In connection with the annual show of the above Society in Carshalton Park, on the August Bank Holiday, a Conference on Gardening will be held at five o'clock in the afternoon. Superior and inferior garden produce will be exhibited, and a short address thereon delivered by Mr. J. WRIGHT, F.R.H.S. Questions on any points in connection with gardening may be asked by any persons at the meeting, or may be previously submitted to the Secretary, in writing, with or without the names of the querists. Among the competitions is the following, open to wives and daughters of all subscribers and members, for the best dinner to be produced at a cost not exceeding two shillings. The dinner must consist of meat, and at least two distinct kinds of vegetables, and be sufficient for a man, his wife, and three children. The value of each article must be clearly stated. 1st Prize, £2; 2nd do., £1 10s.; 3rd do., £1; 4th do., 10s.

BULBS FOR THE LONDON PARKS.—We understand that Messrs. W. CUTBUSH & SON, nurserymen, Highgate, N., have received the order for the supply of bulbs to the amount of £500 for the planting of the parks and open spaces under the control of the London County Council in the season 1893-4. The same firm will also furnish the supply of bulbs required in the Royal parks, viz., St. James', Regent's Park, Hampton Court Gardens, &c.

FLOWERS IN SEASON.—We have to acknowledge the arrival from Messrs. DOBBIE & Co., Rothesay, N.B., of a boxful of very fresh-looking blooms of the following varieties of border Carnations, than which nothing could be more pleasing. Among whites were White Dame, a continental variety of great merit; Florence Emily Rhoday, also exceptionally good; Empress, Mrs. Frank Watts, and Mrs. Muir. Rose Celestial and Mary Morris represented the pink-coloured varieties, while Mrs. R. Hole and Terra Cotta did duty for the buffs. The scarlets were Huntsman, said to be very free; Queen of Bedders, Dundas Scarlet, and Guiding Star, the best of the lot.

ROMNEYA COULTERI.—Messrs. VERTEGANS send us flowers of this very lovely Papaverad, with its glaucous, deeply-cut foliage, and large white flowers, like those of a single Pæony, but with the crumpled petals indicating its relationship to the Poppies. It is hardy in the Midlands, but Messrs. VERTEGANS recommend that when the plants die down in autumn they should be covered with some light mulching.

VALLOTA PURPUREA.—Messrs. VERTEGANS send us flowers from a bulb received from the Cape as a white variety. The colour, however, is a delicate warm pink, and very beautiful.

"KEW BULLETIN."—Three numbers are before us—those for April, May, June and July. The articles on Economic Botany and Tropical Horticulture are very serviceable to experts, but the general reader will feel greater interest in the miscellaneous notes which give an idea of the current work at Kew. The descriptions of new plants, Orchids, &c., render the *Bulletin* indispensable to the systematic botanist. It is interesting to learn that the first head gardener at the famous garden of Buitenzorg was trained at Kew. His name was JAMES HOOPER, who on the recommendation of Sir JOSEPH BANKS joined the Embassy to China under Lord AMHERST, and was ap-

pointed to Buitenzorg in 1817, and remained there as head gardener till 1830, when he left Java for his health, but died before reaching Europe.

ROSES.—We learn that Messrs. Alexander, Dickson & Co., of Newtownards, Ireland, are acknowledged to have had the best show of Roses at the Rose garden of the Exhibition at Chicago. Among the varieties that have done well are Mrs. John Laing, Marquis Dufferin, Marchioness Dufferin, Jeannie Dickson, and others. According to *Garden and Forest* sundry German exhibitors combined to exhibit the largest numbers of varieties. Boskoop sent a good collection, but we do not read of our great English firms having taken part in the display, which seems too strange to be correct. Standard Roses have excited the surprise of the Americans, who, it appears, are not familiar with such monstrosities.

THE HANBURY INSTITUTE.—The *Atti del Congresso Botanico Internazionale*, 1892, contain an account of the opening of the Botanical Institute, which the University of Genoa owes to the munificence of Commendatore THOMAS HANBURY. A detailed description with plans of the building is given. Mr. HANBURY has also presented to the Institute the rich herbarium of Professor WILKOWSKI of Prague. Dr. TREUB of Buitenzorg, Baron Sir FERDINAND VON MUELLER, Professor CARL HANSEN of Copenhagen and others have contributed to the new Institute, where also may be found collections from Dr. HANS SCHINZ, NILSSON of Götteborg, Professor CARUEL, and many others.

DORYANTHES GUILFOYLEI.—An addition to this magnificent genus has been made by Mr. F. M. BAILEY, the Government botanist of Queensland. A specimen has flowered for the first time in the Botanic Garden, Melbourne, under the care of Mr. GUILFOYLE, to whom it is dedicated. According to a communication in the *Garden* the leaves are 8 feet long, the extreme height of the inflorescence 16 feet; the actual flower-spikes occupying about half of this length, with rich crimson Amaryllis-like flowers. An engraving is given in the *Garden* of July 22, from a photograph sent by Mr. GUILFOYLE, which shows the general habit of the plant, and no doubt the botanical details will be given subsequently.

A NEW ALPINE GARDEN.—According to the *Illustration Horticole*, the Horticultural Society of Dauphiny and the Tourist Society of the same district have combined to form an alpine garden at Champrouse at an elevation of 1800 metres. Five to six hundred plants are already planted. The garden is intended as a refuge for rare or interesting species whose existence in a wild state is threatened, and as an establishment wherein such species may be propagated for distribution.

PLANTS OF NORTH ABYSSINIA.—Professor PENZIG, of Genoa, contributed to the International Congress held in that city in 1892 a list of the plants met with by him in a journey from Bogos to Mensa, in Northern Abyssinia. A reprint of that paper is now before us, in which we find several new species described, such as *Cleome Hanburyana*, *Crotalaria macrocarpa*, *Kalanchoe Schweinfurthii*, *Pimpinella camptotricha*, &c.

STAPELIAS.—The collection of Stapelias formed by the late Mr. THOMAS WESTCOMBE of Worcester, has, says the *Kew Bulletin*, been presented to Kew by his sister, together with numerous notes and drawings. Mr. WESTCOMBE's collection was the richest in the country in private hands, but there was at one time a fine series in the Botanic Garden, Oxford, and which are probably now at Kew.

HIPPEASTRUM PROCERUM (the blue Amaryllis), which is, or lately has been, in flower at Kew, was figured by M. DUCHARTRE in the *Journal de la Société Impériale et Centrale d'Horticulture*, 1863, ix., p. 425, with a description and an account of the anatomical conformation of the leaf, which is very curious. The plant was introduced into France from Brazil by M. BINOT.

GODETIA LADY ALBEMARLE.—We have received several heads of plants of a selected strain of *Godetia Lady Albemarle* from Messrs. R. VERTON & SONS, Exeter, loaded with blossoms, proving the excellence of the variety for summer blooming, and its admirable qualities as a subject for massing. There are several garden varieties of annual *Godetias*, as *Duchess of Albany*, with blooms of satiny white, with a pyramidal habit, and very proliferous; *Satin Rose*, similar to the subject of our note; *The Bride*, white and carmine flowers, and very free; and *G. Whitney* and some of its varieties, all very nice decorative subjects for the summer flower garden or the greenhouse. To obtain strong plants for early blooming, seeds may be sown in the late autumn, and afforded treatment similar to that found suitable for *Mignonette* intended for early spring flowering. Seeds may also be sown in March, thinly in pots, and thinned out to three or four in a pot, which may be grown in pots, or planted out after due hardening in late April. *Godetia* is now included under *Eurothera*.

STEM TUBERS OF POTATO.—The production of tubers on the haulm is not an uncommon event, especially when the original tubers have been injured by wireworm or a thrust from a spade. Dr. PATENSON sends examples where the tubers formed on the stem are deeply and irregularly lobulated, as in what doctors call Cauliflower excrescence. We have not seen a similar case, but cannot, on superficial examination, ascertain the cause.

BEDDING PANSY.—Mr. J. FORBES, of Hawick, sends sample blooms of a new Pansy called *Border Maid*, which is stated to be a compact grower and a free-flowering variety. The flowers are of a medium size, good substance, lemon-yellow, deeply edged with violet; eye spots, rich purple, and with radiating purple lines on the lower petal. It is a distinct and bright-looking variety.

THE SCOTTISH ARBORICULTURAL SOCIETY.—The annual excursion of the Society will take place from August 7 to August 12. Visits will be made to Windsor Forest, Cliveden, Dropmore, Burnham Beeches, and the New Forest, on the return from which Kew Gardens and the Earl's Court Forestry Exhibition will be visited. A special correspondent will favour us with some details of the excursion.

STARCH FORMATION.—When a leaf is exposed to sunlight, it is well known that among the earliest changes noticeable is the formation of starch; and, further, that this starch-production is stopped by placing the leaf in the dark, so that if half of the surface of the leaf be exposed to the sun, and the other half be covered with opaque paper, the uncovered half will contain starch, while none will be formed in the covered portion, and that which it had previously will disappear. It had come almost to be an article of faith that this starch formation was the primary and universal result in the process of "assimilation," which is consequent upon the exposure of the green material (chlorophyll) to light, and the elimination of oxygen. Working physiologists, indeed, were more cautious in their utterances than text-book writers and teachers. It now appears from the recent researches of Messrs. H. T. BROWN and G. H. MORRIS, as presented to the Chemical Society in April last, that cane-sugar is the first product (and not glucose, as had been by many supposed), and as this sugar is formed faster than it can be utilised, the excess is deposited in the form of starch. This reserve of starch is drawn upon when the light fails, the starch being then dissolved by a ferment, or "enzyme," known as diastase, which is secreted by the protoplasm of the cell in amount proportionate to the needs of the case, so that the formation of diastase is looked on as an effort to remedy the consequences of defective nutrition. The course of events in the process of assimilation appears to be, first, formation of soluble cane-sugar, then deposition of insoluble starch, followed by formation of diastase-ferment, which dissolves the starch, and allows of its transmission in a fluid state, or as sugar,

from the place at which it is stored to the place where it is used up in the processes of growth and activity, which demand supplies of nourishment for their fulfilment.

HOW TO PREVENT LOSS IN STABLE MANURE.

—The use of straw litter in stables has been suspected of being by no means desirable, since it facilitates loss of nitrogen—that valuable plant food. A. MUNTZ and A. CH. GIRARD have recently found (vide *Comptes Rendus*, cxvi., p. 108), that when straw is used in the stable 63.6 per cent. of the nitrogen in the manure is lost, whereas when peat-litter is employed 48.3 per cent. is lost. The best medium for preventing this loss appears to be light soil, which only permits 25.7 per cent. of the nitrogen to escape. For the retention of the ammonia in stable-droppings the use of copperas, gypsum, superphosphates, &c., have been recommended, but MUNTZ and GIRARD find that gypsum is of no advantage, whilst the addition of copperas to the stable-litter actually increases the loss of this substance, and they explain the inefficiency of the added chemicals by the alkalinity of the animal excreta which have to be saturated before any ammonia can be retained. In practice, the use of straw-litter mixed with peat or a soil rich in humic substances appears to be on the whole the cheapest and most convenient method of checking the enormous losses of ammonia which occur in stables; if peat is not readily accessible, dry light soil rich in humus should be sprinkled on the usual straw-litter.

HOFGARTENDIREKTOR JÜLKE.—This accomplished gardener, better known in Germany than here, died at Sans Souci on June 14, at the age of seventy-eight years. He was made Königlichem Gartenbaudirektor on the advice and recommendation of the landscape gardener LENNE, whose successor he became at Sans Souci in 1866. In consequence of failing health, JÜLKE was pensioned some years ago. Besides occupying the post of Chief Garden Director he was President of (and tutor in) the School of Horticulture. Dr. JÜLKE, a colonial pioneer who was murdered at Witia in East Africa, was a son of the deceased.

EARLY HOPS.—As showing the earliness of the season, Messrs. EDWARD WEBB & SONS, Seed Merchants, of Wordley, Stourbridge, state that they received their first pocket of Worcester Hops on Saturday last. It passed the public scales on Friday, which is the earliest date on record. The grower is Mr. H. T. TAYLOR, Showle Court. The quality of this year's crop is likely to be good, but a light yield is expected.

PUBLICATIONS RECEIVED.—*The Big Apple of the World*. By R. SMITH, F.R.H.S., Bradwell Villas, Bishop Street, Shrewsbury.

HOME CORRESPONDENCE.

RICHARDIA LUTWYCHEI.—Will Mr. Brown kindly answer the inquiry concerning *Richardia Lutwychei* which was asked in the *Gardeners' Chronicle* for June 17 last? The point at issue is whether the *Richardia* described by Mr. Brown, p. 568 of the last volume, under the above name, is not really the old *R. hastata*. Those persons who consider that this is so, would have their opinion considerably strengthened by the fact that growing plants of *R. hastata* at Kew have in a marked manner the setose petioles, concerning which Mr. Brown says, "it (*R. Lutwychei*) is abundantly and easily distinguished from every other known species, except *R. melanoleuca*, by its setose petioles." Another point is that the *R. melanoleuca* at Kew is quite distinct from the *R. melanoleuca* of the *Botanical Magazine*. An Inquirer.

PRUNUS PISSARDI.—The present season appears from the reports of your many correspondents in all parts of the kingdom to be a fruitful one. I am able to speak well of fruit in this part of Southern Norfolk. Apples, Pears, and Plums are heavily cropped. The Strawberry crop was good, though small, and soon over, owing to the great drought. May I ask if it is usual

for the above ornamental shrub, *Prunus Pissardi*, to fruit. I have a nice pyramidal tree of it at the back of my cottage in a very cold and exposed situation. [Hitherto *Prunus Pissardi* has not fruited freely in this country, it being a recent introduction; but now that the trees have arrived at fruiting age, it will do so generally. Ed.] J. Batters, Gillingham, Norfolk.

CUCUMBER TENDRILS.—Will some reader of the *Gardeners' Chronicle* give his opinion as to whether the tendrils on a Cucumber plant should be removed or not? It is the opinion of many that, as they are produced in Nature, they should certainly remain on the plant, and that they strengthen it by the absorption of nitrogenous food from the atmosphere (!) But they overlook the fact that in Nature they are not provided with the ordinary means at our disposal when under cultivation, viz., training on wires. In my opinion, the tendril is an appendage produced at a great expense to the plant for a mechanical purpose, and which contains very little chlorophyll, and is therefore incapable of assimilating food from the atmosphere in sufficient quantity to repay what it costs the plant in producing it. I should be very pleased to hear the opinion of some experienced reader, as this is a matter of considerable importance considering the number of tendrils an average plant is capable of producing; and where Cucumbers are grown for seed, and not for fruit, all the more energy is required to meet the demands of the maturing seed. Haslehurst Greaves, Langport.

MURRAY'S ELECTRIC MILDEW AND INSECT DESTROYER.—The present season has been remarkable for the prevalence of blight on fruit trees, roses, and garden crops in general, alike coming in for a share of these troublesome pests; but so far mildew on outside vegetation has been entirely absent. However, we fear that with the increase of moisture, a sudden fall in temperature, and cold easterly winds prevailing, we may now have a visit of this unwelcome and unsightly visitor. I have tested various preparations all more or less accredited with exterminating qualities, but in most cases I have been anything but satisfied; but in the subject under notice I have found a real gardener's friend, which is death to all, or, I may say, all insect pests; and after repeated trials on plants infested with mildew, I am confident that it will deserve the name "electric" if the substance be applied as directed. It quickly disposes of mildew, without injuring young leaves or growth. I have also tried it against mealy bug, red spider, and American blight, and in each case I am more than satisfied with it. Another point in its favour is the fact of its having a rather agreeable odour, which is more than can be said of insecticides generally. [The composition of the substance should be made known. Ed.] J. F. McLeod, Doris House Gardens, Roehampton.

RED-SPIDER (TETRANYCHUS TELARIUS) ON VINES.—How pitiable it is to see the foliage of the Vine infested with red-spider (which, by the way, is no spider, but a spinning mite), and no means taken to check its increase. Grape growers of any experience know well that, if the foliage is attacked before the berries commence to colour, and inadequate means are taken to combat the attack, it is impossible for the Vines to finish the crop of fruit satisfactorily. There are several remedies known to gardeners, but the one that is commonly used, and that with the least effect, is smearing sulphur on the hot-water pipes, making these as hot as possible afterwards. Some sprinkle the flowers-of-sulphur on to the pipes in a powdery state, first wetting the pipes, to make the substance adhere; others make it into a thick wash, and sometimes adding soft-soap. I have never yet seen good derived from these practices, but I have seen harm done to the Vines and the Grapes, both at the time, and the year following. The supposition is that sulphurous fumes are thrown off by the heated pipes, filling the vinery, which is kept close, and suffocating the "spiders," but in the majority of cases this is only partially effected; and often the cure is worse than the pest, as the foliage is disfigured by the fumes, which causes another kind of check to the Vine. The harm done the following year by the use of flowers-of-sulphur, as previously mentioned, is that known as "rust" of the Grapes, owing to the hot-water pipes not having been properly freed from sulphur used the previous year. It is surprising what a long time sulphur retains its peculiar properties. It may be cleaned off the plain lengths of the pipes, but if it still adheres about the sockets, flanges or joints, the fumes

given off by the heated pipes when the Vines are in bloom will cause the "rust." This is a fact, strange though it may seem to the inexperienced. I once lost many bunches of Grapes that were hanging in proximity to the hot-water pipes by this cause, and I would warn others in time of the consequences of not thoroughly cleaning sulphur from the pipes before starting the Vines anew. Borax is said to be a good antidote for red-spider if dissolved at the rate of 2 oz. to 1 gallon of water, syringing the affected parts with the solution. I have not, however, tried it, as I am no believer in syringing Vines at all after the bunches are set, and not very much previously. In fact, I go so far as to say it is not necessary to syringe Vines at all that are free from insect pests, not even to induce them to break regularly into growth, as is averred by most cultivators. If no thought be bestowed upon the appearance as regards the bloom upon the berries, spider may be kept in check by vigorously syringing the leaves from the underneath side every evening, but I fail to see how this can be done without spoiling the appearance of the berries. I have spent many hours in sponging leaves infested with spider with a mixture of tobacco-juice, water, and soft-soap, but I never saw a complete cure from this tedious kind of operation. It is also next to impossible to use a sponge without in one way or the other disfiguring the bunches. Since I have had sole charge of vineries I have discontinued sponging the leaves and rely entirely upon the dry flowers-of-sulphur to prevent the spread of red-spider. Seldom can a vinery be found in which hot-house plants in variety are grown, and often including French Beans and Strawberries in the forcing season, that is quite from red-spider. I know we get a little from this cause, but the sulphur enables us to keep it sufficiently in check. The best implements for distributing sulphur are the Walbeck bellows, or the common india-rubber distributor, which dispense the sulphur in a cloud of almost impalpable powder, covering the affected parts of the leaves, and bringing it into direct contact with the insect. *E. M.* [The mite detests moisture, and it is a question if it cannot be prevented ascending the stems of the Vines by surrounding these with reservoirs of water, and also by means of a sticky smear such as is used on Apple trees. Ed.]

STANDARD APRICOTS RIPENING THEIR FRUITS.

—As an evidence that this is an extraordinary season, I may mention that in the middle of my garden stands an Apricot tree loaded with fine ripe fruit. The tree was brought from France about seventeen years ago, and (with the exception of a very little blossom one year) has never before shown any indication of fruiting. *B. G. Jenkins, 43, Chatsworth Road, West Dulwich, S.E.*

WASPS.—I notice in the *St. James's Gazette* of July 31 a letter headed "Plague of Wasps," stating that the coast between Hythe and Dungeness has become infested with wasps, and that at Dymchurch two sheep were stung in the throat and killed. Huntingdonshire and Cambridgeshire appear also to be specially troubled with these pests, and to such an extent, that the agricultural labourers have threatened to strike work from the danger of ploughing through the nests. As many as ten nests have been found in one field. Gilbert White (see his letter, "*Z. X. W.*") wrote that the great pests of a garden are wasps, which destroy all the finer fruits just as they are coming into perfection. "In 1781," he writes, "we had none, in 1783 there were myriads, which would have devoured all the produce of my garden had not we set the boy to take the nests, and caught thousands with Hazel twigs tipped with bird-lime. We have since employed the boy to take and destroy the large breeding wasps in the spring; such expedients have a great effect upon these marauders, and will keep them under." I suppose in these days it would be difficult to find boys able to find queen wasps in March, their time being absorbed in schoolwork. Only last night, July 30, an intimate friend of mine, who was sleeping at his father's house in the country, suddenly awoke in great pain, and with much swelling of the lower lip. The servant discovered in the morning a large wasp in the bed (the queen perhaps). I saw my friend in London to-day, the swelling reduced, but still there, and happily, he goes to Switzerland this week, when I hope all further trouble will be removed. Whilst at my favourite Selborne recently, I heard that turpentine was a good way of killing wasps. Their nests were unusually numerous this season. I remember in my boyhood tying bottles to Plum trees; bottles with wide necks, used for

preserving fruit whole. I half filled them with beer sweetened with sugar. Myriads of wasps were thus destroyed. One thing is certain: if their nests are not now invaded Plums and Pears will be reduced this and next month to a minimum. Until I had read Gilbert White's letter, I never before heard that bird lime had been used for wasp destruction. This exceptionally hot summer may have caused this great influx of wasps; still heat is not the only factor, for White distinctly wrote that in the summer of 1781, when the heat was intense, there were no wasps; but in the summer of 1783, when the heat was also excessive, there were myriads. *John Colebrook.*

ROOT-PRUNING FRUIT-TREES.—Is it strictly correct to state, as on p. 102 of *Gardeners' Chronicle* (article signed A. D.), "it is well known that free roots means free growth, and where the soil is deep and good, free growth means unbounded wood-production, and little fruit?" I think this is a statement it is necessary to accept with "great deductions." That this may be quite true of some sorts of Apples, Pears, and Plums, I am willing to admit, but it is so sweeping in its assertion, that my own experience forbids me to accept it without qualification. I have seen gardens in which the soil is of a deep rich loam, such as that which prevails in many orchards in Kent, Middlesex, and other fruit-producing counties, and in private gardens also, where trees make a very free growth, where but little, if any, root-pruning is done, and yet where plentiful crops of fine fruit are produced. I have in my own garden several large fruit trees, that, growing in a deep bed of fertile loam, make a free growth every year; the man who does my pruning, spurs these trees back every year quite close, and never root-prunes, and yet I get good crops of fruit. It may be bad culture, but the fact of fruitfulness remains. It is because I think the statement too sweeping that I venture to call attention to it. I have seen a good many starved fruit trees this season, whose roots were near the surface, and for want of moisture are valueless for the season. It is not always easy to mulch and water. It can be done on a small scale, and not on a large one, and it is more than probable had the roots been deeper in the soil, the results would be different. It is easy to dogmatise about fruit-culture, but conditions have to be considered—such as varieties, locality, climate, &c., and these are points of first importance. *Caution.*

—Mr. Crowley opened up a wide subject by his letter in the *Gardeners' Chronicle* of July 1. It is important to observe that this theory of root-pruning is founded to a certain extent on the true principle of fruit culture. As a tree finds nutriment by its roots, if the roots be cut off at 2 feet from the stem, the means of living are in great measure destroyed. In exposed situations the roots of a tree are more numerous, as well as stronger than in sheltered positions. It is supposed by some persons that the roots of trees, if of considerable age, have exhausted all the nutriment in the soil about them, and need to search for it at greater distances, and they will, indeed, travel to a distance equal to the height of the tree; and we are aware that roots and branches are co-extensive with each other, or rather that the spread of the roots exceeds that of the branches. My experience teaches me that so long as the tap-root or large descending roots are prevented from penetrating deeply into the soil, no root-pruning is required. These descending roots may be cut off, or laid horizontally. The mutilating method now practised of lifting trees when about six or seven years old, and in each alternate year afterwards cutting all the leading roots away at short distances from the stem, is a barbarous one, and I am not surprised at flowers and fruit falling off trees so injured. The nurseryman endeavours to send well-rooted trees out, but the planter, after a few seasons' growth, starts lifting and mutilating them, and so it goes on; and if you ask if the trees are going on satisfactorily, you are told that they are making too much growth. I fear that because some of the old school practise severe root-pruning, the younger men will follow suit, the same as in summer-pruning. *T. Goddard Hunt.*

—In reference to "*E. M.*" further contribution to the above subject (p. 69), I may assure him that I had no intention whatever to misquote what he said (see last vol. of the *Gardeners' Chronicle*, p. 666) in reference to the method of procedure followed by certain "unnamed" fruit cultivators, wherein "*E. M.*" writes:—"I will go further, and say that in some cases these same growths, which ulti-

mately form spurs, never give aught but wood-buds (adding), I know some fruit-tree cultivators who cut away many of these growths clean to the base every year in June or July, instead of pinching in the orthodox manner, &c." Had "*E. M.*" bracketed "current year's shoots" immediately after "these growths" (as he points out at p. 69 I ought to have done instead of spurs), it would have made his meaning perfectly clear, and have prevented my having unwittingly mistaken "these growths" for spurs. "*E. M.*" has somewhat evaded my question as regards the summer management of wall trees—Peaches, Apricots, Plums, and Pears. The dis-budding of Peach trees is done in spring, and the proper number of young growths necessary for the well-being of the individual trees, and for yielding fruit the following year, are tied to the wires in due time. Well, these self-same young shoots produce, as all practical fruit-growers know (although "*E. M.*" seems to have forgotten the fact), an abundance of lateral and foreright growths during the summer months. The question which I wished and wish still "*E. M.*" to answer is, Would he allow these summer growths to remain untouched until the autumn? Also, what would he do with similar growths proceeding from trees of the Apricot, Pear, Plum, Cherry, and Apple, growing against walls or espalier-trained? The fact of "*E. M.*" not having any Apricots or espalier-trained trees in his garden is, in my opinion, no excuse for his evading the question regarding their summer management. "*E. M.*" enquires "if I would pinch the shoots of the trees mentioned to induce the formation of fruit-buds?" My answer is, that I pinch them for the combined reasons set forth in the *Gardeners' Chronicle* for May 20, p. 606 (last volume), namely, to prevent a waste of force in the trees, to promote a balance of growth, and to induce the formation of fruit-buds; the free admission of direct sunlight to the trees necessarily attending the process of summer-pinching favouring alike a fruitful growth and the development and ripening of the fruit. *W. L. C.*

—I for one have been interested in what has appeared in the *Gardeners' Chronicle* on summer-pinching, as against the extension system, and seeing now what an important subject fruit cultivation is becoming, it is very necessary for those who have experience of the management of fruit trees to give their opinion to the world, so that the best methods of cultivating fruit trees should become better known. I have read Mr. Fish's articles on a variety of subjects for many years, and believe him to be, not only an excellent writer, but a thoroughly practical gardener, and one on whom you may rely for sound teaching; I must, however, differ from him on the subject of close-pinching and pruning. After years of experience in the management of fruit trees, I find that pinching and hard-pruning are detrimental to the productiveness of the trees, and I think "*E. M.*" is right about extension. My belief is that for every gallon of Apples or Pears grown on the close-pruning and pinching methods, it is possible to produce a bushel by the extension method. Only a few days ago I was looking over about 20 acres of fruit trees, principally Apples and Pears, grown for market, which were planted from six to nine years ago, which afforded a fine case for extension methods, the trees being pictures of health and productiveness, being cropped with fruits from the ground to the top, and many of the trees 12 to 15 feet in height. This bit of orchard management was a capital object-lesson, and sufficient to convince the most prejudiced close-pincher. *C. P.*

MASDEVALLIA FRAGRANS AND M. ARISTATA.

—The recently issued Part (No. IV.) of the *Monograph of the Genus Masdevallia*, by Lord Lothian and Miss Woolward, contains drawings and descriptions of a new species, *M. fragrans*. The plant is a rather striking one, with large broadish leaves, and the open cup-like flowers (yellow) of the coriacea type. The delicate fragrance of the flowers, an uncommon characteristic for a *Masdevallia*, suggested the specific name. Its habitat is unknown. It was bought from Mr. Bull in 1887 under the name of *M. elephanticeps*, the resemblance between the leaves of the two species being very close, and it was not till it flowered in 1892 that the mistake was discovered. It is probable that the new species was imported along with specimens of *M. elephanticeps* which came from Ocaña in the province of Santander, Colombia. When in flower, the difference between the two plants is very marked; the shape and size of the massive flowers of *M. elephanticeps*, with their long

tails and the dark colouring of their lateral sepals, at once distinguishing it from *M. fragrans*, with its spreading yellow sub-equal sepals tapering into short fleshy tails. Another species of interest is *M. aristata*, Rodrig., unknown in this country either as living plants or dried specimens, but of which Señor Barbosa Rodriguez, Director of the Botanic Gardens at Rio de Janeiro, has supplied drawings, hitherto unpublished. The species was described in his *Genera et Species Orchidearum novarum*, and is allied to *M. infracta*, and also very closely approaches another Brazilian species, known from description only—*M. aurantiaca*. Señor Rodriguez discovered *M. aristata* in January, 1876, in the Province of

it differs in the valves of the capsule being opposite to the sepals, instead of alternate with them.

P. grandiflorum, the type form, occurs in China, Manchuria, Siberia, and Japan, and has also been called *P. sinense* and *P. autumnale*. It was figured in the *Botanical Magazine* so long ago as 1794, t. 252, and in the *Neerland's Plantentuin*, vol. 2, t. 1 (1866) as *P. autumnale*. The dwarf form known as *P. grandiflorum Mariesii* was introduced from Japan by Maries, and a coloured figure of it appeared in the *Garden* of March 14, 1885.

Messrs. Vertegans of Birmingham, who send us

Bunyard & Co. If any have contributed more than others to make Kent the fruit garden of England, we should think those persons are the present proprietor and his father. Such an area of land is devoted to the growth of fruit trees, and such very large numbers of all the best varieties are always in stock, that we think at scarcely another nursery in these islands can so many be found. There are other first-class establishments, familiar to everyone, which have specialities in which they excel all others; but the great special feature here is the great extent of well-conditioned stock, which ensures the execution of the largest order, so far as regards standard varieties.

The constant additions which have been made for many years past have been maintained, and, even now, Mr. Bunyard observed, as he walked through the various groups of young trees, that they must still go on increasing their acreage and the variety of the stock, if they are to be prepared to meet the constantly increasing demands with which they are favoured. All this is very satisfactory to us, and others who desire to see the growth of hardy fruits extended. In some cases, provident landlords are furnishing their farming tenants with trees of the newer varieties gratuitously, a circumstance which will tend as much as anything to the more general planting of fruits on farms and holdings. We have already said that the drought had passed, and in travelling through the lovely county of Kent it was surprising to observe how soon the fields were being clad with greenery, and everything looked so fresh that one was almost inclined to the idea that Kent must have suffered less severely than other parts that we had seen recently. But in the gardens and orchards, with more careful observation than is possible when travelling by railway, the considerable amount of injury that has occurred is only too plain. In Mr. Bunyard's nursery, where the effect has been minimised by good tillage, we notice that in the case of some of the recently-moved fruit-trees they had not recovered from the check, and in some instances a year will have been lost. Young Plums, that usually make shoots 6 to 7 feet in length, have made 4, and in some cases only 3 this season; but these are just as well or better for that, as the new wood will be thoroughly matured by the end of the season. Indeed, the injurious effects of so trying a season as that of 1893 are not actually so serious as we should expect; it is not to the weather, however, but to Mr. Bunyard's exertions, that this is due. With what personal interest and sympathy he cultivates his trees, is easily noticed by the visitor as he discovers how thorough and exact is the knowledge Mr. Bunyard has of every part of this extensive fruit colony. All the various details in the methods practised here are under his supervision and direction, each consignment leaving the establishment also being subjected to the same skilful supervision—as good a guarantee as is possible that the fruit trees are all true to name.

As the various "drifts" of 60,000 or more maiden Apples on the Crab or the Paradise, and the larger specimens of two and three years are passed, it is impossible not to notice the exceptionally fine condition they present. Singularly enough, the trees are very free from the ravages of maggot and allied pests; and spider is considerably fewer in numbers than has been general during the present year. Aphid, perhaps, has been the most troublesome insect; but the harm that they are capable of is not so lasting as that of some of the other pests. We can only attribute this immunity from blight, as we must also the splendid and healthy character of the entire stock, to the attention paid to their requirements, and the skill with which they are managed. Digging to loosen the soil between the rows, and the use of the horse-hoe and "Planet" cultivator between them during the summer months, prevents evaporation of moisture by promoting a friable condition of the surface; and in those few instances where this kind of treatment has not been possible, the difference in the growth affords a correct gauge of its advantages. One of the most important operations connected



FIG. 33.—*PLATYCODON GRANDIFLORUM*, VAR. *MARIESII*: HARDY HERBACEOUS PLANT;
FLOWERS RICH VIOLET-BLUE.

Minas Geraes, "where it grows upon mossy rocks, and sometimes upon trees, in the dark, damp recesses of the forests near Caldas." A. B. Rendle.

PLATYCODON GRANDIFLORUM, VAR. *MARIESII*.

We give an illustration of a plant lately exhibited by Messrs. Paul & Son at the Royal Horticultural Society, which attracted a good deal of attention from its dwarf habit and large deep violet-coloured flowers. The leaves are somewhat fleshy, dull green above, greyish green beneath. *P. grandiflorum* has received various names, but following Bentham and Hooker, the genus *Platycodon* is kept up as distinct from *Campanula* in its broadly cup-shaped flowers, the stamens dilated at the base, and its capsule opening at the top and not at the sides. From Wahlenbergia

specimens, say they have grown the plant for several years, and that it is quite hardy. "The bed in which the plants are growing is slightly raised, so that it is free from excessive moisture. In this situation the plants grow to a height of 12 to 18 inches. Although by no means a new plant, the Floral Committee acted wisely in certificating it as one of the best dwarf herbaceous plants."

NURSERY NOTES.

MESSRS. G. BUNYARD AND CO., MAIDSTONE.

It was nearly a fortnight after the long drought had given place to the first showers we have experienced this summer, that we went to Maidstone to see the extensive fruit nurseries of Messrs. Geo.

with the production of fruit trees, Mr. Bunyard rightly believes, is the grafting or budding. "For," said he, "as this is done carefully or not depends the length of life and the whole future of the tree." Consequently, this is one of the details over which his great experience is brought to bear.

It may be interesting to note that one variety of Apple to which this hot summer has been favourable is Lord Suffield; it has made splendid growth, free from canker, and the fruits on the young trees of one year old on the Paradise stock are many and large. A very large quantity of the variety Grenadier is in stock, as this is one of the Codlin class of Apples of which Mr. Bunyard thinks highly. Ecklinville, that large culinary variety, is present in very splendid condition, the "maidens" forming a perfect picture. Golden Spire exhausts our guide's superlative adjectives, so valued is it, and its wonderful cropping qualities are his justification. Then there is Lane's Prince Albert, fruiting very finely, but it is impossible to persuade the Prince to conform to conventional life; if let ramble a bit, fruit is produced freely enough. Gold Medal, said Mr. Bunyard, is one of the very best Codlins we have got, and we believe him. Then that extraordinary cropper, Peter the Great, or Cardinal, as it is sometimes called, comes under notice, and the character given it, is—early to ripen, good bearer, and a fine grower. A pretty Apple is Duchess of Oldenburgh, and it does well "anyhow." Tyler's Kernel, though not much known, is deserving of a trial in any collection.

In the trial-orchard are about 300 sorts; they are on the Paradise, and are kept dwarf, but they afford excellent fruits, and are tested before being propagated on an extensive scale. All the best sorts were seen here; and Washington, whose reputation for outside-work has not been very good, generally does well here. A large quantity of sorts specially suitable for market gardens, such as Yellow Ingestre, has to be kept, the demand for these being heavy.

What may be said to be another feature of the place is the large espalier, standard, and pyramidal fruit trees of several years old—in fact, as large as is usually necessary to furnish any vacant place.

Pears.—These are looked after with the same assiduous care as are the Apples, and present the same fine appearance. Beside the generally well-known varieties, there are many which Mr. Bunyard can recommend for more general planting. Madame Treve is one of these, an exceptionally good bearer, and succeeds on the Quince; its large, delicious fruits are ripe in September. Petite Marguerite is a fine American variety, also ready in September, but as yet little known here; Doyenné du Comice is a Pear not half enough known as a late sort; Duchesse de Bordeaux keeps well until February, is a good bearer, and of medium size, but there are few growers who possess it. Then we have to notice what an excellent crop is being borne by that early Pear, Rivers' Beacon; and Dr. Jules Guyot, said to be a capital Pear for marketing; in flavour much like Williams' Bon Chrétien, but it is a much better doer, and bears when the latter variety fails.

Stone Fruits.—Peaches are well cultivated as standards or wall trees, &c., and of any desired size. The wood of the Peach is especially well ripened in this district, and the trees are therefore suitable for planting in any other. They are carefully trained, and at the present time appear to be in fine condition. Of Plums and Damsons the same observations serve, for these as well as Cherries have the best attention paid to their culture; indeed, each is present in large numbers. "Plum Belle de Louvaine," says Mr. Bunyard, "has gone out of many collections, in spite of its being very worthy of retention." Belle Normand is given a very good character, and then we come upon two others, which require no further recommendation from us—these are Rivers' Prolific and Rivers' Czar, but we shall have to refrain from further notice of these after we have given a word to the Myrobalana Plum, which was very attractive; the trees had been grafted, and carried two kinds of fruit, the yellow and red, with which the trees were literally covered.

Orchard-house.—These houses were filled with trees in pots, of the Apple, Pear, Peach, and Nectarine. The aim in regard to these is to produce healthy trees of good form without unduly stimulating them with manures, as the less this is done, the better for the trees, for in regard to young trees of any description, excess of stimulation is necessarily injurious. The trees are not strictly pyramidal in shape, but are allowed to make some amount of free growth, although the shape is considered as far as is practicable. They may be seen in batches, one, two, and three years old mostly, but some are older. Hale's Early, and a few of the other early Peaches were carrying ripe fruits. Dagmar is a favourite here, and so is the Nectarine Peach, as a late bearer; Gladstone is regarded also as one of the best amongst the late varieties; a good doer, either outside or in the Peach-house. Most of the varieties now popular with growers were present, in addition to those mentioned, and of Pears and Apples too. One house was full of Fig trees in pots, and Mr. Bunyard said there was a good demand for these, but we venture to think it is nothing like what it ought to be, seeing the great fruitfulness of the Fig when properly managed, and the lusciousness of its fruits. Unfortunately, the cultivation of the Fig is not so generally understood as that of other fruits. We often see the trees planted in some badly-lighted position—the back wall of a vinery, or other such ludicrous, unsuitable place. In a small Apricot-house, Mr. Bunyard thinks he has found the secret of their culture to be in keeping them very dry during the winter. The trees are looking fairly well, and are carrying ripe fruits.

Strawberries, &c.—These are grown in immense numbers, and in variety; and the Raspberries grown include a stock of the Superlative, a capital variety, pretty well known to growers by this time; a wonderful cropper, and robust grower; its large fruit is all that could be wished.

Shrubs, Roses, and other general nursery stock are kept in large quantities at these Maidstone nurseries, where most kinds and varieties of these plants can be supplied; and the firm's rule of thoroughness extends to these as well as fruit trees. A large local florist's trade is done, and many houses are devoted to supplying the demands upon this part of the business. The total area now under these several stocks in the three nurseries is 125 acres, and there are about fifty houses of fruit trees and general florist's plants.

SCOTLAND.

EAST OF SCOTLAND UNION OF NATURALISTS' SOCIETIES.

THIS week (July 29) saw the close of the tenth annual conference of the East of Scotland Union of Naturalists' Societies at Kirkcaldy. Among those present on the opening day were the president, Professor d'Arcy W. Thompson; the president-elect, Mr. James Shepherd; the hon. general secretary and treasurer, Mr. William D. Lang, C.E.; and the hon. local secretary, Mr. T. P. Strachan. The societies comprised in the union were well represented at the council and general meetings by delegates.

The general meeting took place immediately after that of the council in the large hall, at which there was a large attendance, including a goodly number of ladies. The president-elect, Mr. James Shepherd, called upon Mr. Lang to read the minutes of last conference held in Dundee. This over, the meeting fixed the next annual conference to be held in Dundee. Mr. Shepherd, in an able address, alluded in feeling terms to the White Centenary, held at Selbourne, Hants, on the 26th of June last. He then dwelt at length on the social advantages to be gained from the study of Nature as a healthy recreation, and his remarks were listened to with great attention. During the Conference papers were read by Dr. David Lonsdale, on "The Fife Coal Field"; "On the Antiquities of Falkland," by Mr. John Kinross, A.R.S.A., and Major Wood—read by the latter; "The Beatitudes of Breadalbane," by Dr.

Buchanan White—read by Mr. Strachan, giving very useful information; "A Note upon Photography as an Aid to Scientific Work," by Mr. Storrar; "On Plants of the Kirkcaldy District," by Mr. W. S. Blackstock, F.R.S.; "A Note on the Loch Leven Fern," by Mr. Peter Ewing; "A Note on *Tridentalis europæa*," by Mr. W. Wilson, &c. A banquet was given in the George Hotel on one of the evenings, at which nearly one hundred persons were present; and various excursions were made during the week, and instructive information was imparted and obtained.

GLASGOW AND WEST OF SCOTLAND PANSY SOCIETY.

On Wednesday, the first annual exhibition competition under the auspices of the Glasgow and West of Scotland Pansy Society, took place in the Trades' Hall, Glasgow. For a first exhibition, the display was excellent, and compared very favourably with any show yet seen in the West of Scotland. The entries numbered 455, and comprised some very fine specimens of Violas, Pansies, Roses, and herbaceous plants. Messrs. Dobbie & Co., of Rothesay, had about 100 exhibits, the Sweet Peas and Pansies in this admirable collection being quite a feature. Mr. G. Stuart, Rothesay, had some really good plants, which attracted considerable attention. Mr. Andrew Irvine, Tigh-na-bruaich, had a splendid collection of blooms of show Pansies, for which he received the 1st prize, a Silver Medal. Messrs. W. Paul & Co., Bridge-of-Weir, obtained a 1st prize for a very pretty collection of Violas. Messrs. D. Montgomery, Mount Vernon; Halley Bros., Perth; and Wm. George (gr. to Mrs. Macqueen, Gateside), Drymen, were also amongst the prominent exhibitors.

The following is a list of the principal prize-takers:—

Pansies and Violas (confined to nurserymen).—Twenty-four blooms of show Pansies, distinct varieties: 1st, a Silver Medal, Andrew Irvine, Tigh-na-bruaich; 2nd, John Smellie, Bushby.

Twenty-four blooms fancy Pansies, distinct: 1st, Silver Medal, Andrew Irvine; 2nd, J. Smellie.

Twenty-four bunches Violas, six blooms in each, distinct varieties: 1st, Wm. Paul & Co., Bridge-of-Weir; 2nd, J. Smellie.

Open to Gardeners only.—Twelve blooms show Pansies, distinct: 1st, G. Stuart, Rothesay; 2nd, John Harper, Dumfries. Fancy Pansies: 1st, R. Stuart. Bunches Violas: 1st, A. Gilchrist.

Confined to Amateurs.—Twelve blooms show Pansies: 1st, Andrew Frater, Linnithgow; 2nd, A. Brown, Lenzie. Six blooms show Pansies, distinct: 1st, Walter Buchanan, Torrance of Campsie; 2nd, A. Frater. Twelve blooms fancy Pansies: 1st, Archibald Watson, Busby; 2nd, Alex. Bruce, Lenzie. Bunches Violas: 1st, James Paul.

Open to Gardeners and Amateurs only.—Fancy Pansies: 1st, A. Frater. Blooms show Pansies: 1st, W. Buchanan. Eighteen blooms, fancy Pansies: 1st, A. Frater. Twelve blooms, fancy Pansies: 1st, A. Frater. Blooms, Show Pansies: 1st, J. Stuart. Blooms, Seedling Pansies: 1st, W. Buchanan.

Pinks, open to all.—Blooms, Pinks: 1st, W. Campbell.

Confined to Gardeners and Amateurs.—Twelve blooms Pinks: 1st, A. Gilchrist.

The competition in seedling blooms of all kinds of Pansies and in herbaceous plants was extensive and meritorious.

TWO GREAT SHOWS AT EDINBURGH.

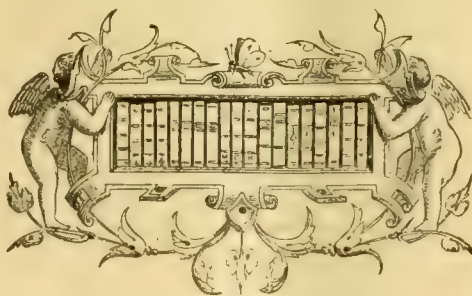
The Highland Agricultural Society opened its exhibition on July 25, at Comley Bank, Edinburgh, and it was agreed on all hands that in point of excellence in every department the show was one of the best the Society has held. In the early part of the day the weather was dull and showery, but as time went on, the sun shone out with great brilliance. Attractive as all the classes were, the exhibition was much enhanced by the horticultural products, as machines, seeds, grass (in miniature lawns), trees and shrubs, and glass erections. Messrs. Webb, of Wordsley, Stourbridge, were strongly represented by their choicest roots, grass (green), and dried

grasses and cereals. Close to the ornamental stand of this firm was that of Messrs. Little & Ballantyne, Carlyle, with a fine display of horticultural and agricultural necessities. Messrs. Dickson, Brown, & Tait, Manchester, had fine exhibits; their early Potatoes created much interest; Sharpe's Victor was riper than any of the other of the fine varieties tabled. They were large, well-formed, and appeared to be of fine quality. This variety is one of the best for forcing either in pots or otherwise (I dug good examples during the first week of June this season). Jeannie Deans, Sutton's Prizetaker (a red kidney), and Ringleader Kidney, among others were in fine form. Their Turnips, grasses, and seeds, were also well represented. The large Scottish seed firms were not well represented generally beyond their commercial interests. But some of the local nurserymen sent their quota (as well as to do honour to another great show held in Cowley Park, the Grand National Carnival and Floral Fête). Messrs. James Dickson & Sons, Edinburgh, and Messrs. Methven & Sons, of Edinburgh, showed choice Coniferae well among the buildings of the agricultural exhibition. The plants being either in pots or lifted with good balls of roots, stood the treatment to which they were subjected remarkably well. They were dwarf, compact, and with striking foliage—*Retinosporas* and *Cupressus* in their varieties were strongly represented.

Messrs. J. Dickson & Sons had a charming arrangement in the shed set apart for dairy produce. Their choicest grasses were exhibited on a green bank raised in the centre, and sloping to each side, and running the whole length of the building. The green sward was dotted with single plants of *Aspidistras*, *Aërides*, *Dracænas*, *Palms*, *Ficus elastica*, and other graceful plants which were much admired. Turning outward from the agricultural exhibition, we entered the "Carnival" grounds, which were of the gayest description (as fancy fairs generally are). The object of holding such an exhibition was to give tangible effect to a philanthropic scheme, viz., the Edinburgh Institution for Incurables, and the Royal Maternity and Simpson Memorial Hospital. The excellent taste evinced in the laying out of the grounds was particularly striking, and the clever placing of the trees in sweeping avenues, in order not to impede the traffic from the crowds of visitors, is worthy of notice. The arrangements for entertainments being specially kept in view, necessitated careful planning of the ornamental grounds. The attractions of the amusements and articles on sale, in tents of many sizes and forms, drew together immense crowds, but horticultural objects were superior to all other attractions. They were in charge of the Marchioness of Tweeddale and her ladyship's brilliant army of lady assistants, who handled the flowers and pot plants deftly, and gracefully offered them to all and sundry who had cash to spare.

We noticed large collections of Carnations and Picotees, many of them named; prominent among these were Mrs. Muir, Germania, James Brown, Mr. Jack, Mrs. L. Jamieson, Scarlet Gem, Marnie Murray, and Miss Peacock.

Entering a large tent, we found a collection of Conifers in fine health and of very striking appearance, arranged for effect, well contrasted with the bunches of cut flowers arranged for sale. The Conifers came from Messrs. Smith, of Darley Dale, Derbyshire. Long boxfuls of cut Roses were exhibited from Messrs. Smith, of Stranraer Nurseries, Mr. Cutbush, Rothesay, had a long table loaded with choice herbaceous plants in bunches. *Phloxes*, *Gladioli*, *Liliums* of species, were placed among the cut flowers prominently for effect. Among the plants a group of choice Coniferae, and plants with striking foliage was set up by Messrs. Frazer, Comley Bank Nurseries, which had a telling effect. Mr. Phillips, Granton Road Nurseries, had a beautiful group of *Arancaria* excelsa, with fine-foliaged plants for a border to it. Mr. Campbell, High Blantyre Nurseries, had a telling display of Carnations, many of them seedlings growing in pots. Large *Camellias* came from Messrs. Laird & Sons, and afforded a background to the long table of flowers. *M. T.*



NOTICES OF BOOKS.

HANDBOOK OF THE FLORA OF NEW SOUTH WALES, ETC., by Charles Moore, F.L.S., assisted by Ernst Betche. Sydney: 582 pp.

THE veteran Director of the Botanic Garden, Sydney, to whom horticulture and botany owe already so much, has added to the obligation by the publication of this useful Handbook. It is on the plan of the colonial floras, and specially of the *Flora Australiensis*, that remarkable product of the genius and zeal of Bentham and Mueller. A preface to the present work summarises the history of botanical research in this part of Australia, as told by Sir Joseph Hooker. When, however, in 1847 Mr. Charles Moore, the author of the present book and the brother of the renowned David Moore, of Glasnevin, was appointed Colonial Botanist and Director of the Botanic Garden, he found not a vestige of the herbaria formed by his predecessors. Those who have visited the garden are warm in their expression of its condition and beauty, whilst botanists are able to appreciate the yet more enduring work done by Mr. Moore. They will doubtless concur that he has done no more serviceable work than this Handbook. The author acknowledges his indebtedness to Baron Sir Ferdinand Mueller, whose arrangement of the orders is followed, as being a nearer approach to the natural disposition than the Candollean sequence generally adopted in the other colonial floras. It is rather startling to find *Piperaceæ* placed next to *Nymphæaceæ*, but botanists will remember that the seeds of the two orders present remarkable characters in common, a point by the way not sufficiently brought out in the account of the Peppers (*Piperaceæ*) in the present volume. So long as the arrangement is understood, it is, for practical purposes, of little moment which of the so-called natural arrangements is followed. Especially is this the case in view of the fact that the study of comparative embryology which must occupy the attention of the philosophic botanists of the future, will undoubtedly result in a great shifting and rearrangement. A list of authors, a full glossary or explanation of technical terms, an explanation of the meaning of species-names, an appendix containing a list of the plants of Lord Howe's Island, of Norfolk Island, another comprising a list of introduced weeds, and a full index, are all signs of the pains that have been taken to render the book useful to students. The intrinsic value of such a book can only be tested in actual use as circumstances arise, but the plan of the book, and the great pains evidently taken in its elaboration, afford a good guarantee (even apart from the author's long experience and well justified reputation), that the reader will find what he wants in the readiest manner and in the most correct form. The account of the Orchids was revised by the late Mr. Fitzgerald. We have little doubt that a re-issue of so useful a work will sooner or later be called for, in which case a slight sketch of the physical geography and climatal features of the colony, and a map, would be welcome additions to European students.

MECHANICAL WORK IN GARDEN AND GREENHOUSE. Edited by Francis Chilton Young (Ward, Lock, & Bowden).

This is an excellent little treatise for the amateur gardener, or for the young practitioner. The first part is devoted to geometry for gardeners, a subject

but little studied by them, but most useful. We have never seen geometry more clearly and usefully treated than in this unpretending little book.

The chapter on sundials and dialling contributed by Mr. Arthur Yorke, is interesting, but in these days of Waterbury watches not so practically useful as in former times, and Mr. Yorke is careful to remind us that the sun is not so good a time-keeper as a watch or a clock, for reasons well known to the astronomer. The last section of the book is devoted to the construction of greenhouses and other garden edifices, and will be found serviceable by amateurs and those who aspire to be their own builders.

A HANDBOOK TO THE FLORA OF CEYLON, &c. By Henry Trimen, M.B., F.R.S. With an Atlas of Plates. Part I. *Ranunculaceæ—Anacardiaceæ*. 8vo. Pp. 327. (Dulau & Co.)

Botanists have been long waiting for a flora of Ceylon. Gardner, and especially Thwaites, laid the foundations of such a work, whilst the successive volumes of the *Flora of British India* have comprised Cingalese plants, as well as those from other parts of our great Indian dependency. A separate Flora of Ceylon is, however, a great desideratum, especially to residents in the island, and this desideratum Dr. Trimen is specially well qualified to supply. In plan this volume follows the lines of the *Flora of British India*, the descriptions of plants being in English. No name earlier than 1753, when Linnaeus first definitely published his binominal nomenclature, is accepted. The adopted names of species are followed by a reference to the author who first described them, and the date of publication. Synonyms are duly recorded, and references given to the literature of the subject, and to the local and general distribution of the plants. The coloured plates comprise a selection from several thousand figures, made under the direction of successive Directors of the Botanic Garden by three members of one Singhalese family—De Alwis. A sketch of the climatic regions of Ceylon is given, and the island shown to be divided into three main regions, distinguished by varying amounts of rain and temperature, viz., the dry low country region, the moist low country region, and the montane or hill country. Four-fifths of the island belong to the first region, where the vegetation is mainly that of peninsular India. The moist low country region, though occupying less than one-fifth of the area, is the best known, and the most interesting. Dr. Trimen assigns to it a limit in altitude of 3000 feet, all above that being included in the montane region. This district has a rainfall of from 75 to 200 inches in the year, chiefly in May and June. A short dry period occurs in the first quarter of the year, and again in August and September. This wet tropical region is the home of the bulk of the endemic species, and has a strong Malayan affinity. The montane region above 3000 feet, up to 8296 feet on Pedurutalagala, is wholly in the moist region, and south-west of the centre of the island. The descriptions seem to be particularly clear, and the typographical arrangements excellent, so that the work of the student is greatly facilitated.

No doubt when the work is completed, an index and a map will be provided. The volume is so indispensable to all those concerned with the Flora of Ceylon that we hope succeeding volumes will be speedily issued.

PLANT-ATLAS TO MY WATER CURE, ETC., by Sebastian Kaepp. (London. H. Grevel & Co. 33, King Street, Covent Garden).

This little book illustrates a very curious phenomenon. As evolution and progress go on in one direction, so do degeneration and retrogression go on in the opposite:

"Evolution ever climbing after some ideal good, And Reversion ever dragging Evolution in the mud."

We much prefer the spirit of the earlier to that of the later Locksley Hall, and the buoyant hope of the one is pleasanter and at least as true as the querulous whine of "sixty years after." Still, it is

curious to observe that, at a time when the reproach that doctors pour physic of which they know little into a body of which they know less, is daily becoming less and less justified—that at such a time we have a book which plunges us at once into the dogmatic quackery of the middle ages. A perusal of the details relating to the “use” of the several plants figured in this little book reminds us of the old herbals. This is good for that complaint, and this other is serviceable for that, but there is no attempt at explanation of the reason why, no setting forth of the chemical constitution, or the mode of action which render this herb serviceable in this or that disorder. A headache, for instance, may arise from one of a dozen different causes, each requiring separate treatment, but such considerations are overlooked in this volume. This is not of so much consequence to the patient, who must exercise faith, but the conscientious doctor, who has to exercise reason and judgment, is left entirely without other guidance than the unsubstantiated assertion of the author. We know that there is much virtue in fresh air, pure water, proper diet, and wholesome life, such as we believe Pastor Kneipp, in common with the faculty at large, prescribes, and we are not at all inclined to doubt that there is much efficacy in “herbs, and other country messes,” under certain circumstances, but from an author we require something more than mere assertion. The plates are photographic representations of medicinal plants. We do not share the opinion of the publishers that photography has been made use of for botanical purposes for the first time in this book (dated 1891!), nor are we convinced, that for such purposes as are intended to be served by this book, coloured photographs are at all suitable.

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

JULY 21.—A special meeting of the General and Floral Committees took place at the Royal Aquarium on the above date, Mr. R. Ballantine in the chair, there being a large attendance. Some very interesting correspondence was read from Wellington, New Zealand, giving an account of the arrival there of the frozen flowers sent out by the National Chrysanthemum Society last winter, namely, a dozen fine incurved, from Mr. Mease, The Gardens, Downside, Leatherhead, with which he won the Cup at Kingston; and a dozen of the fine Japanese varieties with which Mr. W. H. Fowler, Mayor of Taunton, won the Holmes Memorial Challenge Cup at the Aquarium in November last. The flowers reached Wellington a few days after the annual exhibition of Chrysanthemums was held; but a special show took place at which the frozen blooms were exhibited, and a large number of persons paid for admission. The English-grown incurved flowers were much admired on account of their perfect form; no flowers were ever before exhibited in the city so perfect. The Japanese blooms were also much admired, and finer examples of W. W. Coles, Mrs. C. H. Wheeler, and Avalanche had never been seen in Wellington. Mrs. Fogg and Lord Brooke being new to the Antipodean growers, were much admired. With one or two exceptions, the frozen flowers retained their perfect colours; but in the case of Edwin Molyneux and Mrs. C. H. Wheeler, all the yellow or gold had gone quite out of the petals, the only tint of colour shown being a dull-red, and the locally-grown blooms of these varieties went in just the same character, the season having been a very moist one. Such of the frozen blooms as Stanstead White, Mrs. Fogg, Lord Brooke, Sarah Owen, Etoile de Lyon, and Mons. Bernard were just as perfect in colour as when cut. After being exhibited at Wellington, the frozen blooms were sent on to Christchurch, and so much interest was excited over them in the colonies that applications were received from several societies for blooms to be sent for exhibition. The English blooms were sent to Wellington frozen in two large blocks of ice, the cooling having been accomplished with so much skill and care, that only in the case of one bloom did air-bubbles interrupt the view through the transparent ice.

The Chrysanthemum season at the Colonies proved a disastrous one; the weather was rainy and

misty nearly the whole time the blooms were out, so that they damped in a most alarming manner. One portion of the business of the committee was to inspect some frozen Japanese Chrysanthemums—four in number—which were grown by Mr. R. Forsyth, Sydney, a leading Australian grower. The blooms were very fine, each one having been separately frozen in a block of ice; the varieties were not named, but they appeared to be established sorts. The Silver Medal of the Society was awarded to Mr. Forsyth for his interesting exhibits. Twenty new members were elected, including two Fellows, and the proceedings closed with a hearty vote of thanks to the chairman.

ACTON HORTICULTURAL.

JULY 26.—By permission of A. Hubbard, Esq., the twenty-sixth annual exhibition took place on the above date, in the grounds of Derwentwater House. The large gardens in the district which existed during the early years of the Society have given way to the all-devouring builder, affecting the competition in particular classes; nevertheless, a fairly good display was made on the present occasion. For a group of stove or greenhouse plants, arranged for effect, Mr. G. Benham, gr. to R. O. Davies, Esq., secured 1st honours for a pretty arrangement; 2nd, Mr. T. Butcher, gr. to Mrs. Toynbee; the latter exhibitor taking the 1st place in the classes for four Fuchsias and two Fuchsias—good examples. In the specimen foliage plant class, Mr. Butcher likewise secured the premier position for a fine *Latania borbonica*. Mr. Polley, gr. to A. Hubbard, Esq., was the most successful exhibitor of Ferns, whilst bouquets were successfully shown by Mr. G. Sizmur, gr. to W. C. Smith, Esq. In the ladies' classes for floral decorations, the most successful exhibitors were Mrs. Green, Mrs. Hunt, Miss Edith Hunt, and Mrs. Roberts. Black and white Grapes were well shown by Messrs. Butcher, Chandler, Polley, and Wilks. The cottagers' display was extremely good, considering the season.

A few non-competitive exhibits are worthy of note, as a fine group of flowering and foliage plants, very effectively arranged, and contributed by Mr. G. Reynolds, gr. to the Messrs. Rothchild, Gunnersbury Park; a similar group from Mr. Cooper, gr. to E. M. Nelson, Esq., Hanger Hill House; some fine cut Roses from Mr. Will. Tayler, Osborne Nursery, Hampton; and a good collection of cut flowers from Mr. Denison, gr. to T. A. Gledstanes, Esq., Manor House.

TREES AND SHRUBS.

EUCRYPHIA PINNATIFOLIA.

To regular visitors at the Royal Horticultural Society's meetings in the Drill Hall, Westminster, this hardy shrub will now be well known, flowering branches having on several occasions been exhibited there by Messrs. Veitch. That it is hardy (at least, near London) is proved by its having been grown in the open at Coombe Wood for many years; also at Kew, where it is perhaps less favoured in regard to shelter. Several plants in a small bed near the Cactus-house there are at present in flower. They are 3 to 4 feet high, the leaves being opposite, pinnate (consisting of either three or five leaflets), toothed at the margin, and of a dark glossy green. The flower is about 3 inches in diameter, the petals being four in number, of cuneate outline, and pure white. A prominent feature of the flower is the cluster of numerous stamens in the centre, reminding one greatly of a *Hypericum*. For gardens in the South of England, this plant may be strongly recommended, not only for its beauty, but also as one quite distinct from anything else in bloom at this time (see *Gardeners' Chronicle*, September 11, 1880, p. 337, with figure).

The position of the genus *Eucryphia* appears to be doubtful, different authors having placed it under *Hypericaceæ*, *Rosaceæ*, and *Saxifragaceæ*. Four species are known to belong to it, two hailing from Tasmania, and two (including *E. pinnatifolia*) from Chili. Like *Fuchsia*, *Veronica*, *Libertia*, and other lesser-known genera, it illustrates the remarkable affinity existing between the flora of Chili and that of New Zealand and Tasmania, although the immense Southern Pacific rolls between. *W. J. E.*

A GOOD HOT-WEATHER SHRUB.

Variegated shrubs, as a rule, have had a poor time this year. The sun quickly burns the foliage if much variegated, leaving it spotty and damaged. But when in Mr. Anthony Waterer's nursery at Knap Hill recently, we noticed that *Cornus Spathi*, a very handsome variegated shrub, had stood the sun well—in fact, was untouched. This is important, and makes this form of greater value. *V.*

THE ORANGE CULTURE IN FLORIDA.

A VERY interesting communication on Orange-tree blight and the cultivation of Oranges in Florida has recently been made from New Orleans to the Foreign Office. “Many persons,” it is said, “who have hitherto taken pride in their Orange trees have been grieved to see them sicken and gradually die without apparent cause. Close examination will disclose the fact that the bodies of the tree, their branches, and even many of the leaves are covered with a brownish substance, which might be mistaken for dust; attempt to brush it off, and it will be found to adhere closely, in the form of minute scales. When hatched, the young insects move about for a while, then attach themselves to the tree, and form the scale over the bodies, and literally suck the life from the tree, attacking the lower branches first. Twice a year (spring and fall) they send forth broods of young, when the old insect dies, and at such times the scale is found dry, loose, and easily washes off. Then the young insect can be seen by good eyes, but an ordinary microscope will show scores, if not hundreds, of the young to each square inch, actively running about. While the insect, when encased under the scale, is hard to kill by any safe application, when young and exposed they may be easily destroyed by the following simple emulsion, which was first recommended by Professor Riley, the Government entomologist.

“The remedy is: one bar of soap, dissolved in 1 gallon of boiling water, to which add while yet hot, 2 gallons of coal-oil. Immediately churn by violent agitation in a demijohn; or, better still, by a hand force-pump, in an open vessel, and in a few minutes it will become thoroughly mixed, and assume a creamy consistency. Test it on a pane of glass, and if it adheres without being oily, it is ready for use as soon as cold, but before applying to the tree it should be diluted with nine parts of water to one part of the emulsion. After thoroughly shaking, it may be applied with a brush to every part of the tree which can be reached, but a better plan is to attach a spraying-nozzle to the force-pump (often used in gardens), and thoroughly spray body, branches, and leaves. The young insects are now moving about, and one application will kill most of them. However, as a matter of precaution, the trees should be sprayed with this emulsion two or three times, a few days apart.”

Referring to Orange culture in Florida, it is stated that the crop has reached such large proportions, that for some time past the growers have been looking elsewhere for new markets. Last year the State produced 3,500,000 boxes; this year's crop amounted to 3,000,000 boxes. It is said that the Florida Orange has driven, or is driving, the Spanish and Italian product out of the American market, and that besides this, a large trade has been commenced in Europe.

A short time ago, a shipment of Oranges, amounting to 9566 boxes, was made to Liverpool. The shipment was by a British steamer. The vessel had a stormy passage, which caused the fruit to reach England in a more or less damaged condition. The said fruit, however, sold at such good prices as to leave the shippers a handsome profit. The shippers of this cargo propose to put on a regular line of fruit-carriers from Florida to England, and ports on the Continent. It is thought that from 100,000 to 300,000 boxes will be shipped to Europe next year.

Obituary.

WILLIAM THOMSON.—We greatly regret having to record the death of Mr. William Thomson, Junior, of the Tweed Nurseries, Clovenfords, Galashiels, N.B., which took place at that place on Sunday morning, July 30, in the forty-fourth year of his age. The deceased was born at Wrotham Park, near Barnet, on December 20, 1849, and when his father removed to Dalkeith in 1855, he was sent to the High School of that town, but he finished his education at the High School of Edinburgh. The secretary of the National Bank of Scotland offered, unsolicited, to take him into that Bank, which he entered, and made rapid progress, but he got tired of a sedentary life at the end of seven years, and when his father, Mr. W. Thomson, started the business at Clovenfords, he went there in 1869, and devoted himself with enthusiasm to acquiring a knowledge of horticulture, especially the cultivation of the Vine and Orchids; and of the methods of culture and the qualities of the latter he had a very extensive knowledge. He was respected by all who knew him well as a kindly, genial, and upright man. He had great physical strength, and an imposing presence, and wherever he went he made friends, not having a spark of meanness in his composition. He took influenza about a year ago; his family were laid up, and got well, but he determined to brave it out, and the result was that he had a bad attack of muscular rheumatism; from this he recovered in May, but was seized with pleuro-pneumonia, to which he succumbed. The funeral took place on Wednesday, August 2, at Clovenfords churchyard. He leaves a widow, two sons, and two daughters to mourn their loss.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending July 29.	ACCUMULATED.				Mors (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 1, 1893.	Below 42°, difference from Mean since January 1, 1893.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.				
0	0 aver	94	0	+ 445	57	2 +	125	22.0	26	25
1	0 aver	104	0	+ 273	21	3 —	103	13.5	30	32
2	1 —	111	0	+ 289	62	5 —	88	11.0	35	36
3	1 —	129	0	+ 379	37	2 —	87	10.1	40	44
4	0 aver	127	0	+ 502	47	3 —	87	10.8	30	40
5	0 aver	137	0	+ 432	43	0 aver	82	11.1	38	45
6	1 —	102	0	+ 399	63	2 —	102	18.9	25	36
7	0 aver	125	0	+ 525	91	3 —	91	13.7	26	37
8	1 +	130	0	+ 564	70	1 —	85	16.4	43	48
9	1 +	119	0	+ 447	104	3 —	109	16.1	31	31
10	2 +	134	0	+ 487	100	5 —	97	15.7	32	35
*	0 aver	140	0	+ 642	52	1 —	92	12.7	47	55

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 29, is furnished from the Meteorological Office:—

"The weather continued unsettled, with cloudy skies and somewhat frequent rain, in nearly all parts of the kingdom until Wednesday. On Thursday and Friday, however, the conditions were finer, and a fair amount of sunshine was experienced. Thunderstorms occurred in some parts of Scotland on Monday, and over the midland, eastern, and south-eastern parts of England on Wednesday.

"The temperature did not differ materially from the mean over Scotland and the greater part of England, but slightly exceeded it in Ireland, as well as in 'England, S.W.' The highest of the maxima were registered either on the 24th or 28th, and ranged from 76° in 'England, S.' and 'Ireland, N.,' to 70° in 'Scotland, W.' The lowest of the minima were recorded, as a rule, during the early morning either of the 23rd or 28th. They varied from 51° in the 'Channel Islands,' and 47° in 'Ireland, S.,' to 41° in the north-east of Scotland and the north-east of England, and to 40° in the 'Midland Counties' and 'Scotland, W.'

"The rainfall exceeded the mean in 'Scotland, W.,' and just equalled it in 'England, S.,' in all other districts there was a deficit.

"The bright sunshine was less than the mean over the greater part of the kingdom, but slightly exceeded it in Ireland, the south-west of England, and the north of Scotland. The percentage of the possible duration ranged from 47 in the 'Channel Islands,' 43 in 'England, S.W.,' and 40 in 'England, E.,' to 26 in 'Scotland, N.' and 'England, N.W.,' and to 25 in 'Scotland, W.'"

MARKETS.

COVENT GARDEN, August 3.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

MARKET settling down to a quiet business, with heavy supplies; Plums, Apples, and Filberts being exceptionally heavy, with bad trade. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, per bush.	1 0-6 0	Oranges, per case	20 0-30 0
Cobs, per 100 lb.	...	Peaches, per doz.	1 0-8 0
Filberts, per 100	35 0-...	Pine-apples, St. Michael	...
Gooseberries, half-sieve	...	chael	2 0-5 0
Grapes, per lb.	0 9-1 6	Plums, p. half-sieve	1 6-2 6
Lemons, per case	12 0-20 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	1 0-...	Mushrooms, punnet	2 0-...
Beet, red, per dozen	2 0-3 0	Mustard and Cress, punnet	0 4-...
Carrots, per bunch	0 4-0 6	Parsley per bunch	0 3-0 6
Cauliflowers, each	0 3-0 6	Shallots, per lb.	0 6-...
Cucumbers, each	0 4-0 8	Tomatoes, per lb.	0 6-0 9
Endive, per dozen	2 0-3 0	Turnips, per bunch	0 4-0 6
Herbs, per bunch	0 9-1 0		
Lettuces, per doz.	1 6-2 0		

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	2 0-4 0	Orchids:—	
Aster, dozen bun.	3 0-6 0	Cattleya, 12 blms.	6 0-12 0
Aster (French), bun.	0 9-1 3	Odontoglossum crispum, 12 blms.	2 0-6 0
Bouvardia, per bun.	0 6-1 0	Pelargoniums, scarlet, p. 12 bun.	3 0-6 0
Calceolarias, doz.	4 0-6 0	— 12 sprays	0 6-0 9
Carnation, doz. bun.	4 0-9 0	Poppy, doz. bunches	1 6-4 0
— dozen blooms	1 0-3 0	Primula, dble, p. bun.	0 6-1 0
Cornflower, 12 bun.	1 0-3 0	Pyrethrum, 12 bun.	2 0-4 0
Eucharis, per dozen	3 0-4 0	Roses, doz. bunches	3 0-8 0
Gardenia, per dozen	2 0-4 0	— Tea, per dozen	0 6-2 0
Heliotrope, 12 sprays	0 3-0 6	— coloured, dozen	2 0-4 0
Lilium lancifolium, p. doz. blooms	2 0-4 0	— yellow (Maréchal), per doz.	1 6-6 0
— Harrisii, p. doz.	2 0-5 0	— red, per dozen	1 0-1 6
Maiden Hair Fern, 12 bunches	4 0-6 0	Stocks, per bunch	0 4-0 6
Marguerite, 12 bun.	1 6-3 0	Sunflower, various, dozen bunches	2 0-6 0
Mignonette, 12 bun.	2 0-4 0	Sweet Sultan, 12 bun.	2 0-4 0
Myosotis, 12 bunches	2 0-3 0	Tuberose, 12 blms.	0 4-0 6
Peas, Sweet, various, doz. bunches	3 0-6 0		
Pansy, per doz. bun.	1 0-2 0		

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Heliotrope, per doz.	4 0-6 0
Aspidistra, per doz.	15 0-30 0	Hydrangea, per doz.	12 0-24 0
— specimen, each	7 6-21 0	Ivy Geranium, doz.	4 0-6 0
Asters, dozen pots	4 0-8 0	Lilium Harrisii	13 0-24 0
Balsams, per doz.	4 0-6 0	— lancifolium, doz.	12 0-18 0
Companula, per doz.	6 0-12 0	Lobelia, per doz.	3 0-6 0
Cockscombs, per doz.	4 0-6 0	Marguerite, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, per doz.	...
Dracena, each	1 0-5 0	— pots 4 0-6 0	
Ferns, various, doz.	4 0-9 0	Nasturtiums, p. doz.	4 0-6 0
Ferns, small, per 100	4 0-6 0	Palms, various, each	2 0-10 0
Ficus elastica, each	1 6-7 6	— specimens, each	10 8-84 0
Foliage plants, doz.	12 0-42 0	Pelargonium, p. doz.	6 0-12 0
Fuchsia, per doz.	6 0-9 0	— scarlet, p. doz.	3 0-6 0

POTATOS.

Supplies still continue heavy, and prices lower, except for fine samples, Snowdrops and Hebrons, which realise 6s. 6d. to 7s.; other kinds, 4s. to 5s. 6d.; ordinary, 3s. to 3s. 6d. J. B. Thomas.

SEEDS.

LONDON: August 2.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report a quiet inquiry for Trifolium: it is too early yet for any great demand. New winter Tares realise thus far extreme prices. Giant Seed Rye, on the other hand, is good, abundant, and cheap. For Italian Rye-grass there is a lively sale. White Mustard is dearer than it has been for very many years. Choice new Rapeseed is obtainable on very moderate terms. Canary seed moves off slowly at former rates. There is no change in Hempseed. Peas and Haricot Beans dull.

FRUITS AND VEGETABLES.

BOROUGH: August 1.—Quotations:—Cabbages, 3s. 6d. to 6s. per tally; Parsley, 1s. 6d.; Carrots, 2s. 6d. to 4s.; Turnips, 2s. 6d. to 4s. per dozen bunches; Onions, Egyptian, 4s. 6d. to 5s. per cwt.; Cherries, 4s. to 5s.; Plums, 3s. to 5s. per half-sieve.

SPITALFIELDS: August 1.—Quotations:—Cabbages, 3s. 6d. to 6s. per tally; Turnips, 2s. 6d. to 4s.; Carrots, 2s. 6d. to 4s. per dozen bunches; Onions, Egyptian, 4s. 6d. to 5s. per cwt.; Cherries, 4s. to 5s.; Plums, 3s. to 5s. per half-sieve.

STRATFORD: Aug. 1.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 2s. to 4s. 6d. per tally; Cauliflowers, 6d. to 1s. per dozen; Carrots, household, 1s. 3d. to 2s. 6d. per dozen bunches; Onions, Egyptian, 5s. to 6s. per bag; do. Bordeaux, 6s. to 7s. per case; Plums, 2s. to 5s. per flat; do., 2s. to 2s. 6d. per half-flat; Grapes, 4s. to 5s. per flat; do., 2s. to 2s. 6d. per half-flat; Apples, 2s. to 4s. 6d. per flat; do., 3s. to 4s. per pad; Vegetable Marrows, 1s. 6d. to 2s. 6d. per pad.

FARRINGTON: Aug. 2.—Quotations:—Cabbages, 3s. 6d. to 6s. per tally; Onions, Egyptian, 4s. 6d. to 5s. per cwt.; Carrots, 2s. 6d. to 4s.; Turnips, 2s. 6d. to 4s. per dozen bunches; pickling Cabbages, 1s. to 1s. 6d. per dozen; Cucumbers, frame, 2s. to 2s. 6d. per dozen; Carrots, 60s. to 66s. per cwt.; Marrows, 1s. 6d. to 2s. per dozen.

FARRINGTON: Aug. 3.—Quotations:—Apples, 3s. per bushel (Lord Sutton); Pears, 3s. to 3s. 6d. do.; Plums, 1s. 6d. to 3s. 6d. per half bushel; Tomatoes, English, 4½d. per pound; Melons, 7s. per case; Cucumbers, 3s. per dozen.

POTATOS.

BOROUGH: August 1.—Quotations:—New: 5s. to 7s. per cwt.

SPITALFIELDS: August 1.—Quotations:—New: 5s. to 7s. per cwt.

STRATFORD: August 1.—Quotations:—Hebrons, 100s. to 105s.; Snowdrops, 100s. to 110s.; Kidneys, 80s. to 90s.; Magnum Bonum, 90s. to 100s. per ton.

FARRINGTON: August 3.—Quotations: Hebrons, red, 100s. to 110s.; do., white, 100s. to 110s.; Regents, 90s. to 100s.; Snowdrops, 110s. to 120s. per ton.

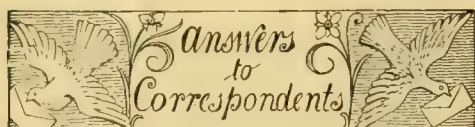
LONDON AVERAGES: August 2.—Hebrons, 100s. to 120s.; Kidneys, 80s. to 110s.; Snowdrops, 90s. to 100; Scotch Regents, 90s. to 100s. per ton; foreign kinds, 4s. 6d. to 5s. 6d. per cwt.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending July 29, and for the corresponding period last year:—1893: Wheat, 26s. 5d.; Barley, 23s. 1d.; Oats, 21s. 7d. 1892: Wheat, 29s. 5d.; Barley, 21s. 1d.; Oats, 21s. 6d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 135s. to 165s.; inferior, do., 110s. to 130s.; new, do., 120s. to 145s.; hay, best, 135s. to 165s.; inferior, do., 105s. to 120s.; new, mixture, 120s. to 130s.; and straw, 40s. to 60s. per load.



BOOKS: *C. P. The Gardeners' Assistant*, by Rob. Thompson, edited by Thos. Moore, 1878 edition. Published by Blackie & Son, London, Edinburgh, &c. A new edition of this excellent work will shortly be published. The price of the older edition is 30s.

LEeks: *H. C. & Co.* This is not a case of seeds germinating, but small bulbs have formed in place of some of the flowers. This is not at all uncommon in *Allium vineale*, the Potato Onion, &c., but we do not remember to have seen this condition in Leeks.

MICROSCOPE: *L. D.* You must be something more than a novice to be able to investigate fungus-diseases, and especially those caused by Bacteria. No book would be of much use. A regular training in a botanical laboratory is required.

NAMES OF PLANTS: *Southampton.* 1, *Philesia buxifolia* (Liliaceæ), Chile; 2, *Schizostylis coccinea* (Iridæ), South Africa.—*R. H. S.* *Dipsacus silvestris*, common Teasel.—*Ancient Norwich.* *Helianthus multiflorus*; a good double form.—*C. B.* Apple: send when fuller grown; 1, *Thuia gigantea* (Lobbi); 2, *Hypericum Androsæmum*; 3, *Thuia aurea*; 4, *Retinospora obtusa*; 5, not recognised; 6, *Cupressus Lawsoniana*.—*B. W. L.* 1, *Agrostis vulgaris*; 2, *Juncus bufonius*; 3, *Carex vulpina*; 4, *Galeopsis Tetrahit*; 5, *Stachys palustris*; 6, *Apium nodiflorum*.—*E. E. T.* *Cellomia coccinea* (Polemoniaceæ), Chile.—*C. L.*, *Carlisle.* *Saccolabium paniculatum*.—*A. B.*, *Southampton.* It may be that the *Pelargonium* sent is a sport from Mrs. Pollock.—*G. L. S.*, *Manchester.* Your variety of *Cypripedium bellatulum* is distinct if it remain constant.—*E. P.* 1, *Corydalis claviculata*; 2, *Carduus acanthoides*; 3, *Calamintha Acinos*; 4, *Nasturtium palustre*; 5, *Angelica silvestris*; 6, *Ceanothe crocata* (poison).

"SEED TRADE JOURNAL": *D. B.* None devoted entirely to seeds. You will from time to time find what you require in the Agricultural papers, and we occasionally devote an article to the subject.

SWEET PEA: *F. Roemer.* The flowers are of an uncommon blue tint, and the strain is worth preserving. We have observed something very near to it among Mr. Eckford's varieties of Sweet Peas. But if it is growing with others it will be difficult to obtain the variety quite true.

TECHNICAL HORTICULTURAL SOCIETIES: *A. W. McM.* We are not aware of any such having been published as yet.

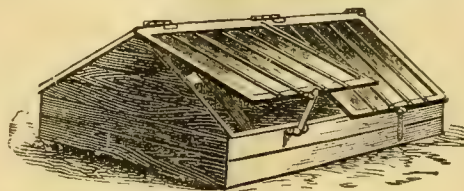
VINES DYING: *R. W.* The lifting was done too late in the year, and the Vines being old, and probably destitute of small roots, failed to get hold of the soil. The operation should have been performed whilst the matured leaves remained on the Vines, say in September, then new roots would have formed in the fresh soil, and the Vines would have survived.

COMMUNICATIONS RECEIVED.—*A. W. Hart.*—*E. M.*—*E. D. S.* & Co.—*Royal Aquarium Co.*—*F. W. B.*—*Cannell & Sons.*—*M. & W.*—*J. K. B.*, Utrecht.—*G. S. B.*—*H. W.*—*C. S.*—*R. S.*—*G. S. W.*—*D. T. F.*—*T. H. M.*—*C. H. W.*—*G. H.*—*R. J. L.*—*Vertegins & Co.*—*A. P.*—*G. N. Waukegan.*—*C. W. D.*—*R. M. Gray.*—*G. W. C.*—*G. S. B.* (fruits to name).—*W. J. S.*—*R. N. W.*—*J. P. D.*—*J. R. B.*—*W. G. S.*—*J. H. Y.* (answers to all of these in our next issue).—*W. Thomson, Senior.*—*J. S.*—*C. P.*—*M. Chapman.*—*T. F.*—*J. S.*—*J. F. McL.*—*J. J. W.*—*E. B.*—*H. G.*, Erfurt.—*Laxton Brothers.*—*J. B.*—*R. D.*—*E. G.*—*P. Mann.*—*E. C.*—*C. Herrin.*—*T. H. C.* (too late for this week).—*R. E. W.*—*J. G. B.*—*B. W.*—*W. H.*—*P. D.*

PHOTOGRAPHS, DRAWINGS, &c., RECEIVED WITH THANKS.—*F. W. S.*, Cannes.—*F. W. B.*—*J. W.*—*J. A.*

MARRIAGE—At the First United Presbyterian Church, Kelso, on July 20, by the Rev. T. Craufurd Kirkwood, assisted by the Rev. B. R. Mein, Thropton, CHARLES MURDOCH MILLER, son of William Miller, of 55, Lancaster Gate, London, and 5, Sussex Square, Brighton, to ELIZABETH EMILY, second daughter of the late William Mein, of Croft House, Kelso, and grand-daughter of the late Rev. Henry Renton.

GREAT REDUCTION IN FRAMES OUR WELL-KNOWN MAKE.



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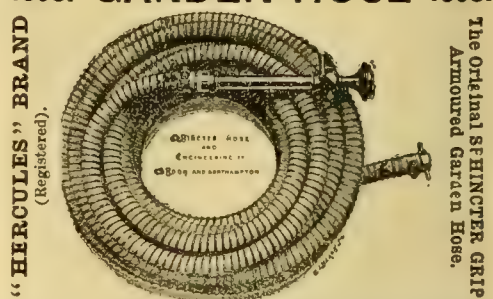
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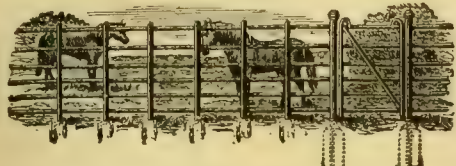
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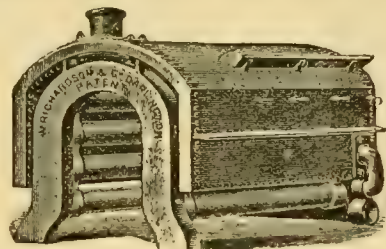
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GARDENER (HEAD, or good SINGLE-HANDED).—Grapes, Tomatoes, Cucumbers, &c.—K. B., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

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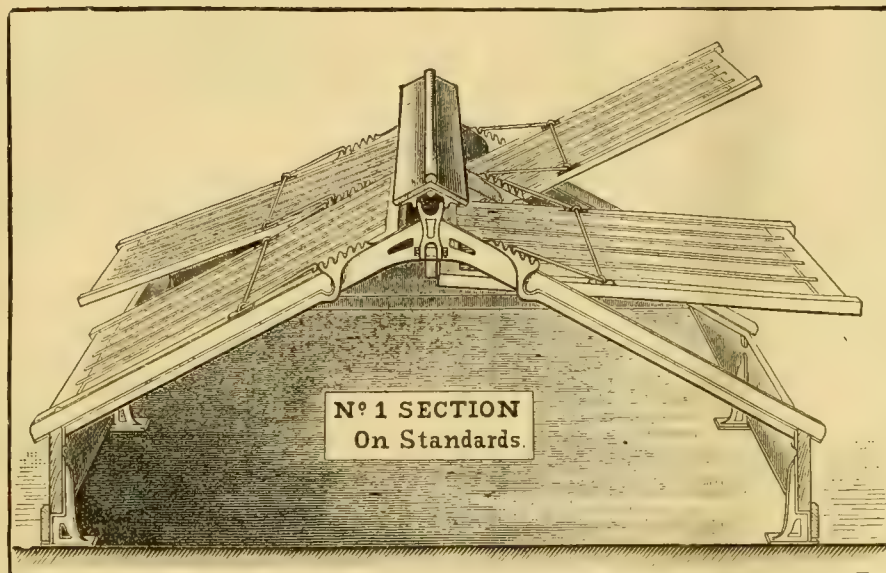
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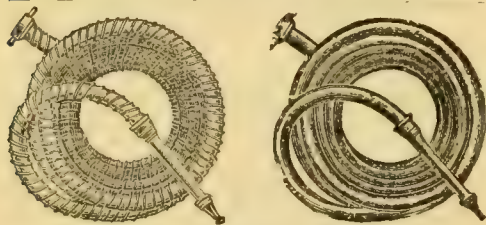
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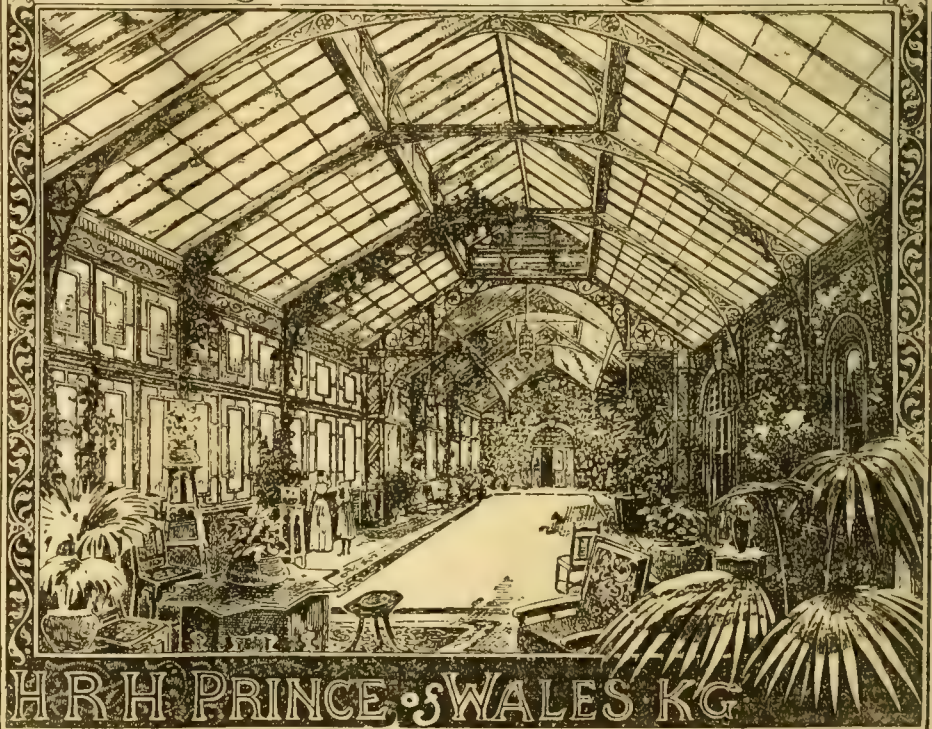
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ESTABLISHED 1841. No. 2746.

No. 346.—Vol. XIV. { THIRD SERIES. }

SATURDAY, AUGUST 12, 1893.

{ Regt. as a Newspaper. } PRICE 3d. POST-FREE, 3½d.

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CYMBIDIUM PENDULUM and EBURNEUM.
ONCIDIUM JONASIANUM and GRAVESIANUM.
LÆLIA SPECIES in way of L. WENDLANDIANA.
CYPRIPEDIUM INSIGNE var. MONTANUM,
in splendid condition.
VANDA CERULEA, the Hill type.
SACCOLABIUM GIGANTEUM. AERIDE ROSEUM.
CATASETUM SPECIES, probably new.
CALANTHE OCULLATA, Sander's variety.
EPIDENDRUM GODSEFFIANUM.
CATTLEYA MOSSIE, CYPRIPEDIUM HOOKERÆ, &c.
On view morning of Sale, and Catalogues had.

Monday, August 21.

ENORMOUS CONSIGNMENT OF LILIES from BERMUDA, received direct for unreserved Sale.
56,630 LILUM HARRISII, 5 to 7, 7 to 9, 9 to 11, and 11 to 14 inches.
1,350 LONGIFLORUM, 7 to 9, and 9 to 11 inches.
MESSRS. PROTHEROE AND MORRIS will include the above in their SPECIAL TRADE SALE OF DUTCH BULBS on MONDAY, August 21.
On view morning of Sale, and Catalogues had.

Great Trade Sales of Dutch Bulbs.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have now arranged their SALES OF DUTCH BULBS for the ensuing season.

SPECIAL TRADE SALES will take place as follows:—
August 21, over 2000 lots August 31, over 1500 lots
August 24, over 1500 lots Sept. 19, over 1200 lots
August 28, over 1500 lots Sept. 21 over 1200 lots
Also a grand lot of SPECIAL TULIPS, and a magnificent lot of ROMAN HYACINTHS will be included.

The whole for Sale absolutely Without Reserve.
Messrs. P. & M. have personally inspected the Farms in Holland, and made special arrangements for consignments of Bulbs for these Sales from some of the largest Growers, who can be depended upon both for the quality of the Bulbs and correctness of names.

Catalogues will be forwarded on application.
Auction Rooms, 67 and 68, Cheapside, London, E.C.

WANTED, TO RENT, a few good GLASS-HOUSES, suitable for Growing large Palms and Stove or Foliage Plants.—Apply, with full particulars, to C., Protheroe & Morris, 67, Cheapside, E.C.

WANTED, to RENT, a NURSERY and COTTAGE, with little or no Stock, and about 500 feet of Glass. Near station for London and the North. Not more than 40 miles from London preferred.
H. H., C. Fuller, High Street, North Finchley, N.

TO BE SOLD, a FREEHOLD MARKET NURSERY, 420 feet of Glass-houses, and about 70 feet Frames, all heated, standing in two Acres of land, and capable of great extension. Near station for London or the North.
S. W. DANBY, Leagrave, near Luton, Beds.

KENT, 22 miles from London, close to a station, capital NURSERY BUSINESS. Turnover £800 to £1000 per annum. Price for Stock, Horse, Van, and Cart, £300.
Particulars of Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, E.C.

TO LET, a NURSERY, with about Three-quarters of an Acre of Glasshouses and Frames, all fitted with Hot-water, and stocked with Tomatoes, &c. Stock at Valuation. Rent, £75.—Apply, BANISTER, Asgill Nurseries, Richmond, Surrey.

City of Peterborough.

TO NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS.

TO BE LET, with Immediate or Michaelmas Possession, the well-known, old-established Peterborough BUSINESS, comprising a NURSERY FARM of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the Town. Also, a superior SEED SHOP and STORE, in a first class central position; and a FLOWER-STAND on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.
Apply, FOX AND VERGETTE, Estate Agents, Peterborough.

County Borough of Hanley.

TO BUILDERS, HORTICULTURAL BUILDERS, WROUGHT-IRON ART METAL WORKERS, TERRA COTTA MANUFACTURERS, &c.

TENDERS are Invited for the following, viz.:

HANLEY PARK.

Contract No. 4.—Lodge, Gate Pillars, and Wing Walls. Cauldon Place Entrance.

Contract No. 5.—Terra Cotta Fountain and Vases.

Contract No. 6.—Wrought Iron Gates.

Contract No. 7.—Terrace Wall and Foundations to following:—

Contract No. 8.—Conservatory and Greenhouses.

Designs, &c., prepared by Mr. Thomas H. Mawson, Park Architect, Windermere.

Specifications, bills of quantities, forms of tender, and particulars may be obtained at my office, Town Hall, Hanley.

The lowest or any Tender not necessarily accepted.

Sealed and endorsed Tenders must be sent to me before Monday night, August 28 inst.

JOSEPH LOBLEY, Borough Engineer and Surveyor.

Hanley, August 1, 1893.

To the Trade.

RAPESEED and AGRICULTURAL WHITE MUSTARD.
H. AND F. SHARPE have to offer fine samples of RAPESEED and WHITE MUSTARD, suitable for Field Culture. Special quotations and samples on application.
SEED GROWING ESTABLISHMENT, WISBECH.

Ferns Cheap.

STOVE and GREENHOUSE.—50 varieties, in 2½-inch pots, 12s. per 100; best Market sorts, in 4½s, 6s. per dozen; stores, 6s. per 100. Adiantum cuneatum, in 32's, valuable for fronds, 6s. and 8s. per dozen. Phlebodium aureum and Adiantum cuneatum for making large plants quickly, 16s. and 20s. per 100. Well packed, put on rail, free for cash with order.

G. BETHELL, Whiteley's Nurseries, Hillingdon Heath, Uxbridge.

PRIMULAS! PRIMULAS! PRIMULAS!

25th year of Distribution.

Williams' superb Strain, 1s. 6d. per dozen; 10s. per 100. CINERARIAS, same Price; also DOUBLE WHITE PRIMULAS, 6d. each. Package and Carriage free for Cash with Order.—JOHN STEVENS, The Nurseries, Coventry.

Important to Mushroom Growers.

CUTHBERT'S SPECIALITE MUSHROOM SPAWN. Always alike; most productive. Hundreds of testimonials. Per bushel, 5s.
K. AND G. CUTHBERT, Seed, Bulb, and Plant Merchants, Southgate, N. Established 1797.

PALMS, FERNS, &c.—FERNS in Variety.—

ARALIAS and CYPERUS NATALENSIS in 4½s, 6s. per dozen; LARGE A. CUNEATUM in 4½s, 6s. and 7s. per dozen; PALMS in variety, and FIJUS in 4½s, 12s. per dozen; PALMS, fine stuff, in large 6½s, 5s. per dozen; FERNS and CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order.
LANE AND MARTIN, 227, Brixton Road, London, S.W.

FERNS! FERNS!—Trade.—Greenhouse and

Stove, 25 saleable sorts, in 2½-inch pots, 12s. per 100; 10 best Market sorts, in 4½s, 6s. per doz.; stores, 6s. per 100. Large Adiantum cuneatum, value in fronds, 6s. and 8s. per doz. Cyperus, Aralias, Grevilleas, in 4½s, good value, 6s. per dozen. Palms, Ficus, & Dracenas, 1s. each. Hydrangeas, Pelargoniums, Marguerites, 9d. each; in 4½s, 1s. each. P. tremula and A. cuneatum, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—J. SMITH, London Fern Nurseries, Loughboro' Junction, London, S.W.

CARNATION "Miss Proctor," yellow ground.

—This variety is far in advance of all others up to date. Colour éru ground flaked with bright cardinal, quite smooth on the edge of each petal, does not burst in the calyx, very hardy, and a free grower on short erect stems. Two First-class Certificates 1892. Plants 1s. each, 9s. per dozen. Ready in September. Intending purchasers may have a bloom free on application to—

R. W. PROCTOR, Nurseryman, Chesterfield.

NEW IMPORTATION OF ORCHIDS

From BRAZIL and BORNEO.

PARTICULARS POST-FREE ON APPLICATION.

INSPECTION INVITED.

A. H. GRIMSDITCH, Importer,
5, CLAYTON SQUARE, LIVERPOOL.

DANIELS' DEFIANCE.

The Finest Variety of Cabbage in Cultivation.

It is early, short-legged, and compact, grows rapidly to the weight of 10 to 15 lb., and is of the most delicious Marrow flavour. Should be in every Garden. Sow now. Seed, our true stock, with cultural directions, per ounce, 1s. 6d., post free.

DANIELS BROS.,

Seed Growers and Nurserymen, Norwich.

DANIELS' GOLDEN ROCCA ONION.

The most superb variety in cultivation; of fine globular form, with golden yellow skin; often grows to the weight of 2 to 3 lb. each, and of a mild, delicate flavour. Splendid for exhibition. Sow now. Seed, with cultural directions, per ounce, 2s., post-free.

DANIELS BROS.,

Seed Growers and Nurserymen, Norwich.

EXHIBITIONS.

WILTS HORTICULTURAL SOCIETY'S

SHOW will be held in
WILTON PARK (not in Salisbury),
AUGUST 16, 1893.

The Nurseries, Salisbury. W. H. WILLIAMS, Hon. Sec.

SHROPSHIRE HORTICULTURAL

SOCIETY.

Schedules for the FLORAL FÊTE, SHREWSBURY

August 23 and 24, 1893, are Now Ready.

CASH PRIZES are offered in the Society's Schedule for 1893, amounting to nearly SEVEN HUNDRED and TWENTY POUNDS. Schedules sent post-free on application to—

Messrs. ADNITT and NAUNTON, Hon. Secs., Shrewsbury.

CRYSTAL PALACE,

August 18 and 19, 1893.

£300 in Money Prizes, Gold, Silver, & Bronze Medals and Certificates.

Entries close August 10. Free Entries for Members of Co-operative Societies and Members and Customers of the Agricultural and Horticultural Association, Limited. Schedules Post Free on application to—



Edw. Owen, Greening, Hon. Sec.
Creek Road, Deptford, S.E.; and 3, Agar Street, Strand, W.C.

SHREWSBURY
FLORAL FETE,
AUGUST 23 and 24, 1893.

SPECIAL CLASS.—A display of Floral arrangements, in a space 10 ft. by 4 ft. 6 in.; a few small plants allowed for effective staging. Any design in flowers admissible, entirely at the discretion of the Exhibitor.

First Prize, £5 and Gold Medal, value £3 3s.; Second Prize, £1 and Silver Medal; Third Prize, £2.

Entries close August 16, to the Hon. Secs., Shrewsbury.

PTERIS TREMULA in 5-inch pots, 6s. per dozen; 45s. per 100. Cyperis, 6s. per dozen, in 48 pots. S. HARBER, Florist, Tettenhall, Wolverhampton.

EUCARIS AMAZONICA.—For Sale, Twenty Plants, very strong and healthy; also quantity of VALLOTA PURPUREA. Particulars on application.
F. SEABROOK, Ramsey Abbey, Huntingdon.

DRACENAS.—3000 must be Sold, including about 20 leading sorts. Room Wanted. Or would EXCHANGE for ORCHIDS, Catleya Dowiana aurea, gigas, or Mendelii. Imported stuff.—TUFFIN, Bexley Heath.

SPECIAL CHEAP OFFER.—20,000 fine

Pot Plants, TO CLEAR:—
GERANIUMS, finest named only, in pots, 1s. 6d. doz., 10s. 100. In best variety, Cutting, 2s. 6d. per 100.

BEGONIAS, finest strains in pots, 1s. 6d. and 2s. per doz.

Varieties of plants on application.
TOWNSEND BROS., The Nurseries, Bloxham.

STRAWBERRIES. — STRAWBERRIES.

Three Good Sorts:—
COMPETITOR (Laxton's) 5s. per 100. } Post-
SCARLET QUEEN " 6s. " } free.
LATEST OF ALL " 5s. " }
Strong well-rooted runners, true to name.
WILLIAM POTTEN, Camden Nurseries, Cranbrook, Kent.

Kent: the Garden of England.

GROW ONLY the BEST STRAWBERRIES

AND CONSULT

GEORGE BUNYARD and CO.'S NEW LIST.

A Chester Gardener says:—"In all my long experience I never had such crops as from your Kent plants."
Extra fine plants in little pots and runners ready shortly.
The Old Nurseries, Maidstone.

STRAWBERRIES, strong, well-rooted Plants.

—Noble, 4s. per 100; President, 3s. per 100. Price per 1000 on application.

WALLFLOWERS.—Belvoir Castle, best yellow, strong plants, 2s. 6d. per 100; Covent Garden Red, 2s. 6d. per 100;

Double German, 3s. 6d. per 100.

SAXIFRAGA PYRAMIDALIS, very fine, 8s. per 100. Many other varieties to offer.

MYOSOTIS ALPESTRIS, 1s. per 100.

W. KERSLAW, The Nurseries, Bingley, Yorks.

ALL GOODS DELIVERED FREE

on board, London, Antwerp, Rotterdam. £ s. d.

LILUM HARRISII, 5-7 in. circ., per 1000 bulbs. 6 5 0

" 7-9 in. " " " 11 10 0

" 9-11 in. " " " 22 10 0

" AURATUM, 7-9 in. " " " 8 7 6

" 9-11 in. " " " 11 10 0

TUBEROSES, Pearl, select 4-6½ in. " " 1 10 0

" " " " " " " " 1 2 6

Prices for GLADIOLUS, &c., on application.
F. W. O. SCHMITZ and CO., Jersey City, N.J., U.S.A.

SELECT FLOWER ROOTS.



JAMES VEITCH & SONS

BEG TO ANNOUNCE THAT THEIR

BULB CATALOGUE FOR 1893

Has now been Posted to all their Customers: any one not having received the same, a Duplicate Copy will immediately be forwarded Post-free on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

HORTICULTURAL BUILDER.

Every description of GREENHOUSES, LIGHTS, &c.

PIT LIGHTS.

Best quality and workmanship, 2 inches thick, 6 ft. by 4 ft., iron bar across, and very strong, 4s. 6d. each, 50s. doz., £10 for 50 lights, free on rail in London. Cash or reference with order.

CUCUMBER HOUSES.

Timber sufficient to build 100 feet by 12 feet house, Roof Ventilators, Door, &c. Put on rail in London. Price £9 10s. Send for detailed specification, to

W. DUNCAN TUCKER, HORTICULTURAL WORKS, TOTTENHAM.

Send for Illustrated Catalogue, just issued.

STRAWBERRY RUNNERS.—The Orchard Company, Scotch, have ready for delivery strong, well-rooted runners of Noble, Stirling Castle, and Paxton, 25s. to 40s. per 1000, on rail.—Address
MACINTOSH, 8, Warwick Square, Carlisle.

Strawberries.

A FINE COLLECTION of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free. THOMAS RIVERS AND SON, Sawbridgeworth.

STRAWBERRY PLANTS.

Hand-laid Runners and Plants in Pots of the best varieties, including PRESIDENT, SIR JOSEPH PAXTON, BRITISH QUEEN, KEEN'S SEEDLING, VICOMTESSE H. DE THURY, AUGUSTE NICAISE, and others. Decript'r: Catalogue on application.

DICKSONS NURSERIES, CHESTER.

ORCHID BASKETS, RAFTS, BOATS, AND CYLINDERS, AND ALL GARDEN SUNDRIES.

SEND FOR A

PRICE LIST

from the Largest Manufacturer in the Trade.

H. G. SMYTH,

21, GOLDSMITH STREET, DRURY LANE, W.C.

FIR-TREE OIL

SOLUBLE INSECTICIDE.

The most pleasant and reliable of all insecticides for destroying insects on plants, animals, and birds. Thousands of testimonials received from all parts of the world. Bottles, 1s. 6d., 2s. 6d., 4s. 6d., 7s. 6d., and 12s. 6d.; in bulk, 11s. per gallon, with full directions for use.

Wholesale from all Horticultural Dealers.

E. GRIFFITHS HUGHES, Victoria St., MANCHESTER. NEW YORK—ROLKER AND SONS.

RICHARDS' WEED DESTROYER.

Every gallon guaranteed above the usual standard strength. Prepared at one of the largest chemical works in London. As at present so largely used in the Royal Gardens, Frogmore, Waddesdon, Trentham, Luton Hoo, and many other Gardens and Parks too numerous to mention. Directions for use, price, and full particulars, post-free. G. H. RICHARDS, Sole Manufacturer, Old Shot Tower Wharf, Lambeth, London, S.E. Trade supplied on best terms.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

OAK STAKES for ROSES, &c., 4 feet long, 1/2 inch, 3/4 inch, and 1 inch square. Price 4s., 6s., and 8s. per 100.—SHENSTONE, Grange Road, Leyton.

Plants Shipped to all Parts.

WATSON AND SCULL, 90, Lower Thames Street, London, E.C., give special attention to the reception and forwarding of Plants and Botanical Specimens to and from all parts of the World. Be particular, and have them consigned to our Care, and save Expense and Delay. Dealers in Virgin Cork, Raffia, Bamboo Canes, Garden Sticks, Palm Seeds, &c.

C. BEESON'S MANURE, composed of blood and bone. The best Fertiliser for all purposes. Sold in tins, 1s., 2s. 6d., and 5s. 6d.; also in air tight bags, 1/2 cwt., 6s.; 1 cwt., 10s. Full directions for use sent with each tin and bag. 1 cwt. and above sent carriage paid; cash with order. C. BEESON, Bone Mills, St. Neot's, Hunts.

To Nurserymen, Gardeners, &c.

WANTED, the above to try SPENCER'S NEW FERTILISER, there being no acids or chemicals used in the manufacturing of this Fertiliser. Prize growers of hardwood plants and root crops will find this the only thing wanting, it being the most genuine and powerful Fertiliser yet introduced. Can be used in powder or dissolved in water—a special advantage. Sample cwt. bag sent to any part, price on application. Analyst report with each parcel. Apply, I. SPENCER, 54, Spring Street, Hull, Yorkshire.

BONES! BONES!! BONES!!! Any size from dust to 1 inch. Dissolved Bone Compound, for Top-dressing. All at 10s. per cwt.; less quantity, 14d. per lb. Carriage paid on 1 cwt. Terms, Cash with Order. Special quotations for large Buyers.

E. S. WILES AND CO., Bone Crushers, St. Albans.



SMITH'S PERFECT PATENT

POWDER WEED KILLER.

An Important Novelty just introduced. Only one-fifth the bulk and weight of the liquid. Immediately soluble in cold water. One small tin makes 25 gallons for use.

ALL TINS FREE. NO RETURN EMPITIS. PRICE:—1 tin 1s. 9d., 4 tins 1s. 6d. per tin, 8 tins 1s. 5d. per tin, 12 to 20 tins 1s. 4d. per tin. Sample Tin, Carriage Paid, 2s.

LIQUID WEED KILLER.

The first Weed Killer ever offered. Used in the Royal Gardens. Never fails. 4 gallons, Carriage paid, 6s. 6d. Write for full particulars and Price Lists. Sole Makers—MARK SMITH, Ltd., LOUTH, Lincs. May be had through Chemists and Seedsman.

ECONOMICAL—SAFE—LASTING

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CLAY'S MANURES



Having the respective Trade Mark printed on each packet and bag, and impressed on the lead seal attached to the mouth of each bag, which is



TRADE MARK.

TRADE MARK.

THE ONLY GUARANTEE OF GENUINENESS.

These well-known Manures are used by the Leading Growers, Royal Botanic Society, Royal Horticultural Society, Royal Parks, London County Council, throughout the United Kingdom, and in every quarter of the Globe.

Sold by Seedsman, Florists, and Nurserymen, in 6d. and 1s. Packets, and SEALED BAGS.

7 lb.	14 lb.	28 lb.	56 lb.	112 lb.
2s. 6d.	4s. 6d.	7s. 6d.	12s. 6d.	20s.

Or direct from the Works, in 1s. PACKETS, Post-free, or Bags of either size, Carriage Paid (as sample), in the United Kingdom for Cash with order as above.

Prices and Samples of CRUSHED BONES in Various Sizes on Application.

CLAY & SON,

Manure Manufacturers, Bone Crushers, &c.,

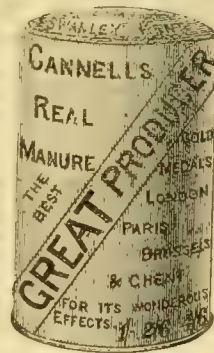
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REAL MANURE.

To make up for the loss from drought, it is absolutely necessary all should use the above immediately. Its effect is marvellous. Just one powerful ingredient makes it far superior to all others.

Mr. NOAH KNELLER, Malshanger Pk., Basingstoke

Has had his supply, and says: "The exact dimensions of one Onion, 7 inches across, 19 inches round, weight 2 lb. 9 oz.; twelve Onions weighing 34 lb., which I exhibited at Reading. Grown solely by the use of CANNELL'S REAL MANURE. A farmer said that he wished his Swedes were as big as my Onions."



H. CANNELL & SONS, SWANLEY, KENT.

H. J. JONES' CONCENTRATED MANURE.

Is specially valuable to Growers of CHRYSANTHEMUMS, POT PLANTS, and GARDEN PRODUCE for Exhibition.

It adds colour and substance to Plants, Flowers, and Fruits. By its use crops of all kinds are more than doubled.

A trial order solicited.

Prices, Carriage Free for Cash with Order:—

7 lb.	14 lb.	28 lb.	56 lb.	112 lb.
5s.	8s.	12s. 6d.	21s.	36s.

H. J. JONES,

RYECROFT NURSERY, HITHER GREEN, LEWISHAM, S.E.

ORCHID PEAT; Best Quality; **BROWN** FIBROUS PEAT for Stove and Greenhouse use. **RHO-**DODENDRON and **AZALEA** PEAT. Samples and Prices of WALKER AND CO., Farnborough, Hants.

EARL'S COURT EXHIBITION.**Exhibition of
GARDENING and FORESTRY
THE GARDEN of LONDON.**

AUGUST 23 and 24.

**GREAT SHOW OF AUTUMN FLOWERS,
DAHLIAS, AND HARDY FRUIT.**Classes (Open and Amateur) for Collections of
Gladioli, Dahlias, Asters, and Hardy Fruit.Meritorious Exhibits not named in the Schedule will be
recognised.Prizes, Medals, and Certificates awarded for every Show.
All applications for entries, schedules, regulations, and further
information should be addressed to Mr. H. E. MILNER, the
Chairman, at the Offices of the Exhibition, Earl's Court, S.W.ADMISSION to the Exhibition Building, Flower Show,
and the Central and Western Gardens, and to
one of 2000 free seats at Captain Boyton's
World's Water Show, 1s.

OPEN DAILY, from 11 A.M. to 11 P.M.

SEASON TICKETS (Half Price), 10s. 6d.,

Available till end of Season, to be obtained from
the usual Agents and the Secretary.**C H E A P O F F E R .**

100,000 KENTIAS, all sizes.

50,000 ARECAS, all sizes.

2,000 ASPARAGUS PLUMOSA NANA.

1,000 " TENUISSIMA.

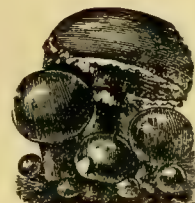
Dracenas, Crotons, Pandanus Veitchii, and Ficus elastica.
Prices on application.G. BETHELL, Whiteley's Nurseries, Hillingdon Heath,
Uxbridge.10,000 GENISTAS, in small 60's, extra
fine plants, £1 10s. per 1000, 10s. per 100, cash
with order. Post-Office orders payable at Leyton High Street.
T. BALDWIN & SON, Edith Nurseries, Burchall Road, Leyton.**W. M. CUTBUSH AND SON**
Strawberries.
have ready for immediate delivery
ALL THE LEADING SORTS, IN SMALL POTS.
They are strong, free plants, and such as will give every
satisfaction.
Highgate Nurseries, London, N., and Barnet, Herts.**BULBS.**—Our special offer of Daffodils, and
other Bulbs for early planting, is now ready. Liliun
candidum, 10s. and 12s. per 100; Liliun Harrisii, 5s. to
10s. 6d. per dozen; Roman Hyacinths, 12s. 6d. and 16s. per 100,
very scarce; Narcissus (paper-white), 5s. per 100; Narcissus
Double Roman, 5s. per 100; Gladiolus Colvilli (The Bride),
lovely for cutting, 2s. 6d. per 100; Iris hispanica (the poor
man's Orchid), finest mixed, 1s. 6d. per 100. Every article the
best procurable.

J. K. PEARSON AND SONS, Chilwell Nurseries, Notts.

LAXTON'S STRAWBERRIES THE BEST.
—Excellent plants, in pots, for forcing and open ground.
Runners ready at once of Noble, Vicomtesse, Ruskin, Nicaise,
British Queen, President, Commander, Competitor, Jas. Veitch,
Keen's Sucrée, Latest of All, Marguerite, Paxton, Waterloo,
Sensation (new '92), and the grand new "Royal Sovereign"
(three certificates), an earlier, richer flavoured, and improved
Sir J. Paxton. Handsome coloured plate 6d. (gratis to cus-
tomers). Full Descriptive Priced List free from—
THOMAS LAXTON, Strawberry Plant Grower, BEDFORD.

THE BEST
BULBS
AT CHEAPEST RATES.
EXTENSIVE COLLECTIONS OF
Hyacinths, Tulips,
Narcissi, Snowdrops,
Lillies, Crocuses, Scillas,
ETC., ETC.
ALL THOROUGHLY RIPENED.
Descriptive Catalogue, No. 428, Post Free
on Application.
Delivered Free by Rail or Parcel Post.

DICKSONS Bulb Growers **CHESTER**

**CUTBUSH'S MILL-
TRACK MUSHROOM SPAWN.**
—Everyone can readily grow Mush-
rooms, and by using this Spawn will
ensure success. All growers speak in
high praise of the quality. Numerous
Testimonials. None genuine unless
in sealed packages, and printed cul-
tural directions enclosed with our
signature attached.
Price, 6s. per bushel, 1s. extra for
package; or, 1s. per cake, free per
Parcel Post.WM. CUTBUSH & SON, Nurserymen and Seed Merchants,
Highgate Nurseries, London, N., and Barnet, Herts.

SPECIALITY—
FOLIAGE PLANTS
ICETON'S
LARGE PALMS.
PUTNEY,
S.W.

SEEDLING PLANTS.We beg to offer strong transplanted seedlings from our fine
strains of the following. Post free at prices quoted:—

	Per doz.	Per 100.
CALCEOLARIAS, very choice	1s. 6d.	10s. 6d.
CARNATIONS and PICOTEEs, from stage flowers, fine	1 6	10 6
CARNATIONS, "Margaret," very choice mixed	1 0	7 6
CINERARIAS, from a grand strain	1 6	10 6
PRIMULA sinensis, choicest red, white, or mixed	1 6	10 6
" alba magnifica, superb pure white	2 6	—
CYCLAMEN persicum giganteum, James' superb strain, strong plants from single pots, for blooming next winter and spring	3 6	25 0

DANIELS BROS.,
TOWN CLOSE NURSERIES, NORWICH.**MESSRS. LINDEN, L'HORTICULTURE INTERNATIONALE,**
Leopold Park, BRUSSELS,

Have much pleasure in offering a splendid lot of semi-established Plants of their unrivalled

CATTLEYA REX

(LINDEN'S TRUE CATTLEYA REX).

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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 12, 1893.

THE FERNS OF NEW ZEALAND.

THE most interesting fact about the Ferns of New Zealand is the large proportion which they bear to the general mass of the vegetation. Whilst in Britain there are only about forty Ferns to 1500 flowering plants, or one to thirty-seven, and in the whole of Europe only about sixty Ferns to 10,000 flowering plants, in New Zealand the number of Ferns is 130, and the number of flowering plants not much above 1000 (the exact number was 935 when Sir J. D. Hooker's *Handbook of the New Zealand Flora* was published in 1864, and there has been a considerable number discovered since), or a proportion of one to between seven and eight. Whilst in Europe the number of Filmy Ferns (*Hymenophyllaceæ*) is only three, in New Zealand it is over twenty. This indicates a complete difference in climate. As regards temperature, the difference between the means in the shade between the two extreme months of January and July, which in central Europe is 40° Fahr., and in Britain varies from 22° to 27°, in New Zealand sinks to 14°. But moisture has as much to do with the matter of temperature, and the absence of any period of regular prolonged dryness. In New Zealand there is always plenty of moisture; streams and rivulets abound. It is one of the best watered countries in the world. No part of it is far from the sea, the rainfall is high, and upon the hills and their slopes mists often rest. The consequence is that Ferns are very numerous, luxuriant, and beautiful, and bear such a large proportion to the general body of the vegetation.

New Zealand is 900 miles in length, so that between the south and north the climate varies greatly. The hills of the southern island rise to the level of perpetual snow. This wide range of temperature is of course indicated in its vegetation. In flowering plants subtropical types are represented by a Palm, two Peppers, three Laurels, and five epiphytic Orchids. In Ferns the same element comes out in eight Tree Ferns, a Marattia, and a Lygodium. These are three groups which do not obtain entrance anywhere into the flora of Europe, though spread round the world in the tropical and sub-tropical zones. On the other hand, there are in New Zealand eight out of the forty Ferns that grow in Britain, and, amongst the Club-Mosses, *Lycopodium clavatum* and *Selago*; the latter does not grow at sea-level anywhere in England, and reaches to the summits of the highest mountains in Scotland.

Four common tropical and sub-tropical Ferns, *Gleichenia dichotoma*, *Nephrodium molle*, *N. unitum*, and *Nephrolepis cordifolia*, grow only in New Zealand, sparingly in the district of the hot springs.

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NOTTS

Zealand flora is that so many of the plants of the colony are not found anywhere else in the world, but are what the geographical botanists call endemic types. When the *Handbook of the New Zealand Flora* was published in 1864, out of 935 flowering plants then known, 677 were endemic types—upwards of 70 per cent. Botanically the alliance of New Zealand is closest with Australia, where also a large proportion of the plants are endemic. Out of the 935 species 222 were known also in Australia, leaving only thirty-six New Zealand species known out of the colony but not known in Australia. Ferns on the average have a far wider distribution than flowering plants. *Pteris aquilina*, *Aspidium aculeatum*, *Nephrodium Filix-mas*, *Cystopteris fragilis*, are amongst the most widely distributed of all known species, whether vegetable or animal, but of the one hundred and thirty New Zealand Ferns about forty-four, or one in three, are endemic, about sixty-five are common to New Zealand and Australia, and about twenty are common to the New Zealand and other parts of world, without being known in Australia.

An excellent handbook of the New Zealand Ferns was published in 1890 by Mr. H. C. Field, who had almost lived in the forests for many years, in the pursuit of his profession as a land-surveyor, and who had enjoyed and used with great diligence and judgment his exceptional opportunities for studying the species in different situations in all their range of variation. This work is in quarto, and contains process plates of every New Zealand species, and full directions for its cultivation, and a definition of the terms used by botanists in describing the tribes, species, and genera. To this work we would refer all our readers who want to study the New Zealand Ferns thoroughly. Many of them are so variable that it is very difficult without studying them thoroughly to believe that their extremes belong to one and the same species. Here we can only pass in review the sub-orders and genera in a very cursory way.

Gleichenias.—The *Gleicheniaceæ* form a distinct sub-order, marked by their forked, rigid fronds, with comb-like final segments, and few large capsules, with a complete transverse ring. There are five species in New Zealand, only one of which is endemic, three extend to Australia, and one already mentioned as confined to the volcanic district, belts the world in the Tropical Zone. As this sub-order is quite unknown in Europe, these *Gleichenias* always strike the attention of travellers and settlers. One species, *G. circinata*, springs up in the north everywhere directly the bush is cleared, and its wide-creeping rootstock makes it difficult to eradicate.

Tree Ferns.—Of the eight New Zealand Tree Ferns, three belong to the genus *Cyathea*, one to *Hemitelia*, one to *Alsophila*, and three to *Dicksonia*. *Cyathea medullaris* is the tallest, its stem reaching a height of 60 feet. *C. dealbata*, as the name implies, has the fronds all covered over with a sort of waxy-white powder on the under-side. *Dicksonia fibrosa* is said to be the handsomest species, from the large number of deeply-divided graceful fronds which crown its caudex at one and the same time. *D. fibrosa* and *D. lanata* are so nearly allied to the well-known Australian *D. antarctica* that they were formerly classed as geographical varieties of that species. The *Dicksonias* have a mass of long woolly hairs at the base of the leaf-stalks, which is sometimes used to stuff cushions, whilst the other genera have distinct flat membranous scales. *Dicksonia* also differs from the true *Cyatheaceæ* in the capsule.

Filmy Ferns, which constitute the sub-order *Hymenophyllaceæ*, are found principally in the damp recesses of the forests on old trunks, amongst moss, and on rocks in the beds of the streams. They have only one layer of cells in the leaf between the upper and lower epidermis, and soon shrivel up when

exposed to the direct rays of the sun. There are twenty-three species in New Zealand, of which eleven are endemic; of these the most curious are *Trichomanes reniforme*, which has entire stalked orbicular pellucid fronds, a couple of inches broad, and *Hymenophyllum pulcherrimum*, the largest of the New Zealand species, which has deeply divided fronds a foot or more in length. Our British *Hymenophyllum tunbridgense*, first found at Tunbridge Wells, is dispersed all over the colony.

One of the most interesting of all the New Zealand Ferns is *Loxosoma Cunninghami*, named after Allan Cunningham, who made extensive botanical explorations in the Northern Island in 1826 and 1828. *Loxosoma* is the only Fern-genus which is peculiar to New Zealand. It has the texture of an ordinary Fern, combined with fructification like that of *Trichomanes*.

Polypodiaceæ.—We come next to the suborder *Polypodiaceæ*, to which the great mass of the Ferns belong. *Cystopteris fragilis*, one of the most cosmopolitan of Ferns, grows in various forms amongst the mountains. All the three species of *Davallia* are endemic. *D. Novæ-Zelandiæ* is a beautiful plant, with large finely-divided fronds, spread throughout the colony. *D. Tasmani*, confined to the Chatham Islands, where it was discovered recently by Mr. T. Cheeseman, F.L.S., Curator of the Auckland Museum, much resembles the Canarian Hare's-foot Fern (*Davallia canariensis*). Of the Maidenbairs there are in New Zealand six species, and of the *Lindsayas* four. The finest of them is *Adiantum formosum*, which reaches a height of 4 or 5 feet, with twenty main branches, and a thousand final segments. *A. æthiopicum*, diffused all over the south temperate zone, is a near ally of the European *A. Capillus-veneris*. *Lindsaya linearis* has simple fronds, with a long row of light green fan-shaped leaflets on each side of the rachis. *Hypolepis distans* grows throughout the colony in open bush, and often springs up in abandoned clearings. The two other species of this genus are both endemic, *H. millefolium* being confined to the mountains. Of the large genera, *Cheilanthes* and *Pellæa*, there are two species each in the colony; they require less shade and less water than Ferns in general. Of *Pteris* there are six species, of which two (*scaberula* and *macilentia*) are endemic. *Pteris esculenta* is now considered a variety of our familiar English *P. aquilina*. In New Zealand it reaches a height of 12 or 14 feet. The starchy rootstocks formed an important part of the food of the Maories before the Europeans came; it still covers large tracts of land, like the Bracken in England, but was much more plentiful before regular cultivation began.

The *Lomarias* come out very strongly in New Zealand. They all have simply pinnate fronds, the fertile ones quite distinct from the barren ones, with narrower divisions, entirely covered with fructification, like the common Hard Fern (*Lomaria Spicant*) of our English moors. The *Doodias* have a similar habit, but the fronds are not dimorphic. The genus is confined to Polynesia, Australia, and New Zealand, with a single outlying representative in Ceylon.

There are about ten *Aspleniums* in New Zealand, but they are so variable in size and cutting that it is very difficult to say where one species stops and another begins. A very common and very variable species, *A. obtusatum*, is nearly allied to our English *A. marinum*. *A. bulbiferum* and *flaccidum* are larger and more deeply divided. The former is remarkable for the bulbils it bears all over the leaf, which may be taken off and planted; our common British *A. Trichomanes* is found on rocks in the southern alps of New Zealand. *A. flabellifolium* is a pretty Fern, nearly allied to *A. viride*, suitable to grow in hanging-baskets, and very easy to cultivate. *Aspidium* is represented in New Zealand by a variety of the cosmopolitan *A. aculeatum* and four other species. Of the large genus *Nephrodium* there are only six species in New Zealand, two of which are confined to the district of the hot springs, and another (*N. Thelypteris*) is a well-known British plant. Of the tropical and sub-tropical genus *Nephrolepis*

there is only one species, and that very rare. The large genus *Polypodium* is represented by ten species. *P. australe* has very small entire fronds, grows in the crevices of rocks and ascends the mountains to 5000 feet. *P. serpens* is very abundant throughout the colony, and has small, rigid, dimorphic, entire fronds. *P. Billardieri* and the newly-discovered *P. novæ-zelandiæ* more resemble the European *P. vulgare*. The two *Gymnogrammas* are small annual species of wide dispersion, very unlike the Silver Fern and Gold Fern of our greenhouses. The sub-tropical genera *Vittaria* and *Antrophyum*, so plentiful in Malaya and Polynesia, do not reach New Zealand, and the large genus *Acrostichum* is not represented.

Of the *Osmundaceæ*, the cosmopolitan *Osmunda regalis* has been found very sparingly, and may have been introduced. The common Australian and Cape *Todea barbara* is only found in the very north of the colony. Two of the most beautiful of all known Ferns, *Todea* (*Leptopteris*) *hymenophylloides* and *superba*, are widely distributed in shaded woods through both the Northern and Middle Islands. They have finely-divided oblong fronds, 2 or 3 feet long, with the texture of a filmy Fern, but with the fructification of the present sub-order.

The two tropical and sub-tropical genera, *Lygodium* and *Marattia*, are each represented in New Zealand by a single species. The *Lygodium* is a climber, and at first sight looks more like a curious Hop or *Convolvulus* than a Fern. *Marattia fraxinea* was formerly plentiful in the Northern Island, and its great tuberous rootstock formed a favourite food of the Maories, but now the wild pigs have nearly exterminated it. The same species is spread all through Polynesia, Tropical Asia, and Tropical Africa, to the Cape of Good Hope. The un-Fern-like genus *Schizæa* is represented by two species, and *Ophioglossum* and *Botrychium* by two each. Our common British Moonwort, *B. Lunaria*, is one of the last additions to the New Zealand Ferns, having been found lately in small quantity in the province of Canterbury by Mr. J. D. Enys. *J. G. Baker*, July 16, 1893.

NEW OR NOTEWORTHY PLANTS.

DORSTENIA WALLERI, Hemsl., n. sp.*

THIS singular plant belongs to a genus little known outside of botanic gardens, though Philip Miller cultivated two species, or varieties of one as they are now regarded by some botanists—*D. Houstonii* and *D. contrajerva*, before 1748, and half-a-dozen species at least have been figured in the *Botanical Magazine*. The species nearest the present is *D. Mannii*, Hook. f., *Bot. Mag.*, plate 5908. Altogether about fifty species of *Dorstenia* have been described, and one only of these is a native of India; the rest being American and African, chiefly the former. Probably, however, many yet remain to be discovered in Africa, where the genus has developed greater diversity of form than in America. The great peculiarity of the genus *Dorstenia* is the inflorescence, which in the present species is both curious and beautiful, though not showy. The flowers, instead of being borne inside an almost closed receptacle, as in the fig., are crowded, male and female together, on the upper or outer surface of shield-like or cup-shaped, or sometimes even spike-like receptacle, which is often, as in the present case, furnished with appendages of some kind that may serve the purpose of attracting insects to aid in

* *Dorstenia Walleri*, Hemsl., n. sp. — Herba perennis, tuberosa, caulescens, erecta, circiter pedalis, primum plus minusve mollior pubescens demum glabrescens; caulibus simplicibus, solitariis, 4–8 lineis crassius, carnosius, infra medium squamis paucis parvis exceptis nudus; folia distincte petiolata, carnosa, ovata obovata vel ovato-oblonga, cum petiolo 2½–5 poll. longa, apice subacuta obtusa vel interdum rotundata, basi cuneata, obscure crenata, costa et venis primariis crassiusculis; receptaculum pedunculatum, pedunculo 1–2-poll. longum, saepe sub-orbiculare, 5-gonum, circiter 1 poll. diametro, margine multidentatum et processibus subulatis saepe 5 tentacula simulantibus ½–3 poll. longis instructum; flores masculini et feminei intermixti; ovario demum stipitato exserto. *W.B.H.*

the dispersal of pollen for cross-fertilisation. At all events, the males and females of the same head do not appear to be in a functional condition at the same time.

Dorstenia Walleri is a perennial plant with a tuberous stock, from which a single unbranched, erect, somewhat fleshy stem, springs annually, rising to a height of about a foot, naked, with the exception of a few inconspicuous scales below the middle and rather crowded with leaves above the middle. The oblong, or ovate, or obovate leaves, for they vary much in shape, are also rather fleshy, and, as well as the stem, are at first more or less beset with a fine soft pubescence, and vary from $2\frac{1}{2}$ to 5 inches in length. From the axils of the leaves spring the star-fish-like inflorescences borne on stalks about 2 inches long. Each of these inflorescences consists of a circular, usually 5-angled, saucer-shaped expansion of the top of the stalk, about three-quarters of an inch in diameter, with five tentacle-like appendages radiating from the angles, and from $1\frac{1}{2}$ to 2 inches in length. But the number of angles and "tentacles" varies in the specimens examined from four to eight. The flowers are at first immersed in the substance of the saucer-shaped part of the receptacle, but as the ovaries enlarge a stalk is developed to each, so that they appear above the surface, where they find more room for expansion. Between the "tentacles," the margin of the receptacle is furnished with numerous small teeth, which, as well as the "tentacles," appear to have glandular tips; but I have not yet had time to investigate their nature. Neither have I had opportunities for observing the position of the "tentacles" at different stages of development; yet I suspect that it varies. In *D. Walleri* they are curved upwards and more or less inwards at the tips at the time of flowering. In *D. Mannii*, a native of West Tropical Africa, referred to above, the discoid part of the receptacle is convex, and the ten to fifteen slender club-shaped "tentacles" are more or less recurved—that is to say, not all to the same extent. My idea is that a collection of living *Dorstenias* would afford material for some interesting investigations. So far as the records with the dried specimens inform us, the Rev. H. Waller, one of Livingstone's companions on the Zambesi, and the editor of his "Last Journals," was the first to discover and collect this species; hence I have named it after him. The specimens were communicated by Dr. (now Sir John) Kirk in 1865. They were collected in the Manganja hills, East Africa, in latitude 15° S, and longitude 35° E. Dr. Schweinfurth collected the same species in the Nyam-Nyam country, Soudan, in 1870. There is also a specimen at Kew, without special locality, collected by Mr. J. T. Last, and presented in 1883. Lastly Mr. J. Buchanan, C.M.G., collected it at Nakatupa, in the Shiri highlands, in 1881, and later in the same region, whence he sent seeds to Kew last year. It was from a plant raised from this seed that the foregoing description was drawn up. I ought to add that Dr. Schweinfurth gave a name to this plant under the generic name *Kosaria*, but I cannot find that it was ever published, and it is not available under *Dorstenia*, having been already applied to more than one species. *Kosaria* is hardly tenable as a genus distinct from *Dorstenia*. *W. Botting Hemsley*,

LELIA TENEBROSA, WALTON GRANGE VAR., *new var.*

A beautiful and distinct form of *L. tenebrosa* now appears, which differs greatly from the very dark and richly-coloured *Tring Park var.*, but is not less beautiful. The present variety has very large and well-formed flowers. The sepals and petals are each over 4 inches in length, the petals 1 inch wide, and the sepals and petals of a clear citron-yellow, without the least trace of the reddish hue seen in other forms of this species. The lip is white, closely striated and veined with purplish-crimson from the base, the middle area being also of bright purplish-crimson. The upper edges of the side lobes are white, and so also the tip of the labellum. Altogether it is a grand novelty. It flowered in the collection of W. J. Thompson, Esq., at Walton Grange, Stone,

Staffordshire, and in the care of that admirable grower of Orchids, Mr. W. Stevens, his gardener. *James O'Brien*.

CYPRIPEDIUM BELLATULUM VAR. *LUTEO-PURPUREUM*,
n. var.

Though similar to the typical form of *C. bellatulum*, it is very distinct in the colour, character, and disposition of its dark purple markings. The entire ground colour is pale apricot-yellow, the lightest portion being the under side of the labellum, where it merges into cream-white. The sepals and petals have fewer purple markings than the ordinary form, and the blotches are irregular in shape, and often run into each other; they are also confined to the inner two-thirds of each segment nearest to the column. The exterior of the labellum is unspotted, but the interior and the infolded side lobes have purple dots. The staminode is dotted with purple, and has a dark-green-coloured centre. It has flowered two years with G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester, who purchased it as a form of *C. Godefroyæ*, but it is certainly a *C. bellatulum* by virtue of all the slight characters by which that species was separated from the others of its group. *Jas. O'Brien*.

A TRAVELLER'S NOTES.

(Continued from p. 133.)

HIEI-ZAN.—The side I ascended was well clothed with vegetation, the magnificent groves of *Cryptomerias* all along the sides and ravines being most striking; *Violets* and *Epimedium* were freely flowering. The species of the latter I believe to be *macranthum*, though without any books or material for comparison it is difficult to be certain, and but little reliance can be placed on the native names, as one plant may have several names, and not infrequently one name does duty for more than one plant. The under-growth is largely composed of the low-growing "Maus Bamboos," so common in Central Japan, intermixed with which, at the base of the mountain were many of the common brick-red *Azalea*.

The summit of the mountain was bare, with the exception of low Bamboo, a state of things which continued for about the first thousand feet of the descent, a most abrupt and curious change from the side facing the lake.

The view from the summit was magnificent. On one side the lake, its shores, with the chains of low hills beyond; on the other, a panorama of the great ancient town of Kyoto, spread out in a fertile plain.

I arrived here (Kyoto) last night, since when it has rained with solid determination and with a consistency which forces admiration. There is no mistake when it rains in Japan, but when it ceases, it does cease, and the sun frizzles you up half-an-hour afterwards and continues to do so, until it again begins to rain.

The garden in Kyoto known as the Old Imperial Garden, which the Mikado used during the Shogun's power, is an interesting old place, but no longer carefully kept up.

It is not large, the main portion being occupied by a lake, so narrowed in the centre that a small stone bridge crosses it. In shape it is not altogether unlike an irregular figure eight. In the centre of one portion a small island on which are many young Maples, is connected with the shores by two quaint stone bridges, each beneath a thick arbour of *Wistaria*, now flowering, its long racemes and still longer shoots trailing over the sides and parapets of the bridges, reaching almost to the water.

The *Wistaria* is flat-trained on a Bamboo roof. I have seen many such specimens, that at Kameido near Tokio is probably the finest. It is impossible to convey an idea of the beauty of this plant thus grown, the many dozen spotless clear-blue racemes hanging down through the Bamboo support produce a charming effect, totally different to what it does in England. [See fig. 33 in the *Gardeners' Chronicle*, February 25, 1893.]

Round this lake, on undulating ground, are some fine specimens of trees, often overhanging and reaching to the water's edge. They are evidently of considerable age; *Ilex latifolia*, some 50 feet high is larger than I have ever seen it, and was flowering freely. Judging by the size of the specimens usually met with, I conclude this plant is of slow growth. *Pines* and *Oaks* were also fine, both have fine stems. *Photinia serrulata*, a common plant, and one much

used for hedges everywhere I have been, was also well represented, as was *Podocarpus* and *Salisburia* (*Ginkgo*), the young green leaves of which are just now very pretty. *Camellia japonica*, *Eriobotryas*, *Ilex integra*, *Cherries*, and some lovely flowering bushes of double *Kerria*, were all to be seen on the lake shores.

The finest specimens in the garden were those of a deciduous tree, I believe it to be *Aphananthe aspera* of the *Ulmaceæ*. My guide examined the people in the garden about it, and elicited this satisfactory information: "It bears fruit after summer." I suggested this was not unknown, when the equally surprising statement, "It fruits before the winter," was made, with such a touching politeness and an air of such profound conviction, that I really had to give it up. It is a tree of the noblest proportions in every way, though the individual foliage is small.

From a bridge (known as the bridge communicating with heaven) in a Monastery of the Zeu sect, one looks down upon a lovely gully, famous for its Maples. I went to see this—a really pretty spot. Round these temples, as well as growing wild on the hill-sides, the Maples and Oaks are now generally pretty, also *Diopyros Kaki*, *Photinia glabra*, *Cherries*, *Elaeagnus*, and *Wistaria*; whilst of flowering plants in bloom, I have recently noticed *Viburnum plicatum* (very good), *China Roses* (most free), *Cercis siliquastrum*, *Caragana arborecens*, and *Thermopsis fabacea*. Tree *Pæonies* are coming on; those which have received a certain amount of protection, such as a slight awning, being now in flower. I certainly notice nothing I have not previously seen—a fact scarcely to be wondered at, I suppose.

The gardens of the Monasteries *Kinkakiyi*, *Ginkakiyi*, and *Nishi Honjwanji* are fine; the latter is the largest monastery and temple in Japan, as well as being one of the wealthiest. Its paintings are famous; some rooms contain paintings of only geese, others of peacocks, whilst one of the most striking has its sliding screens decorated with Bamboo and sparrows. The largest of all has a Pine, stretching from one screen to the other, carried along the whole of one side—it is wonderfully done, even the grey scabs on the bark being reproduced. Perhaps the most interesting of the three gardens is that adjoining the first; though I must not forget to mention that in front of the large and magnificent temple *Nishi Honjwanji* is an "Icho" (*Salisburia*), credited with the power of extinguishing fire, and said to be the largest in Japan; it certainly is not the highest, not reaching 50 feet, but its spread of branches is very great.

The Chinese garden behind the *Kinkakiyi* Monastery is from 400 to 500 years old, and most prettily situated. It contains a lake, in which are some huge carp and red-fish, a golden pavilion, and a curious Pine in the form of a junk. I was asked to guess the age of this tree, and put it at 200 years, but a priest said it was over 300. The main trunk forms a mast, two leading branches, leaving the main stem in a line, forming the hull, about 35 feet long; the tree is scarcely as high. All the remaining branches up the main stem have been pruned of foliage for about 1 foot from the trunk, and what is left at the end being trained in circular form. For so many years has this been done, that the present foliage and young shoots rest on quite a thickly interlaced network of old wood.

The garden and the islands on the lake are chiefly planted with *Pines*, *Acers*, and *Azaleas*, in excellent taste. In the courtyard before the monastery is a fine specimen of an evergreen Oak; the priests call it "Ichii"—*Quercus Gilva*. The stem is 4 feet in diameter, straight and even, the head round and symmetrical, the whole reaching some 45 feet.

About 10 miles due south from Kyoto is the village of Uji, surrounded by Tea plantations, long famous as producing the finest Tea in Japan. The Tea-plant is cultivated in a way different to what I have seen elsewhere. Only in one instance did I notice separate plants; in nearly all the fields, the plants in the rows, ranging from $2\frac{1}{2}$ to $4\frac{1}{2}$ feet high, were so old and so intergrown, that each row was a thick hedge several feet through. Picking commences the second week in May, after which the Tea is cleaned over by girls in the peasants' houses, and then subsequently rolled between coolies' hands. There are, of course, no great drying or cleaning establishments; each peasant's house works independently in a small way. Many fields were entirely covered by straw-mats, on a low scaffolding of poles. If looked at from above, such as a high part of the road, one looked down on several acres of mats. I judge this was done owing to the plants having reached a picking stage; but it being impossible to

go over all the fields at once, the owners desired to retard the further growth of the young shoots. Rain and sun were excluded, and, as far as possible, all light, for even from the roof of mats a row hung down all round each field, the tops of the plants being hidden from view. One of the choicest kinds is the Gyokuro (Jewelled Dew), varying in price from 5 to 7½ dols., equal to 14s. 3d. and 21s. 3d. The Uji plantations are said to date from the end of the 12th century, though it is believed Tea was introduced to Japan from China by a Buddhist Abbot—Dengyō Daishi—as far back as the year 805. *James H. Veitch.*

(To be continued.)

ORCHARD TREES AND THE PRUNING OF ROOTS.

FROM the correspondence on this subject which has recently appeared in the *Gardeners' Chronicle*, anyone unacquainted with the subject and the notions of gardeners concerning it would still be in the dark as to what the various writers mean. He would first ask, Why do the gardeners want to cut off the roots of the trees that are to bear the weight of a crop of fruit, a heavy crown of leaves and branches, and withal keep in an erect position? He would also suppose that it would be bad practice to follow in any but the most sheltered gardens, for the wind would surely overturn any tree when denuded of its anchors. Then, again, he would remember that the old orchard trees—the moss-grown, gnarled old fellows—Apples or Pears, down in the west and south, numbering may be from 80 to 100 years, were never root-pruned at all, and yet these in their prime bore heavy crops of cider, dessert, or kitchen fruit. These old orchard trees, worn out by years of bearing, are the bogeys wherewith the men of root-pruning proclivities scare the young men, and even urge old hands who should know better, out of their well-tryed courses. The root-pruning enthusiasts say, "See what the neglect of root-pruning, of surface-feeding, of mulching has done," and the rank and file are inclined to believe them.

Some writers seem to labour under a confusion of ideas, as when they write of root-pruning, it is the garden bush, pyramid, half-standard, or espalier on dwarfing stocks that is meant. These must be checked in growth, or they would soon grow out of bounds or not fruit at an early part of their existence; and nothing does this so well as transplanting and a small amount of simultaneous root-pruning, if the latter should seem to be desirable. But who with any proper conception of the cost would enter on the operation of root-pruning an orchard, say, of several acres, with trees standing, say, at 30 feet apart, *i.e.*, 48 trees per imperial acre? The thing is ridiculous, and the sooner our writers recognize that it is so the better.

Mr. P. Crowley's story of his orchard (garden?) trees with roots cut in to a square of 4 feet, or a circle with a diameter of 4 feet, beats the lot. If a gardener wished to remove his trees with balls of earth (also unnecessary) of small compass, he would set about it in Mr. Crowley's manner. He would dig out a trench, say 1 foot wide, round the trees, as deep as the roots descended, cutting a straight wall of soil on either hand, severing every root that reached further than 4 feet, throwing out all the soil to the very bottom. The trench would then be filled up with leaf-mould, garden refuse that had been charred, and some of the staple soil, the whole being well mixed together and trodden firmly as layer by layer it was thrown into the trench. This work would be performed in the autumn, and by the following autumn the tree would be fit for removal, with myriads of small roots thrust out into the fresh soil in the trench. This new soil would mostly fall away, but the roots would remain ready to seize upon the fresh materials in its new station. Again, provided that an orchard of Apples, Plums, Pears, Cherries, Walnut La Vertilis, Quinces, Medlars of whatever varieties, worked or unworked, as would be the case most likely with the last two, is properly planted on a suitable site, but little is

needed beyond the proper formation of the head at the first by judicious pruning, and subsequently the keeping the same clear of weakly shoots, with an occasional shortening back of the leading branches to fill out the increasing circumference of the crown. The roots may in some measure be kept at the surface by surface mulches, but the main roots will and should descend, therefore the more need of a deep soil and deep trenching or stirring of the same. The use of the dwarfing-stock premises three things—root-pruning and triennial transplantation, and summer pruning. But this is garden work, not orchard; *petite culture*, not wholesale culture; the aims and methods differing accordingly. Some of the writers in the *Gardeners' Chronicle* have been thinking of orchard trees, but writing of the trees and bushes of the garden. Notable exceptions are "Extension" and "E. M.," who seem to have got the right grip of the subject. X.

COLONIAL NOTES.

BOTANIC STATIONS.

(Continued from p. 152.)

ANTIGUA.

THE "low flat island" is found to be well diversified into mountain, hill, and plain, with beautiful and extensive views in all directions.

The rainfall on the island is, however, small, and the vegetation is not of that luxuriant character which is frequently associated with tropical islands. Great parts of the surface are covered by the thorny scrub so characteristic of the Antillean geographical region. This is made up of different kinds of Acacia, with *Furcraea* and *Agaves* at intervals, and, in some parts, several forms of Cactus, and quantities of the wild Balsam (*Cascarilla balsamifera*). Along the coast are fringes of the bright green Maachineel (*Hippomane mancinella*), and the lagoons and swamps are crowded with various *Avicennias* and *Mangroves*. The Tamarind (*Tamarindus indica*), and Lob-lolly (*Pisonia subcordata*), Turkey-berry (*Cordia alliodora*), and White Cedar (*Tecoma leucocylon*). Turpentine tree (*Bursera gummifera*) and Sand-box (*Hura crepitans*) appear to be perfectly at home; while the Mahogany (*Swietenia mahagoni*) and Logwood (*Hæmatoxylon campechianum*) are of slower growth, and more or less stunted. There are few Palms, but the ordinary Cabbage Palm (*Oreodoxa regia*) appears to be well adapted to most parts of the island. A Fan-Palm (*Sabal Blackburniana*) grows well in certain parts, particularly around Parham; while the African Oil-Palm (*Elæis guineensis*) is established in the neighbourhood of Wallens and Body Ponds.

As long as sugar is the staple product of the island, it is not probable that tree-planting will be taken up to any extent, since it appears to be accepted that trees are inadmissible in or near cane-fields.

The main line of action of the Botanic Department has been to discover what plants are best suited to the dry marl region—especially in the direction of folders, fibres, vegetables—to decide what more luxuriant forms may be safely grown in the more sheltered hill and valley region of the south-west; and finally, to improve the fruit-market of the eruptive tract generally, and to introduce other economic plants specially suited to this region.

The principal botanic station on Skerritt's Estate, in the drier part of the island, has been supplemented by one at Body Ponds, and another at Copse Cross, near English Harbour. The Body Ponds plot lies at the north-east margin of the eruptive region, and represents from its water supply and general position the sheltered valleys suited for Cacao and Nutmegs; while that at Copse Cross is a sample of the Pine-apple region of the south. Stations will be considered in greater detail further on.

The Botanic Station at Skerritt's is situated about a mile to the east of St. John's. The site selected was fixed upon because it is the only spot upon the estate which has the advantage of even a moderate supply of water.

The soil is heavy, but it is good and deep. Without doubt, a sufficient quantity of work in tilling, the continued application of manure, and a suitable system of irrigation, would bring the soil into fine condition, and render it capable of growing almost anything. But the site is much swept by the wind. The construction of a shelter-belt is of the utmost importance. The wind, coming direct from the sea, about 3 miles away, sweeps along the dry hill-sides clothed in scrub, and makes it exceedingly difficult to grow anything in the open.

Great quantities of drought-loving fibre plants, such as the Mauritius Hemp (*Furcraea gigantea*), the Snake Grass (*Sansevieria lanuginosa*), *S. guineensis*, Sisal Hemp (*Agave rigida* var. *sisalana*), have been grown and planted out. At the other extreme, Grapes, Figs, Mangoes, Bananas, Oranges, have been steadily and successfully propagated; and in spite of the peculiarly unsuitable conditions, the grafting of Mangos has been distinctly successful. The supply of manure has been a source of anxiety ever since the founding of the station, because a good mechanical manure is perhaps more needed than anything else for getting the land into good heart. The soil is good, but heavy.

The necessity for carrying all the water by hand is a serious drawback. This has rendered it, so far, impossible to make the shelter-belt grow rapidly. The shelter-belt consists of Mangoes, Almonds, Mulberries, Red Cedars, *Eucalyptus*—all of which are growing, although slowly.

A great deal of work has been done in connection with fibre. The progress of the various plants has been very satisfactory, propagation has been extensively carried on, large quantities have been distributed, and a large stock is in hand for future demands.

The plants in the trial plot of *Furcraea cubensis* (recently determined to be really *F. gigantea* var. *Willemetiana*) have grown rapidly. The plot was sixteen months old in December, 1891, and the height of the plants was 4 feet. This growth was unexpected, and would suggest an earlier crop than usual; but it is not yet possible to determine whether the growth is not too rapid for the formation of good fibre. Seventy-one thousand and three hundred plants have been sent to Anguilla, for the establishment of a trial fibre-plantation there. The fibre of *Sansevieria lanuginosa* (Snake Grass) has a great future before it.

(To be continued.)

MORMODES PARDINUM VAR. UNICOLOR.

OUR illustration (fig. 34, p. 181) gives a representation of the yellow unspotted form of *Mormodes pardinum*, illustrated in the *Botanical Magazine*, 67, t. 3879, but which is commonly known in gardens as *Mormodes citrinum*, the typical spotted form being illustrated in the *Botanical Magazine*, 68, t. 3900. The self-coloured form has been rare in gardens, until a recent importation by Messrs. F. Sander & Co. proved very prolific in this variety.

Most of the species of *Mormodes* exhibit great varieties in colour, perhaps the most variable being *M. buccinator*, which varies from nearly white up to chocolate coloured, the various forms being either spotted or unspotted.

Mormodes and the other genera usually associated with them, viz., *Catasetum*, *Cynoches*, &c., have of late received more attention in gardens than formerly; perhaps because their culture is now better understood. They are easy to cultivate if it is observed to give them a rest in a tolerably cool dry house after the leaves by their withering, together with the mature appearance of the last-made growth, have indicated that the season of rest during which they are to be kept cooler and quite dry, has arrived.

NURSERY NOTES.

MESSRS. SUTTON AND SONS, READING.

To such an establishment as the above a visit is interesting, at whatever time of the year it may be made, and at this season the especial attraction is the florists' flowers in the trial and seed-grounds and glass-houses. We cannot speak too highly of the excellence of the strain of *Gloxinias*, which are plants of splendid habit, faithfully responsive to the special skill that is lavished upon them. It was these, together with *Begonias* and *Achimenes*—of which more hereafter—that were the objects of our particular notice.

If we mention *Gloxinias* first, it is because of the reputation that Messrs. Sutton have already gained by such first-class seedlings as Her Majesty and some others. Perhaps the most important points in a good and useful *Gloxinia* are these—large handsome flowers, with flat open mouths, much substance in bloom to ensure good lasting capacity, self-supporting stems, a floriferous habit, strong constitution, and as pretty and good-habited foliage as can be secured. In the case of coloured varieties, delicate markings, and attractive and pleasing colour. The collection under notice possesses many of these properties to a large extent, some of the seedlings rapidly approaching an ideal *Gloxinia*. There are the pure whites, the spotted types, the feathered flowers, the pencilled and the tigered kinds; all are well represented by seedlings which show considerable advance even upon those of recent date. Any description of the splendid white, Her Majesty, is now uncalled for, it being very generally known, but we may add concerning it that it is still distinct and desirable, and will be so for some time yet. How-

ever, this variety with such substance in the flower was crossed with one of the French type, and the offspring is now in bloom. Perhaps it would not be fair to Her Majesty to say that the one in question is superior, but to our own taste we admit that the seedling is preferable. It is a milky-white, a prettier,

this flower might easily have been less expressive; it was this—"White Princess May, with a beauty spot of rose upon her cheek." The variety that bears the name of the Duke of York is a typical florists' flower; its throat is of scarlet, and has a pretty white margin. Empress of India is a handsome

rous varieties, mostly seedlings, of six months old, and blooming in profusion. The strain is an excellent one, and every endeavour is made to still further improve it. The trade in these Begonias is chiefly in the seeds, which are sold in packets. The catalogue of the finest varieties raised from cuttings



FIG. 34.—MORMODES PARDINUM, SUB VAR. CITRINUM: FLOWERS YELLOW. (SEE P. 180)

flatter bloom, and larger. These characteristics, of course, are such as we might expect from the cross, and if a little of Her Majesty's substance has been lost, it is but little, and this in subsequent crossings will most likely be restored. Princess May many will remember seeing at the Temple Show; it is a lovely flower, white, with rose spot upon the petals. A description we heard applied to

flower of dark violet-purple, and of first-rate substance. Another one, and which is said to be a "hark-back" from a pure white, is a very fine blue flower, has a large throat, and splendid margin; its habit is good. The collection of these fine showy flowers, in perfect condition, and blooming profusely, and in great variety, is alone well worth a visit.

Begonias.—Several houses are filled with tube-

is specially limited in extent; consequently, whilst we can give credit for excellence in the stock, it will not be necessary to specially describe particular varieties. The many different forms that this flower assumes, in its remarkable mimicry of other flowers, are all found here; and every colour and tint at present observed in Begonias may be obtained. Our attention was attracted by groups of a variety called

Prince of Orange, and another, Queen of Whites, which had been raised from seed, because of the faithfulness the seedlings bore to the type.

Messrs. Sutton have paid very considerable attention to the semperflorens groups of the fibrous-rooted Begonias, and have raised a family of winter-flowering varieties that are already enjoying a wide reputation. We have in previous notices referred to the history of these gems, and must therefore confine ourselves on the present occasion to merely a mention of the names and desirable characteristics of these plants, for winter furnishing specially, and in some cases for bedding in the summer. Snowflake is pure white, surprisingly floriferous, and of excellent habit; it was sent out some few years ago. Duchess of Edinburgh is a charming plant; its flowers are white, suffused with pink or rose, exceedingly chaste looking, and delicate in tint. Duchess of York is all rose, a pretty companion to the others. Coral Gem is one that justifies its descriptive name. The last we shall mention is Crimson Gem, and perhaps it is difficult to say in which capacity it most excels—in its adaptability for winter decoration, or its remarkably handsome qualities as a summer bedder. For both purposes it will give real satisfaction, and when bedded, the foliage assumes nearly the same colour as the flowers, compact and even in growth—it will always command attention.

Achimenes.—With the large flowers of pretty colours that have now been raised, these are worthy of much more extended cultivation than they have. They do not require the heat that is necessary to grow the Gloxinias to perfection; a cool structure, from which the frost can be excluded during winter being all the protection that is essential. Many gardeners start their plants in too much heat, and they are unable afterwards to stand any appreciable change of temperature.

Amongst the older varieties of the longiflora type Margaretta is a very fine one, having a large tube of good substance, and pretty paper-white in colour. Celestial is a pale mauve flower, very delicate. Alba maxima, or the real white longiflora, is large and pure; then there is longiflora major, a blue one, that at one time was considered a decided advance upon the old mauve, and a new seedling, shown at Chiswick show this season. The colour of this seedling is blue, but—and especially as the flowers open—a darker shade than the variety l. major, and the under sides of the leaves, which in the major are green, are tinged much with red. In the group of Gloxiniaeflora or Chirita type, the now comparatively well-known Rosy Queen is by far the greatest success achieved. To any who may not have seen it, it would be a revelation; its large flowers much resemble the Gloxinia, and they are of such lovely rose it is unique and beautiful. The coccineaeflora type is best represented by Dazzle, a very fine bright flower with flat broad petals, and extremely floriferous habit. Other and older varieties that are yet desirable must include Ambrose Verschaffelt, Lady Lyttleton (rosy-cerise), Dr. Hopff, and some others.

The Trial Grounds.—These extensive grounds, covering some 60 or 70 acres, and entirely devoted to the purpose of testing new varieties of flowers and vegetables, fully demonstrate the great efforts made by the firm to ascertain the exact character and worth of anything new, before it is taken up and recommended to the public. As an instance of the magnitude of the work and the mass of detail there must be to look after, it is sufficient to state that during the present season there are 597 kinds of Peas being tested side by side, 210 of which are seedlings. The annuals and plants generally here tell the same tale as most other places, of long unsatisfied thirst during the time the plants should have been making their growth. However, it is interesting when so many plants are side by side to notice the very different degrees in which some of the plants have been able to resist these unfavourable weather conditions, as affording some indication of what are the best subjects for a hot, dry position—and the worst. Clarkias, for instance, were nearly a com-

plete failure; and Poppies were bad and blighted, if we except the Shirley varieties, which were blooming freely, and had covered the beds. Eschscholtzias in several varieties, on the other hand, were looking extremely well, and contributed the gayest picture to be seen here. Calendula Orange King was very showy; and large beds of Alysium minutum were pretty and attractive. One of the best plants for a season such as the present has been is, no doubt, the Portulaca, and the colours are so brilliant and varied in the double and single varieties, we shall not readily forget what a splendid sight they were on a warm border in the nursery grounds. The seed should not be sown upon dry ground.

Petunias, always done well here, had not suffered so much as many plants, and were looking fairly healthy, and blooming profusely. All the different forms and colours, single and double, are included in the collection.

HEATING PLANT-HOUSES.

BEING about to erect a new range of plant-houses, I have been, like many others, troubled about the selection of the best method of securing equal heating without the pipes being a nuisance. As my previous experience has led me to doubt the laws laid down by the so-called "practical man," and with the object of obtaining some reliable data, I have made a series of careful experiments which give results well worthy of serious consideration. To prevent doubt as to correctness, the six thermometers used were all tested and verified by a Kew standard instrument, and their positions were exchanged twice during each experiment.

The first house tested is one 21 feet by 19 feet by 16 feet to ridge; S.W. aspect, built against two walls at right angles to each other. The heating arrangement is a close tank 9 feet by 4 feet by 3 feet, sunk below the wall at one end, no pipes being used; the tank at its nearest point is 3 feet away from the outside wall, and the greatest distance between the tank and lowest part of the glass is 15 feet. The tests were made in a driving snowstorm, and again in a calm frost.

During the snow-storm one thermometer behaved in an erratic manner, varying fully $1\frac{1}{2}^{\circ}$ F. without apparent reason; but I found the cause was a leakage of cold air through an imperfectly-closed casement. This was prevented, and the tests were again repeated.

POSITION OF THERMOMETERS.

1.—4 in. from glass, 15 ft. from tank, 3 ft. from floor.	
2.—2½ in. " 4 ft. " 2 ft. "	
3.—3 in. " 5 ft. " 6 ft. "	
4.—12 in. " 4 ft. " 5 ft. "	
5.—8 ft. " 1½ ft. " 2 ft. "	
6.—Outside temperature, 31°.	

The temperature registered by No. 1 was 49°; No. 2, 49°; No. 3, 50°; No. 4, 49°; No. 5, 50°.

It is abundantly evident from the above that the theory of equal distribution of pipes to insure equal heat is a mistake, and that the heat will equalise itself without any assistance. To verify this in an independent way, I repeated the experiments in my cucumber-house, which is a lean-to surrounded with pipes, the front ones near the glass, and with pipes under the beds on both sides. The heating of this house is supposed to be perfection, having been carried out at a considerable expense in the newest and most approved manner, and I was very much surprised to find a difference of $8\frac{1}{2}^{\circ}$ between a thermometer 3 inches from the glass and one in the centre of the house, the readings being:—

3 inches from glass at side	60½°
Centre of house	69°
5 inches from inner wall	65°
Outside	31°

For the sake of precision, it may be stated that in the tank-experiments all the measurements are horizontal distances taken at the floor level; the extra distances caused by differences in vertical level were not taken into account, there being no appreciable difference in readings at different vertical levels. It would appear that the best system of heating is not the one with cumbrous pipes, which are

such an eyesore and a nuisance in most houses, and that far better results can be obtained by close tanks placed anywhere out of the way, and I shall adopt this method, to the exclusion of pipes as far as possible, in the five houses I intend to erect.

HOW TO TEST THERMOMETERS.

Some of your readers may like to repeat the experiments, but object to the expense of half-a-dozen standard verified thermometers, but it is an easy matter to obtain the corrections for any number of common thermometers in the two parts of the scale necessary for the tests. Obtain a wide-mouthed jug holding 1 to 2 quarts, wrap it round with a towel or flannel, and half fill it with a mixture of snow or ice and water; place all the thermometers in this, and allow them to stand 15 or 20 minutes. The difference between 32° and the reading will give the error of each thermometer at freezing-point. When this is done, half fill the jug with water, very slightly warmed, and replace the thermometer, allowing the whole to stand until the temperature falls to the required point, and again take the readings for the error. Of course, in this test all the thermometers may be incorrect; but this is of no importance, as the difference only of the temperatures in different parts of the house requires to be found. The absolute temperature is not required to detect irregularity in different parts of the same house. The testing of each thermometer is necessary, as it is no unusual thing for even expensive thermometers to vary from 3° to 5° from the true temperature in different parts of the scale. *Thos. Fletcher, Grappenhall, Warrington.*

SWEET PEAS.

MR. HENRY ECKFORD is unwearied in his endeavours to augment our list of varieties of Sweet Peas, and in doing so he has placed in the hands of lovers of flowers a mass of beauty with which to beautify the garden, as well as ample material from which to cut; and it is interesting to note that while Mr. Eckford, by means of intelligent cross-fertilisation, has given us colours and combinations of colours undreamt of in Sweet Peas a quarter of a century ago, the exquisite perfume of this old favourite remains the same, and its habit of growth is not in the least degree changed. With new colours have come also increased size and substance in the blossoms, which is the natural development of most flowers when they are taken in hand and improved.

Until Mr. Eckford commenced the process of cross-fertilisation with Sweet Peas, any new introduction had been apparently the result of sports, or, as in the case of the Invincible Scarlet selection, Mr. Thomas Laxton has helped in the work; but to Mr. Eckford is mainly due the production of new and distinct varieties. As a matter of course, when new forms are produced in quick succession, there is always the danger of sameness, and though some varieties have been sent out which appear at first sight nearly to resemble each other, yet on a close inspection they are found to be really distinct. The latest novelties shown by Mr. Eckford seem to point to decided improvements in our striped varieties, while some are densely spotted or punctured, and such are welcome novelties. But in all the new introductions there are some that do not find the marked favour that others do; at the same time it should be noted that all are more or less admired, and that what one deems weak another considers to be beautiful, and so all are admired.

Ten new varieties were shown by Mr. Eckford at the last meeting of the Royal Horticultural Society, viz., Eliza Eckford, the standards a pretty hue of rose, the back of the standard having a vertical bar of deep rose, the wings delicately striped with rosy-pink—a very pleasing and attractive variety (Award of Merit); The Belle, the pale standards and wings heavily flaked with rose—a very distinct and charming variety (Award of Merit); Blanche Burpee, standards and wings creamy-white, flowers large and stout in texture; Countess of Aberdeen, white,

delicately tinted towards the edge of the standards with the softest pink, the wings blush—a very pretty variety; *Excelsior*, the standards shaded orange-red, the wings magenta-red, rich and bright in colour, large and stout; *Lottie Eckford*, the reverse of the standards deep mauve, paler on the surface, the wings white beaded with soft mauve; *Meteor*, standards bright deep orange-salmon, the wings delicate pink, with slight veins of purple; *Mrs. Chamberlain*, white striped, and heavily flaked with bright rose—very striking and pretty; *Novelty*, orange-rose standards, the wings delicate mauve, and lightly margined with rose—very bright; and *Princess May*, white, striped and flaked with delicate pinkish-purple.

Of varieties recently distributed, Mr. Eckford had the following in bold bunches:—*Venus*, salmon-buff, and rosy-pink, very distinct; *Emily Eckford*, cerulean-blue, and reddish-mauve, one of the very best of the blue Sweet Peas—extra fine; *Gaiety*, a very pretty striped variety, white, striped and flaked with bright rosy-lilac, the wings delicate blush—very distinct; *Fire-fly*, intense crimson, a fine self flower; *Duke of Clarence*, also a self, colour rosy-claret, the wings shaded with violet; and *Blushing Beauty*, soft pink, suffused with lilac, a charming variety.

Of older types, the following are very attractive:—*Mrs. Eckford*, primrose; *Dorothy Tennant*, puce-violet, very fine; *Lemon Queen*, delicate blush-pink and lemon; *Senator*, striped, and flaked with violet, very fine; *Captain of the Blues*, bright purple-blue, very fine; and *Princess Victoria*, dark cerise, and mauve-pink, very pretty.

We do not employ the Sweet Pea sufficiently for autumn sowing, either for blooming under glass, or for planting out in the open, to flower long before the spring-sown plants can do so. By sowing Sweet Peas in pots at the beginning of September, having at most three plants in a 5-inch pot, and keeping them in a cold frame all the winter, they can be had in bloom quite early in the year under glass, when they are found most useful to cut from. By sowing in autumn in the same way, and wintering in a cold frame, and the plants put out in the open as soon as it is safe to do so, and planted in rich soil, each one being allowed ample room, the Sweet Pea will grow to a large size, and bloom much more freely and finely than those raised from plants the seeds of which are sown in the open in spring. It is only when Sweet Peas are grown as single plants in good soil that anyone can be made to see how amply they branch, and what bushes they become. *R. D.*

COLEUS TUBEROSUS.

Our figure is taken from a tuber presented to the Chiswick Garden of the Royal Horticultural Society, by the Director of the Royal Gardens, Kew. Its general appearance is sufficiently well indicated by the figure. The colour is a dull red, like, but not so deep as that of Beet. According to the *Potager d'un Curieux*, the tubers were introduced into France from the Transvaal under the name of *Matambala* in 1884, with the information that the tubers were cultivated and utilised in the same manner as Potatoes. The plant seems readily propagated, either by tubers or by cuttings, but it requires too much heat to be profitably cultivated in our climate. It seems likely, however, to prove a very valuable introduction to our tropical and subtropical colonies. M. Pierre, to whom tubers were sent from the *Jardin des Plantes*, by Max. Cornu, has employed it in this way with great success at Libreville, Gaboon. The plant grows with great vigour in the rainy season; in the dry season June to October it grows, but requires water to enable it to produce its tubers. It is during this period that it produces its flowers. The crop is dug in December and January. An allied plant, of which little is known in gardens, is the *Plectranthus madagascariensis*, a tuberous Labiate, cultivated in the Mauritius, in Madagascar, and the eastern coast of Africa.

BEDDING IN HYDE PARK.

It is pleasant to observe a welcome change from the formal type of bedding-out formerly in vogue in this park, and to see the plants disposed in a more diversified and bolder manner. The introduction of larger numbers of fine-foliaged plants, as Palms, Grevilleas, Bamboos, Eucalyptus, Erythras, Cannas, in bold groups, diversified by flowering plants, is a change in the right direction which Mr. Browne, the park superintendent, has brought about.

Particularly striking just now in a series of beds commencing at Stanhope Gate is one the centre block of which is composed of *Carnation Alice Ayres*, carpeted with *Lysimachia nummularia aurea*, and edged with *Viola lilacina*—a happy combination; very good also is a bed of the salmon-coloured *Pelargonium Omphale*, carpeted with *Viola lilacina*, outside that a band of *Iresine Lindeni*; finally, an edge of a white flowering *Lobelia erinus*. A very rich bed is one having as the centre the popular *Henry Jacoby Pelargonium*, carpeted with *Viola Mrs. Turner*, banded with *V. lilacina*, and edged with *Lysimachia nummularia aurea*. White-flowering *Pelargonium Aspasia*, carpeted with *Viola lilacina*,



FIG. 35.—TUBEROUS COLEUS. (Real Size.)

having a band of *Pelargonium Creed's Seedling*, and edged with *Lobelia Crystal Palace compacta*, forms a good bed. On either side of the South Street Gate entrance to the park, is a group of *Pelargoniums*, one crimson, the other salmon, plunged in the grass, and which have a good appearance.

The next run of beds from South Street Gate is planted with taller growing plants, two being planted with light Fuchsias, *Mrs. Marshall* and *Lustre Improved*, with *Lilium lancifolium* between, and carpeted with *Viola Beauty of Chipping Norton*, having a band of silver *Pelargonium*, and an edge of *Viola lilacina*. Two other good beds are planted with *Ivy Pelargonium Madame Crousse* and *Galilee*, both being carpeted with a mixture of *Violas*, and bordered with white *Lobelia*. The centre bed in the series is planted with quite a new thing for bedding purposes, to wit, *Maurandya Barclayana*, which is trained up sticks, in the shape of a pyramid, with its pretty purple flowers intermixed with the old *Calceolaria amplexicaulis* trained in the same way; the effect produced by this combination is a pleasing and happy one.

At the rear of these beds there are groups of Palms, Eucalyptus, Heliotropes, and *Plumbago capensis*, giving a bold and effective finish to the

whole. Next is a large group of crimson *Pelargoniums*, which look rich, plunged in the green grass.

Continuing on the east side of the walk there is another run of beds. Very pleasing is a small circular bed planted with *Fuchsia Dunrobin Bedder*, a pretty little flower of the *Riccartoni* type, but dwarfier; it is edged with *Pillar of Gold Fuchsia*. A pretty bed is planted thus:—Centre, pyramidal Fuchsias, *gracilis variegata* and *Beauty of Exeter*, planted alternately, the carpeting beneath being *Alternanthera magnifica*; "dot" plants of scarlet-flowering *Begonia*, edged with *Lobelia Earl Beaconsfield*. A bed planted with *Lobelia cardinalis*, carpeted with *Viola Mrs. Turner*, will make an effective one later. At present, it is rather dull. A very showy bed is one of *Petunias*, with *Begonias* between, carpeted with *Alternanthera aurea*, and edged with *Viola Ormonde*. We now come to rather a pretty bed, planted with *Ivy-leaved Pelargoniums* and mixed *Carnations*, carpeted with *Alternanthera magnifica*, having a band of *Phalangium variegatum*, with an edging of *Veronica incana*. Still going east, we have two very telling beds planted with *Ivy-leaved Pelargoniums*, *Souvenir de Charles Turner* and *Henry Cannell*, having *Liliums* and *Zinnias* planted between them, carpeted with *Alternanthera magnifica*, and edged with *Lobelia Blue King*. A very pleasing bed is that planted with short standard Fuchsias, *Begonia heracleifolia*, with the tuberous varieties, carpeted with *Alternanthera aurea*, and edged with *Mesembryanthemum cordifolium variegatum*. There are two beds of *Heliotrope President Garfield*, with *Nicotiana affinis* planted between, the two flowers contrasting admirably. Another bed is planted with *Ricinus Gibsoni*, carpeted with *Alternanthera aurea*, having plants of *Tropæolum Double Orange*, and the single scarlet, which make a pleasing mixture. The whole of this run of beds is divided by a specimen Palm between each, backed up by pyramid Fuchsias.

Starting again at the Elm tree, there is a double row of beds planted in pairs. A reference to a few of the more noteworthy amongst them: A large circular bed, planted with specimen *Heliotropes* and standard Fuchsias, carpeted with *Alternanthera amabilis latifolia*, with *Phalangium aureum* dotted between, the whole being edged with *Viola lilacina*. This bed is flanked on either side with some specimen Eucalyptus and scarlet *Tropæolums*, trained in pyramidal shape.

A good show is made by four *Begonia* beds—crimson—with a carpet of *Lysimachia nummularia aurea*, edged with *Fuchsia Meteor*.

At this point occur the only two carpet-beds planted this year. They are, and deservedly so, going out of fashion!

The set of double beds situate a short distance from Grosvenor Gate are planted with a broad band of edging plants consisting of *Violas*, *Lobelias*, *Fuchsias*, and *Veronica Andersoni*, some very effective arrangements being observed amongst them. Very pretty is a circle planted with *Ficus elastica*, *Begonias*, *Phalangium aureum*, and double crimson *Tropæolum* dotted in a carpet of *Alternanthera versicolor*, edged with *Alternanthera magnifica*.

Between the whole of these double-beds are arranged groups of *Bambusa* and *Eucalyptus*, intercepted with specimen Palms.

It is quite worthy of record that there are a great quantity of *Violas* used in the bedding arrangements this year, which tend, without doubt, to add a charm and beauty when thus associated. Considering the dry season passed through, they look remarkably well.

There is a row of beds between Grosvenor Gate and the Marble Arch which are somewhat out of the notice of people passing through the park; these look very gay, being planted with *Pelargoniums*, *Fuchsias*, *Violas*, &c.

One border near Marble Arch is worthy of special mention. It is planted in panels of *Pelargoniums* and *Calceolarias*, which at the present time are making a gay display.

The well-known dell at the east end of the Ser-

pentine is looking well, Dracænas and Ferns giving it quite a tropical appearance. A mixed border on the south side of the Dell, facing Rotten Row, presents a very gay appearance; it is planted with *Antirrhinums*, *Pentstemons*, and *Gaillardias*, having some specimen plants of *Fuchsias*, *Tropæolums*, and *Marguerites*. *J. B.*

CULTURAL MEMORANDA.

SPIRÆA JAPONICA.

This is one of those old but none the less valuable plants that with but little care and attention may be made to flower well, and at almost any time during the early months of the year. True, it is common, and probably on that account has lost favour with some; but still it would be very difficult to fill its place for many purposes. To grow and flower the *Spiræa* well there should be two lots of plants, so that one lot may have a season's rest, for if the same plants be forced year after year, they seldom produce flowers in true character. During their growing and flowering seasons the plants should be well supplied with water at the root, and afforded nutriment. After blooming is done, the plants should not stay in the pots longer than is needed to get them somewhat hardened, and then the roots may be reduced and divided into two or three pieces, and planted on a well-prepared border. A good stock of *Spiræa* may soon be reared in this way, and if the clumps are properly grown, they will display their true character when potted up and forced, there being a great difference between plants properly prepared for forcing and those that have been neglected, the latter rarely starting freely into growth, while the flowers are mostly poor. *H. Markham.*

DEUTZIA GRACILIS.

If cut-back *Deutzias* have made good growth in the cold frames in which they were placed, they should now be stood tolerably wide apart, and allowed full exposure. The cultivation of *Deutzia gracilis* is simple, and a stock of useful little flowering plants may soon be reared. Pieces of half-ripened wood, with a heel preferably, if dibbled into sandy soil, under a handlight, and well watered, will root readily; but where convenient, the soft cuttings struck in heat early in the spring, and potted and grown on with a few pinchings, make good plants in one season. As soon as struck, pot them off in small thumbs or 60's, and keep them shaded and watered till established, after which time put them in a vinery or Peach-house, near to the glass, till the season is more advanced. Before standing them in a cold frame, they should be gradually hardened off, and thence transferred to a sunny border. When kept in pots, the plants need manure water, and an occasional repotting, but they must not have large shifts. The pot for flowering them in may be a $4\frac{1}{2}$ -inch or a 6-inch one. The worst evil that can happen to a *Deutzia* is a check in growth, which may arise from lack of water, or a sudden change in temperature. The plants should be kept growing, and be liberally treated, till they have completed their growth. The best soil for the final potting is fibrous loam, a small quantity of dried cow-dung or spent Mushroom-bed stuff, and enough sharp sand to keep the whole porous. If the soil is heavy, some leaf-mould should be added. The double variety, *D. crenata* fl.-pl., is valuable for pot work, although it does not produce its flowers so freely or so early as *D. gracilis*, but they have an advantage in lasting longer. This species is usually met with growing in shrubberies, but is well deserving of pot room. *H. Markham.*

VEGETABLES.

IMPROVED WROXTON ONION.

I NOTICED recently in the *Gardeners' Chronicle* a note on the above fine variety of Onion, and having cultivated it for several years, I should like to bear testimony to its excellent qualities as a keeper. I

have, under ordinary cultivation, grown it to a fair size, and I think it is one of the best for autumn-sowing—better than Tripoli in being less coarse in texture, and keeping much better. I have some now which weigh 1 lb. and more, the seed having been sown last autumn. The plants stood the winter well.

Another Onion, good for either autumn or spring sowing, is the *Excelsior*, and some just pulled weigh $1\frac{1}{2}$ lb., and most of them average 1 lb. It is of globular shape, very firm, and a good keeper. *F. Q. C., Devon.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By T. H. CRASP.

DAHLIAS.—Where the plants have been well attended to with water, much progress will have been made, and staking and tying-out should get careful attention, or much damage may ensue from wind and wet. The shoots on plants that will carry show blooms must be kept well-thinned, but if for ordinary garden decoration less thinning will be needed, and only sufficient should be cut away as will allow sun and air access to all parts. Liquid manure, with a little soot added about twice a week, is of benefit to all Dahlias. In the case of exhibition flowers, the plants of the show and fancy varieties should have all flower-buds removed except one on each stem, care being exercised in selecting the buds of most promise. Pompons and decorative Dahlias do not require this kind of disbudding, and may be grown for exhibition in the ordinary manner. Small pots filled with hay may be placed on the stakes as traps for earwigs.

PENTSTEMONS.—These beautiful herbaceous plants will not be so fine this year owing to the drought, although the genial showers of the last few weeks have been of great benefit. The genus consists of plants which are impatient of moisture during their period of rest, *i.e.* the winter season, but require copious supplies in the summer months to enable them to make free growth and fine spikes of flowers. Now that rain has fallen a mulching of rotten manure would benefit the plants, and when this is done, neat stakes should be placed to each plant and the flower-spikes secured to them. If extra fine spikes are required a little disbudding must be performed. At this season cuttings of choice varieties are readily obtainable, and these should be slipped off, and placed thinly round the sides of 48-pots, which may be stood in a shady, close, cold frame, where rooting readily takes place. Seeds may be sown at this time, should no strong plants with shoots fit for cuttings exist. The seedlings will bloom next year. Sow the seeds thinly in boxes or pans of rich light mould, and place in a cold frame, where they may remain till the planting season next spring.

ASTER, GERMAN AND CHINA.—Where beds or borders of these plants are found, and large, well-formed blooms are required, close attention must be paid to destroying aphides, which appear to be unusually plentiful on these plants this year, crippling the foliage sadly, and checking growth. The best method of dealing with aphids on Asters is to mix up a strong solution of soft-soap and water, and sprinkle the plants overhead with it, occasional applications of liquid manure being afforded, as well as a mulch, to encourage growth.

THE YELLOW LUPIN.—*Lupinus arboreus* may now be sown in pans or boxes, placing them in a cold frame, for if the seeds be sown outdoors, the seedlings are liable to be eaten by slugs during the autumn and winter.

ANEMONE FULGENS.—Corms should now be lifted and stored away for future use.

HYDRANGÆA HORTENSIS, &c.—Cuttings of this almost hardy garden plant will now root freely if they are made from shoots of half-ripened wood, and put singly in small pots of sandy soil in a cool frame that is kept close and shaded. These will make good specimens next year.

All plants of which seeds are not required should have the seed-vessels removed as soon as the flowers drop, thus considerably prolonging the season of bloom. If not already done, no time should be lost in removing the seed-vessels from *Rhododendrons* and *Azaleas*.

LAWNS AND EDGINGS will now require much attention in mowing and clipping the grass now growing rapidly. Recently sown seeds of grasses and Clovers for the purpose of covering the brown patches on the lawn have had favourable weather for their germination; and those who did not do as was suggested at the time may still do so during the ensuing week, well working the seed into the sward by the use of a good broom, following this with a good rolling.

LATE-FLOWERING HERBACEOUS PLANTS which are tall growers should be staked and tied at once, as the wind after this date is often very destructive in its effects on these plants unless secured.

LAVENDER AND EVERLASTING FLOWERS may now be cut when quite fresh and dry, the latter being put into bunches and hung upside down to dry to prevent dust collecting on them.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

APRICOTS.—As no fruit trees suffer more from winter pruning than the Apricot, the forerights should, after the fruit is gathered, be pruned back to three or four leaves. Any shoots which were left to fill vacant spaces should be secured to the wall; and unless rain should fall in quantity before these lines appear in print, a thorough watering of the soil, especially that within a yard from the wall, should be afforded—it will assist the fruit-buds greatly. Indeed, if such assistance be not afforded the trees, it is unreasonable to expect them to bear well next season.

APPLE AND PEAR TREES.—The fruit will suffer considerably this season, unless wasps' nests are taken as far as possible, and the insects trapped in bottles, hand-glasses, &c. Where the crops of early fruits are abundant, it is a good plan to leave a portion of these ungathered, which will have the effect of luring them from the more valuable late varieties, and it is near these early trees that the wasp traps should be set. Any specially fine specimens of Apples or Pears which it may be desirable to preserve may be placed in muslin bags, tiffany, or any material of similar open texture. For the first time I have this season been obliged to have recourse to this mode of protection, and so far have found that the colouring of the fruit is not materially affected thereby. To protect the fruit from the birds, if the trees are too large to be netted over, any particularly fine specimens may be effectually protected by placing a collar of stout paper over the base of the fruit, the aperture made to pass the stalk through to be afterwards closed by being pinned up, and with small nets placed under the fruits in the event of their falling, one is relieved of further anxiety respecting them. The nets that I use are what were made some years ago for supporting Melons, and they answer the purpose admirably. They are 9 inches square, and $1\frac{1}{2}$ inch mesh, with 6 inches of loop at the corners to fasten them by.

WATERING.—Where the means are at hand afford water copiously to the roots of Apple and Pear trees, until a break in the dry weather becomes general. Doing this will prevent premature ripening of the fruit. Damsons and late Plums, if bearing heavy crops, should have thorough waterings, as notwithstanding the recent refreshing rains, the subsoil is still dry, and without sufficient root-moisture, the fruit will not attain to its proper flavour.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

FERNS.—Special attention must now be given to the watering of specimens as the daylight shortens; plants which have completed their growths should have moderate quantities of water, or yellow unhealthy foliage will result; at the same time the plants must not be kept dry at the roots. Syringe the plants less and afford air night and day during warm weather. Attend well to Ferns in baskets required for winter decoration, affording them weak liquid manure occasionally. Two useful species for growing in baskets and vases are *Nephrolepis tuberosa* and *Woodwardia radicans*.

GESNERAS AND GLOXINIAS going out of flower should have water gradually withheld when the foliage and tubers are matured, the pots or pans being then laid on their sides in the cooler part of the stove or in an intermediate-house. Other species being grown for winter flowering should be kept free of aphids and thrips, and placed near to the glass and not crowded with other plants. Liquid manure in a

weak state may be afforded them, and moisture in abundance in the house, but the foliage must not be wetted.

ACHIMENES require about the same kind of treatment as the above after flowering, water being withheld by degrees.

FUCHSIAS.—Cuttings may now be struck, taking the strong points of shoots and placing them singly in small thumbs filled with fine loam, leaf-mould, and sand, in a gentle bottom-heat. The cuttings must be kept close and shaded, when they will soon strike, and may then be potted off into 6 inch pots, to be grown on in a warm pit or greenhouse without any pinching or stopping through the winter.

PELARGONIUMS.—Cuttings of the show and fancy varieties may now be made from half-ripened shoots. These should be from 3 to 4 inches long, and placed in pots of a mixture of loam, leaf-mould, and sharp sand, some sand being placed on the surface of the mould. Place the cutting-pots in a greenhouse or cold frame; do not afford them much water, only enough to keep them plump. Specimens of these plants should be pruned in hard when the wood is ripe and the soil dry, and be kept dry afterwards by turning the pots on their sides out-of-doors until some slight start in growth is made, then placing them in a frame or light pit, and sprinkling them overhead till growth is more general, when they must be shaken out of the soil and repotted in small pots as they will go into. The best kind of soil is yellow loam and leaf-mould and a small quantity of sharp sand. Much water should not be afforded, but plenty of air and sun-light.

HELIOTROPES.—These, if for flowering in pots during the winter, should now be well-established and making strong growth. All shoots at the present time should have the points removed, and a new break encouraged.

POINSETTIA PULCHERRIMA AND EUPHORBIA JACQUINIEFLORA, which require about the same kind of treatment, should now be making good growth, but they may be improved by affording them some well-diluted manure, artificial or other. Fly the syringe among the plants on fine days, and keep a moist growing temperature of from 55° to 75° in the house or pit in which the plants are placed. Considerable care in affording water is required at this season if the plants are to be maintained in the best condition; and a pit or house with a path along the middle is the most suitable place for them. Keep the foliage clear of green, black, or white-fly by the use of quassia-water.

TUBEROUS-ROOTED BEGONIAS, when the flowering season is past, should be removed from the show-house to a spare pit to complete their growth, paying great attention to the watering of them for a time. Young plants of *B. Weltoniensis*, if in 60-sized pots, should have a shift into 5 or 6-inch pots. Some of the best of the fibrous-rooted Begonias for winter work are *Gloire de Sceaux*, *Knowsleyana*, *nitida*, and *Vernon*.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

THE DENDROBIUMS.—The last of the summer-flowering species, viz. *D. tortile*, *D. t. roseum*, and *D. Bensoniae* are growing freely after having been rebasketed or surface dressed; the last-named one being grown by me in pots, and is well syringed daily in order to keep the plants free as may be from red spider. If this be not done the plants are apt to be much infested, with the result that many of the leaves are lost. Our plants of *D. Dearii* have also received new baskets if the old ones have become decayed, and they have begun making growth; and when established in the new compost of peat and a small quantity of sphagnum moss, they will be copiously syringed. The plants are growing in a hot moist house, shaded to a fair extent during the sunniest part of the day. The plants of *Dendrobium rhodostoma*, a hybrid, are nearly always in flower, and a beautiful variety it is. The pseudobulbs, 3 feet in length, flower at different times along the whole length. A plant of it is now in flower here, which has borne flowers at nearly every node during the last three years. Plants of *D. Phalaenopsis*, *D. P. Schroderianum*, *D. bigibbum*, *D. superbiens* are now making free growth, and some of them have begun to push up their flower-spikes. These species will need copious watering and syringing now that they are placed in a moist house of high temperature. Any newly-imported plants of *D. P. Schroderianum* which may be at this time starting

to grow at top, and to make new roots, should have some peat and sphagnum moss placed about the latter. I place only clean crocks about the roots when these new importations are first started, and add the peat and sphagnum later. I would draw the attention of those who may have newly-imported plants to examine them closely for a destructive weevil, which came over with some recent importation, which ruined a great number of plants. If the insect be detected, the best and surest cure is to cut away the pseudobulbs clean, as neither fumigation nor dipping the plants in any kind of insecticide will kill them in their retreats, the centre of the bulbs, which they arrive at by gnawing a way from the bottom to the top, entrance being made in the rhizome. *Dendrobiums* on rafts or in shallow baskets or pans with very little material about their roots should be well syringed, and sometimes dipped in a tub of water, always observing to soak the material. *D. Falconeri*, *D. Devonianum*, *D. Wardianum*, and the pretty *D. pulchellum* are chiefly grown in this manner. *Dendrobium aggregatum* is another which grows satisfactorily on a wooden raft. All *Dendrobiums* should be growing freely at this period, and ought not to lack moisture; and when they are healthy, roots in quantity are pushing forth, and the young pseudobulbs well advanced in growth, weak manure-water may be afforded once in seven days. A few *Dendrobiums* are about the end of their active growth for the present season; of such are *D. Wardianum*, *D. nobile*, and *D. crassinode*, that were started early, and such as these should be afforded water in such quantity as will not cause new growth to be made; but the plants must not be kept in a dry condition, only less water afforded, and they should still remain in the house in which growth was made for some time longer, but affording them the fullest amount of sunlight that is safe.

ANGULOAS.—The species *A. Clowesii*, *A. Ruckerii*, *A. eburneum*, and any other species now completing their growth, will need considerable supplies of water, and occasionally of weak manure-water.

THE KITCHEN GARDEN.

By H. O. PRINSEP, Gardener, Buxted Park, Uckfield.

SEASONABLE HINTS ON WORK.—At this time of the year, especially after a season such as we have lately passed through, garden refuse of all kinds has grown apace; and so as to avoid the usual unsightly rubbish-heap, it should be mixed with stable dung and fermented under a covering of soil, the result being a valuable manure. Failing this, it may be burnt, although this is a wasteful proceeding, except for such rough stuff as will not readily decay. The burnt portion forms a valuable fertiliser as a top-dressing, containing, as it does, a large amount of potash; Celery, Broccoli, and late Peas will derive benefit from it. Keep the hoe going in fine weather amongst Lettuce, Endive, Coleworts, and Onions. Thin out, where overcrowded, the Kales, Kohl Rabi (when not transplanted), Savoy, and Broccoli, for nothing is gained by growing too thickly. Where possible a good stock of bracken should be gathered in while it is green, for it is much tougher and lasts longer when cut at this season. Bracken is very serviceable for protecting Broccoli, Celery, and other plants during the winter.

CAULIFLOWER.—On light ground Cauliflower seed should now be sown, choosing for the seed-beds an airy situation; but on strong land or low-lying gardens, the sowing should be delayed for another week. Much often depends on the time of sowing, the latter differing in the various parts of the country; no fixed dates can be laid down for it. In mild winters, if the seed be sown too early, the plants are apt to get too large before it is safe to transplant them to the open quarter or warm border; and if sown too late, progress is slow in the event of a severe winter. As a rule, however, autumn-raised plants are not to be depended upon for the first supply, the small-headed early varieties, raised from seed sown in January in warmth, turning in fully a fortnight before them.

ENDIVE.—The early lots being fit for blanching, the plants should be covered or tied up when the leaves are dry. Continue to transplant Endive, and make another sowing.

PARSLEY.—Plants from recent sowings may now be transplanted. The more exposed sowings are seldom cut up before the end of the year, so that if a sheltered piece of ground be planted at this season, a supply will be afforded that will last till late in the winter.

Another sowing should now be made to produce plants for protecting in a cold frame, as it is in early spring that the supply of Parsley gets short, particularly after a winter of some rigour. The plants from this last sowing will afford leaves next summer before going to seed, while those sown earlier in the season will throw up their flower-spikes in spring.

RADISHES.—Sow seed in a sunny situation, on light, rich ground, with the manure, if any be necessary, but a short distance from the surface. The best kind I ever grew at this season is "The Sutton."

MUSHROOMS.—It will now be necessary to begin to prepare beds in the Mushroom-house, for although at the present time good Mushrooms may be gathered from beds in the open, the time will soon arrive when we may expect cooler weather. It is advisable to still have the manure prepared in a shed facing north, as it will not then dry rapidly, and is not liable to get overheated. The best of stable-manure may be obtained, but if it is allowed to get too dry or to over-heat before the beds are made, the results are not satisfactory. It is important, therefore, to pay much attention to the preparation of materials.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

PINES.—Suckers of Pines are readily procured at this season, and to make a beginning to grow this fruit (still much in favour by those who prefer their own to foreign), the present is the proper time for making a start. Bottom heat from hot-water pipes renders the work safe, and reduces labour materially, as compared with earlier methods. If the suckers are of a good size, they should be firmly potted in 7-inch pots, and it is well to have the pots filled with roots by the end of the year, so that they will be ready for a liberal repotting after the middle of January is past. All Pines should now be growing steadily, and growth kept stocky by a free admission of light and air, and plants that are carrying growing fruit should be frequently examined in order to ascertain the condition of the soil in regard to moisture. Continue the early closing of the houses with sun-heat, letting the heat run up to about 85° or 90°; syringe the plants lightly overhead, but passing over plants in flower. Much indiscriminate use of special manure, of which the users know nothing, is now made, but I would advise that rather than run any risk with these, it will be better to leave them alone.

VINES.—The wasp pest is unusually severe this season—a fact doubtless due to the dry, warm weather, and all vineries where fruit is hanging must have some means used to keep out the wasps and flies. Bottles half-filled with beer, and sugar mixed in it, are used by many for trapping the insects, but exclusion is the more satisfactory plan. Hexagon netting, perforated zinc, and other material are employed; but none of the preventive measures should exclude the necessary supply of fresh air, without which Grapes will not ripen. Outside and inside borders should be lightly loosened with a digging-fork or Kentish hoe, which will have the effect of keeping the surface friable, and preventing the cracking open of the soil. Water should be supplied in the morning in order that the air in the house may become dry before nightfall; and fireheat to prevent damping of the berries should be used, and if the bunches are very compact they will require much attention, especially in damp and close weather. Wash the foliage of Vines with the syringe occasionally when the fruit is gathered, endeavouring to keep it green and healthy till the wood is quite ripe and the buds plump. It is an old practice of mine to remove all the buds from the shoots of Vines that will be forced early except those which are to be left when pruning is performed.

MELONS.—Plants now growing freely should not be rendered unfruitful by a close atmosphere and high temperature, and a free circulation of air early in the day does much to secure short-jointed fruitful growths, as does a steady bottom heat and careful watering with tepid water. Cold currents of air must not reach the foliage, and the surface of the bed should be kept in a moist but not constantly wet state, and the stems at the ground level should be kept dry after this date. Lime and small charcoal mixed is a good preventive of canker of the stem. Stop, train, and thin the bine at short intervals, in order not to give a check.

STRAWBERRIES.—Plants potted last month will be well rooted, and they should be often shifted about to prevent the roots entering the bed of coal ashes or gravel on which they stand. Keep runners removed.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited; but the Editor cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY, AUG. 15. Cardiff Horticultural (two days).
Clay Cross Horticultural.
Horticultural Shows at Reading, Berkshire; Kingswood, Gloucestershire; York; Bishop's Stortford, Essex; Wilton Park, Wilts; and Sutton, Surrey.

SALE.

FRIDAY, AUG. 18. Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—62° 2.

THE very desirable mode of holding land for garden and *petite culture* generally in small parcels is gaining ground, thanks to the efforts of County Councils, and the provisions of the amended Small Holdings Bill. This Bill as it stands is scarcely so effective as it might be made, for want of a clause conferring compulsory powers of purchase or lease; in fact, in the words of Mr. JOHN MORLEY, it is "not worth the paper it is written on." But this is a matter that may shortly be rectified; in the meantime, some amount of benefit is being conferred on rural and extra urban communities by the increasing facilities of obtaining allotments for garden purposes. And *à propos* of extra urban allotment holders, our old correspondent, "A. D.," sends the following:—

"How far the very increased demand for allotment gardens is due to Allotment Acts, to the action of county councils in disseminating wider information on gardening, or to the natural requirements of a people ever fond of gardening; at least, it is certain that the demand is developing rapidly in all directions, and under conditions that sometimes create wonder and admiration. I have lying before me a request from a working-man living at Bethnal Green, of all places in the world, who has taken an allotment of ground under the London County Council at West Ham, a long way from the man's residence. He has some 16 rods, and there are at the Mill Meads about 100 of similar allotments. The ground is covered with long coarse

grass, and he wants to know how best to proceed under the circumstances, as, to use his almost pathetic words, he has but 'little experience.' Probably plenty of advisers could be found who would say, best leave the allotment alone. Not so this poor man, or myriads of others. The land hunger, even though it be for but a few rods, is strong within him; and although the job, especially that it lies so far from his home, is a tough one, yet with the help of good advice and kindly encouragements, he will eventually do well. Not all a nation's heroes are found in the ranks of war. Peace hath her victories, not less glorious; and the poor artisan, shut up in some gloomy workshop all the day, and condemned to live in a gigantic wilderness of bricks and smoke, always will be a hero when he gets on to his few rods of land, and if at first daunted at the nature of his task to subdue the stubborn soil, correct its evils, and convert it into a little paradise, even if but of Potatoes and Cabbages, will eventually accomplish his work, and reap his well-merited reward. This may be after all but crude horticulture, but it is none the less very useful and pleasing, and the case serves to illustrate the undoubted fact that whatever may be special causes operating to prosecute the demand for allotments, the greatest general cause is that undying love for gardening which so universally animates the British people. But Allotment Acts have, all the same, very much to do with the increased demand, and for the obvious reason that where ground is provided by the local authorities it is so supplied more free from arbitrary or exasperating conditions, and the tenure of the holders is far more secure. I have just met with a case in point, in a parish just outside that of Kingston, where allotments have been furnished for some six or seven years, by a landowner. These, nearly 100 in number, in divers fields, have been all taken up and generally well cultivated and cropped. Still, there never has been any material hold on the land, as it was all held subject to six months' notice. Still, the rent, 1s. per rod, £8 per acre, fully twice the rent paid for agricultural land close by, gave the owner a very profitable return. Recently the owner died, and now all is anxiety and distrust, and the allotment-holders naturally wish the local authorities to step in and secure this or other land for allotments, that their tenure may be enduring. What wonder is it that even gentlemen seeing the painful position in which these allotment-holders may be placed, now express strong desire, not only that the Parish Councils Bill may become law, but also that those new local authorities may be armed with full powers to acquire land for allotment purposes. Only very recently nothing was thought to be a greater forlorn-hope than the provision of allotments for the new borough of Richmond, Surrey. The original suggestion was almost laughed out of existence, but those who wanted allotments persevered in spite of ridicule, and although the original effort to obtain land in the Old Deer Park fell through, yet eventually some 20 acres of capital land were obtained, near to Mr. Kinghorn's nursery, that were marked out, divided into one hundred and ninety-six plots of diverse dimensions. All were at once taken up at 1s. per rod, and all have been this year, for the first time, cultivated, and remarkably well too. And yet the workers are, in many cases, men whose vocations are as diverse from that of gardening as can be. Very few knew anything material about it, and yet the result, even in so adverse a season as the present has been, has exceeded expectations. Is not such a result rich reward to all who have laboured so earnestly for allotments in this town? The demand has now spread to the more populous town of Kingston, and at the present moment a memorial to the corporation, signed by over one hundred working-men of the borough, is before that body asking for allotments, and I have no doubt but that somehow they will be furnished. I am told that, with a little exertion, five hundred signatures could have been obtained, and doubtless it is so. These facts suffice to show how the allotment demand is growing. Twenty years hence, allotment gardening will prove to be a potent factor in England's welfare."

NIGHT-FLOWERING CEREUS.—The illustration which we give at fig. 36 of a flower of *Cereus grandiflorus*—one of the night-flowering species—was grown in the garden of H. HOLZ, Esq., Quorn Lodge, Loughborough. The woodcut was taken from a photograph sent us by Mr. FROST, photographer, of Loughborough. Owing to the nocturnal habits of the flower, the difficulty of securing a good photograph was not inconsiderable. By the use of incandescent magnesium ribbon, however, Mr. FROST has succeeded very well. The night-flowering species of *Cereus* are among the most gorgeous of Nature's beauties. When seen they always excite admiration, and yet they are so rarely seen, that even professed gardeners do not know them. There are several night-flowering species, mostly natives of the West Indies and Central America, where they trail from rock to rock, having relatively little attachment to the soil, but emitting aerial roots from the stem like an Ivy. In cultivation they do well against a back wall of a lean-to, either planted out or in a pot. They need very little soil, but demand perfect drainage. When growing in summer they should have a drenching once in a week or ten days, gradually reducing the frequency of watering till in winter, say from November to March, no water at all should be given. One of the finest plants we ever saw was grown in an old-fashioned lean-to heated with a brick flue, such as is never seen now-a-days. *C. grandiflorus* has the sepals of a cinnamon-brown, the petals of the purest white, with a delicious fragrance like that of Cedar pencil or vanilla. It is very interesting to watch the movements of the stamen towards the stigma, one after the other, as if it were a presentation at Court. This habit seems to show that the plant is fertilised by its own pollen; the pure white and rich perfume, on the contrary, suggest insect agency. Perhaps some West Indian correspondent can give us information on this point; and Mr. WATSON, who tells us that *C. Lemairii* produces seeds freely at Kew, could enlighten us on the matter. *C. Lemairii* is less common; the scales on the flower-tube are crimson instead of brown. *C. Macdonaldiae*, a native of Honduras, is like *C. grandiflorus*, but with even larger flowers (14 inches in diameter), and with cylindrical not angular stems. *C. nycticalis* is also like *grandiflorus*, but has orange-coloured sepals. *C. triangularis* has triangular stems, and green sepals. Other night-flowering species are mentioned by Mr. WATSON in his *Cactus Culture for Amateurs*, but they are seldom seen in private gardens. *C. fulgidus* (*Bot. Mag.*, t. 5856) is one with deep orange sepals and crimson petals, grown at Kew, and supposed to be of hybrid origin. Night-flowering *Cereus* first flowered in the garden of the University (?) at Altorf in 1747, but it had previously flowered at Vienna. In this country it first flowered at Hampton Court, where it was introduced in 1690.

SIR TREVOR LAWRENCE ON GARDENING.—In opening the exhibition of the South Park (Reigate), Cottage Garden Society, held on Saturday last, Sir TREVOR LAWRENCE, speaking as the President of the Royal Horticultural Society, said he had always held that horticulture and agriculture were closely allied, but much regretted to find that the latter most important interest was just now in such a depressed condition. He thought that if gardeners or others could offer any practical suggestions as to how agriculture could be helped they would be gratefully welcomed. To him the most interesting part of the show was found in the cottagers' products, because he had always found that well-kept gardens and pretty flowers were invariably associated with greater domestic comfort and happiness. Gardening was a healthy vocation, but in relation to its products as food he thought we were as a people too conservative in fondness for so much meat, when vegetables and fruit were more healthful. It was specially to the credit of cottagers that with the very limited time at their disposal they did their gardens and allotments so admirably, often showing produce that equalled those of the private gardeners. But the public generally little understood how much they owed to gardeners, for whilst there had been gathered



FIG. 36.—*CEREUS GRANDIFLORUS*.

From a photograph by Mr. Frost, taken by the aid of magnesium light. (See p. 186.)

from all parts of the world exotics or vegetable products of every description, yet it was the gardeners who had developed from those diverse things the most varied and beautiful flowers and other products we now had in such abundance. Reverting to the uses of vegetables as food, Sir TREVOR said that we did not sufficiently understand their proper presentation in a cooked condition, for were they thus improved he thought vegetables would be even much more largely consumed than now. He once had a French cook, and having some Broad Beans to be sent to table, found his cook boiled them when shelled, then removed the skins, and so sent them up. That being wrong, he next boiled them in the shells, and that not pleasing, after other trials the right course was found. It was in cooking vegetables well and presenting them in an appetising way that they would become so much more largely consumed. Referring to the Royal Horticultural Society he said that it was endeavouring to promote a wider and higher knowledge of gardening through the institution of annual examinations for gardeners, and others. Of course, mere theory alone would not make a gardener, but the aim of the examinations was to ascertain how far both theoretical and practical knowledge was sound, for no gardening could ever be successful that was not based on sound principles. A cordial vote of thanks was awarded to Sir TREVOR at the close of an interesting address, of which the above is a brief outline.

MR. GOLDRING is now in England, and proposes to remain here for some eighteen months. On his way from India this time, Mr. GOLDRING has paid a visit to Japan, thence to the Sandwich Islands, California, Colorado, Chicago, &c. Mr. GOLDRING speaks in the warmest terms of his trip, and was particularly struck with the parks, cemeteries, and public gardens of the United States.

MR. QUINTIN READ has been appointed by the Worcestershire County Council an Assistant Instructor in Horticulture.

GLEICHENIAS.—Mr. CHARLES EASTWOOD, of Lud-denden, sends us a photograph of his house of *Gleichenias*, and specimens of *G. dicarpa* and *G. fiabellata* in 3-inch pots—nice little plants, suitable for growing on or for decorative purposes. Some people experience difficulty in the cultivation of these plants, but Mr. EASTWOOD clearly has overcome the difficulty, if he ever met with it.

BORDER CARNATIONS.—Messrs. LAING & MATHER, of Kelso, send us a box of Carnation blooms of great freshness and beauty. The blooms were cut from the open from layers planted outside last autumn. Lady Nina Balfour is a variety newly introduced by the firm, of a lovely pale pink colour, very full, with even petals, and the calyx shows no tendency to split; *Duchess of Fife* is a beautiful shade of rose; *Kelso Abbey* is a yellowish-buff, flaked with crimson; *Master Evan* is similar, but the crimson markings are deeper and broader; *Dundas Scarlet* is a pure scarlet of good form. We have not space to give more illustrations; it must suffice to say that the collection was among the best we have seen this season.

WILTS HORTICULTURAL SOCIETY.—It has been decided to hold this exhibition at Wilton Park, and not in the Palace Grounds, Salisbury, as was previously arranged and announced. It will take place on the 16th inst.

CUPRESSUS MACROCARPA VAR. LUTEA.—Remarking on the comment of our reporter concerning the plant of the above which DICKSONS, Chester, exhibited at the last meeting of the Royal Horticultural Society, the exhibitors state that this plant had not come out of a greenhouse, but was taken direct from the open ground.

INTERNATIONAL BOTANICAL CONGRESS.—The Congress for 1893 will be held at Madison (Wisconsin, U.S.A.) on Wednesday, August 23. Questions of nomenclature and terminology will be considered. The American Association for the

Advancement of Science holds its meeting in the same city in the week previous. Section G is devoted to Botany. The Botanical Club also meets during the same period, as well as the Society for the Promotion of Agricultural Science, and the American Microscopical Society.

THE VOLE AND ITS ENEMIES.—The Board of Agriculture is sending out a pamphlet about the field vole and its enemies, which should prove most valuable to those farmers and game-keepers who are wise enough to profit by it. The plague of voles is no new trouble either in England or Scotland, and careful investigation has shown both the cause of the pest, and the right way of dealing with it. Voles are enormously prolific, their numbers under natural circumstances being only kept within reasonable limits by the various species of birds and animals which feed upon these rodents. Instead, however, of owls, hawks, weasels, &c., being allowed to breed in peace, they are ruthlessly shot down, with the inevitable result that the balance is destroyed, and the voles multiply to excess. The reason for this mistake is ignorance; farmers and game-keepers regarding all creatures not "game" as "vermin." Hence the destruction of the short-eared owl, whose usefulness can scarcely be over-rated; the kestrel, which the keeper is pleased to call a "hawk;" and true hawks, which when recognised at all, are rarely correctly distinguished one from another. Buzzards, rooks, and other birds also destroy voles, but in less numbers. Stoats and weasels again are "among the deadliest and most persevering enemies of small rodents;" yet these also are shot down or cruelly trapped. So long as those who suffer from the plague of voles persist in ignoring the proper means of checking it, the pest will increase more and more. Now that the cause and remedy of the trouble have been so plainly set forth, the evil, if it be permitted to continue, can only be regarded as a fitting retribution on those who so foolishly and cruelly exterminate their best friends.

HOLLYHOCKS AT HAMPTON COURT.—Anyone who has been, or even yet may be, privileged to see the remarkably fine lot of Hollyhocks at Hampton Court, blooming so effectively this summer, will naturally wonder why it is that plants can do so well there, and yet be so scarce almost everywhere else. The fine strain there growing is from a private source. The plants were got out early last year, so that some flowered moderately, but this year all have bloomed profusely, throwing up two and three spikes from 7 to 8 feet in height, with numerous side shoots. Some of the plants were thus literally cones or pyramids of flower. Many of them have blooms of the most perfect doubleness, quite equal to the best of the florists' strains, and colours range from pure white, down through varying shades to crimson and violet. If what is so well done at Hampton Court in relation to Hollyhocks cannot generally be done, some tangible reasons should be given.

CUT-BACK AILANTHUSES.—In the border that fronts the old tennis-court at Hampton Court Palace, there are several stout young *Ailanthuses*, which are kept dwarf by hard cutting-back every winter, and then the following spring they break again, throwing up very finely—indeed, most luxuriant growths, varying from 5 to 8 feet in length. Thus kept dwarf, these trees have a very fine effect, as the foliage is of the noblest and most beautiful, associated with any hardy tree. The stems left standing vary at from 4 to 5 feet, but the yearling shoots are cut back annually to but a few inches. There seems to be no reason why the main stems might not be kept much shorter. Treated in this hard way, with Golden Elders and Catalpas, a very fine effect would be produced.

MUSEÆ.—Mr. J. G. BAKER has recently published in the *Annals of Botany* a synopsis of the genera and species of *Musææ*. The genera are four in number—*Heliconia*, *Strelitzia*, *Ravenala*, and *Musa*. *Heliconia* has twenty-nine species. Some of the garden forms, as *aureo-striata*, *triumphans*, *striata*, *Seemanni*, are probably referable to *H.*

Bihai, while *H. leucogramma*, Hort. VAN HOUTTE, proved when it flowered to be a *Calathea*. *Strelitzia* has four species and several varieties. *Ravenala* has two species. *Musa* is credited with no fewer than thirty-two species, primarily distinguished by the bottle-shaped or the cylindrical stem; flowers many or few to a bract; petal tricuspidate, or oval acuminate or linear. *M. sapientum* has numerous sub-species and varieties more or less imperfectly definable. *M. Basjoo* has proved hardy at Combe Wood.

NEWCASTLE-ON-TYNE BOTANICAL AND HORTICULTURAL SOCIETY.—From information received from the Secretary, Mr. JAS. J. GILLESPIE, Jun., we are pleased to hear that the recent exhibition was a great success in all respects. This proves the wisdom of amalgamation with the Agricultural Society, the whole forming a vast display. Other influential societies like that of Newcastle-on-Tyne should take the hint, whenever it is possible for horticulture and agriculture thus to mutually join hand in hand for their exhibitions.

GRAPE THE DUCHESS (*Revue Horticole*, Aug. 1).—A Grape of American origin, in spite of its name. It is called also the Poor Man's Grape, by reason of its productiveness, the small quantity of manure that it needs, and its immunity from mildew, so that grown side by side with Chasselas, which demands sulphur and copper sprays twice or oftener in the season, the *Duchess* needed neither. Again, it is stated to be little affected by *Phylloxera*. It is a small round white Grape, of the Chasselas character, of agreeable flavour.

DRAGON'S BLOOD.—Professor FLUCKIGER, of Strasburg, writing in the *Journal of the Pharmaceutical Society* concerning our note on this subject, says that the pods figured by MONARDES may be those of *Pterocarpus Draco*. "Its corky indehiscent pod of nearly orbicular outline tolerably answers to the figures of MONARDES, and the solitary kidney-shaped seed—if duly shrivelled—may [might] remind a fantastic observer of what he supposes to be a dragon."

"THE BOTANICAL MAGAZINE."—The plants figured in the August number are:—

Phaius tuberculosus, Blume, t. 7307. (See *Gard. Chron.*, 1881, i., f. 67; 1882, p. 565, f. 101; 1884, vol. i., p. 520, f. 104.)

Sphaerolobium grandiflorum, t. 7308.—A South-west Australian leguminous shrub, with slender, terete, pendulous branches, mostly destitute of leaves. Flowers numerous, in pairs along the ends of the branches; standard yellow, with a red blotch at the base; wings red. A beautiful greenhouse plant.

Brownleea cœrulea, Harvey, t. 7309.—A terrestrial tuberous-rooted Orchid, from South-eastern Africa. It has the habit of a *Habenaria*. The flowers are in racemes, each of a slaty-blue colour, dotted with purple spots, and with a very long curved spur.

Ilex conocarpa, Reis, t. 7310.—A Brazilian shrub, with inconspicuous flowers, but interesting as one of the sources of Paraguay Tea or Maté.

Musa Mannii, t. 7311.—A species giving off stolons at the base of the stem, with long petioled leaves; bracts rosy-pink; flowers yellow, half the length of the bracts.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY.—A large contingent of this Society is on tour in this country. They visited Windsor on Tuesday and inspected the State Rooms, gardens, farm, the Great Park, &c. Among other places Dropmore, Cliveden, and the New Forest, will be visited, and to-day, the party will be present at Earl's Court to examine the Forestry Exhibition.

THE DEVELOPMENT OF POTATO TUBERS.—It is a well-known fact that the buds towards the summit or anterior portion of the tubers of the Potato develop with more rapidity than those near the base or posterior portion. This fact recently attracted Mons. A. PRUNET to the study of the composition of the anterior and posterior parts of the

tuber; and he found that the anterior portion was generally richer in dry substances, carbohydrates, nitrogenous substances, organic acids, and particularly in the salts of potash, magnesia, and phosphoric acid. During the early stages of development the nutritive substances are evenly distributed throughout the whole of the tuber, and it is only when it has attained its full size that a transport takes place in the interior tissues towards the buds in the anterior portion (*Comptes Rendus*, cxv., pp. 751-52).

HORTICULTURAL SHOW AT CHESTERFIELD.—

We are pleased to note that a Horticultural Society has again been established at Chesterfield. Until ten years ago an annual show was regularly held, but through lack of sufficient support it was allowed to lapse. A new committee was this year appointed, and their show held on Wednesday, the 2nd inst., and in connection with the opening of the new Queen's Park, was a well-earned success. The most satisfactory of all the exhibits were the Roses, especially those shown by Messrs. COCKER & SONS, Aberdeen, who managed to beat such champions as Messrs. HARKNESS & SONS, Bedale. There should be no difficulty in firmly establishing the Society, if the residents in the district are alive to the importance of a technical knowledge of horticulture, which should always go hand in hand with these exhibitions.

PLANT PORTRAITS.

AQUILEGIA CHRYSANTHA, *Revue de l'Horticulture Belge*, July 1.

AZALEA INDICA FORTIANA.—A sport from Sigismund Rucker, raised by M. Fortie of Ghent, and exhibited by him at the Quinquennial, where it obtained a 1st prize. The flowers are semi-double, white, flushed with rose, and with spots of a deeper colour. *Illustration Horticole*, t. 180.

AZALODENDRON X COMTE DE KERCHOVE, *Revue de l'Horticulture Belge*, August 1 (see *Gardeners' Chronicle*, June 5).

CHYSIS BRACESCENS, *Lindenia*, t. 382.

COREOPSIS ABISTOSA VAR. MUTICA, *Gartenflora*, t. 1393.—Annual, with deeply pinnately-lobed leaves and orange flower-heads, surrounded by a single row of short spreading bracts.

CRINUM POWELLI ALBUM, *Gardeners' Magazine*, July 29, 1893.

CYPRIPEDIUM SIBYROLENSE.—A hybrid from C. Boxalli by pollen of insignie, and intermediate in character. Sibyrol is the name of the estate of M. Cahuzac, near Bordeaux. *Illustration Horticole*, t. 179.

ERIA LUCHUENSIS, Yatabe, *Tokyo Botanical Magazine*, t. 6, June 10, 1893.—Japan.

EUCHARIS LOWI, *Gardeners' Magazine*, p. 418.

FUCHSIA GARLEPPIANA, O. K. et Wittmack, *Gartenflora*, August, p. 461, fig. 96.—An epiphytall shrub, with long-stalked ovate acute leaves and very long slender pendulous flowers. Bolivian Andes.

GAILLARDIA GRANDIFLORA FR. GERBAUX, *Revue de l'Horticulture Belge*, August 11.

JUSTICIA CARNEA, *Revue de l'Horticulture Belge*, July 1.

BOOK NOTICE.

AMERICAN GRASSES.

In October, 1892, the first part of an exceedingly valuable work on *The Grasses of the Pacific Slope of the United States of America, including Alaska and the Adjacent Islands*, under the authorship of the late Dr. Geo. Vasey, was issued by the Washington Department of Agriculture. The second part of the work has now been issued under date June 1, 1893. In the introduction, Dr. Vasey says the grasses which are known to grow on the Pacific slope of the United States, including Alaska, number not far from 200 species. These are nearly all specifically distinct from the grasses of the plains and of the desert, except in that part of California which partakes of the desert flora.

A considerable number of the grasses of the mountain regions of California, Oregon, and Wash-

ington, reappear in the mountains of Idaho, Montana, and the interior Rockies. The interior of California is a dry region, verging in the extreme south into the desert country, and is deficient in grasses, especially of those species which form a continuous turf.

The work both of the first and second parts comprises mainly those grasses which are most conspicuous in size and apparent utility. Very few of the grasses illustrated in the second volume have ever been figured before, many of them, indeed, being new species.

The engravings are admirably executed; we are confident, therefore, that the work will be of great value not only to botanical students, but to all persons interested in agriculture, and in raising of domestic animals of the farm. *J. J. Willis, Harpenden.*

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA ELEGANS.

SOME flowers of a superb variety of what used to be known as *Lælia elegans* of the Turneri section have come to hand from Joseph Broome, Esq., Sunny Hill, Llandudno, the owner of that gorgeous form of the same plant, *Lælio-Cattleya elegans Broomeana*, and which makes it difficult to give varietal names to other forms which have arisen subsequently. The segments of the flower are $3\frac{1}{2}$ to 4 inches in length, of clear rosy-purple colour, the veining being the darker. The side-lobes of the showy labellum are sulphur-yellow, tinged with purple on the outside; the brilliant mauve-purple front-lobe is 2 inches broad, and the entire flower bold, handsome, and delightfully fragrant. The spike of nine flowers forms a fine bouquet. Here and there are a few stray dots on the segments, which was one of the signs which caused me in 1861 to arrive at what is now generally admitted to be the correct reading of the hybrid origin of this plant, and its difference from the light-coloured forms which were then included with it. In the *Gardeners' Chronicle* for October 27, 1883, in an article on *Cattleyas* and *Lælias*, I there stated that in 1861 I had worked out the problem that the set of plants known in gardens as *L. elegans* were of hybrid origin, of two sets of parents, the *L. elegans* Turneri section being from *L. purpurata*, and the form of *Cattleya guttata* found growing with it, and the light-petalled forms from *L. purpurata* and *Cattleya intermedia*. It has taken over thirty years to have my views on these points confirmed, and I fear it will take many more years before the proper names—*Lælio-Cattleya elegans* (for the Turneri section), and *L. C. Schilleriana* for the other—will get into general use in gardens.

A good explanation of the matter, and a separation of the varieties under their proper heads, appears in *The Orchid Review* for August, 1893. *James O'Brien.*

MILTONIA SPECTABILIS RADIANIS.

A fine form of this pretty variety is in flower in McArthur's Nursery, Maida Vale, being one of a remarkably fortunate importation of Brazilian *Miltonias*, out of which has flowered some very large *M. candida grandiflora*, *M. Clowesii* major, and *M. C. castanea*; *M. spectabilis atrorubens*, *M. s. bicolor*, and now the variety mentioned above. Its large labellum is of a clear white, a crimson blotch at the base, from which six or eight clearly-defined crimson lines radiate. *Miltonia Roezlii* alba is also in flower in the same nursery, with four flowers on one spike and two on another.

MASDEVALLIA CALURA.

This singular species, which has dark chocolate-purple flowers, of the form of those of *M. maculata*, is still very uncommon, a regular importation of it having as yet not been made, those existing in gardens having come as chance plants with Messrs. F. Sander & Co.'s importation of *M. Reichenbachiana* from Costa Rica. It is a very free-flowering species, and its dark colour and peculiar form make it an acceptable one. A plant is at the present time in flower in Messrs. Seeger & Tropp's Nurseries, 112, Lordship Lane, East Dulwich.

CANNAS, NEW DWARF GLADIOLUS-FLOWERED.

THESE varieties of Canna may, as regards colours, be divided into two sections, those in which crimson and red, with other dark shades, predominate, and others in which yellow and orange are the distinctive features. Of the former, as well as the latter, sub-divisions should be made, those with deep crimson or red flowers being as follows: Admiral Gervais, deep red, edged yellow; Paul Bruant, violet-crimson; Alphonse Bouvier, rich crimson; Madame Crozy, crimson, edged gold; Miss S. Hill, purplish-crimson; Avenir, bright cinnabar red; Comte M. de Choiseuil, cherry-purple; Edouard André, purple-amaranth; F. Benary, rich crimson; Francisque Morel, cherry-crimson; Jules Chrétien, cherry-purple; W. Pfitzer, rich crimson purple. Those with more scarlet in the flowers, and on the whole brighter in colour, are Pioneer, vermilion, edged with gold; Sophie Buchner, bright vermilion; Nardy Père, glowing scarlet; Thos. S. Ware, rich vermilion; Henri Vilmoren, rich scarlet; Victor, fine scarlet. Those with orange or salmon colours are Progression, orange and crimson; François Thomayer, deep orange; M. Laforcade, orange-red; President, cinnabar; The Garden, saffron; Antoine Chantin, salmon-rose; Jacqueminot Bonnefond, bright saffron; Hippolyte Flandrin, rosy-salmon; President Hardy, clear salmon. Those with yellow or yellow-spotted flowers, are Antoine Barton, yellow, spotted carmine; Primrose, clear lemon-yellow; Comtesse de l'Estoire, bright yellow, spotted lake; Souvenir de F. Gaulain, yellow, with crimson blotches; Admiral Courbet, citron-striped; François Corbin, canary-yellow; Françoise Crozy, clear yellow; Petite Jeanne, orange, edged yellow; Professor David, orange-yellow.

The foregoing list contains thirty-six varieties: of these, *Antoine Barton, *Primrose, Pioneer, and *Sophie Buchner, are sterling novelties of 1893; whilst Admiral Gervais, *Comtesse de l'Estoire, Nardy Père, *Paul Bruant, and *Progression, are the best of the preceding year. Those of 1890-91 are *Alphonse Bouvier, François Thomayer, M. Laforcade, *Madame Crozy, Miss S. Hill, *President Carnot, *Souvenir de F. Gaulain, The Garden, and Thos. S. Ware. Of the older kinds, the best half-dozen are Henri Vilmoren, Petite Jeanne, *President Hardy, *Victor Hugo, W. Pfitzer, and Jacqueminot Bonnefond. The best dozen of the foregoing are marked thus *.

Colour and Form of Foliage.—In this there is considerable variation, but for all practical purposes the green-leaved and the red or bronzy-leaved form the two main divisions. I have observed that the yellow-flowered varieties have the palest-coloured foliage as a rule, whilst the dark-coloured flowers are borne upon plants with dark green or reddish foliage. Those with red or bronzy leaves are François Thomayer, M. Laforcade, President Carnot, Jacqueminot, Bonnefond, and Victor Hugo.

The Dwarf Cannas as Cut Flowers.—In this way Canna blooms are extremely ornamental, but some care is needful in cutting them. Upon close examination there will be found at the base of each spike, enveloped in a sheath, another latent spike, which will start away into growth as soon as the flowers are all fallen from the former. This will continue in the case of a vigorous growth several times in succession; thus, if the spikes be cut when first they commence to flower, it will be at a great sacrifice of future bloom. The better way is to defer cutting until the third spike at least has been developed; then it will be possible, perhaps, to cut them long enough without taking the latent growth should another remain. In a cut state they last in good condition for a long time, and are so entirely distinct as to attract attention at once.

Canna iridiflora Ehemanni.—Previous to the introduction of the dwarf Canna this was one of the finest for pot-culture, as it now is if tall growth and imposing habit are essential. This variety is very accommodating as to temperature. I have

myself grown it in a temperate-house during the summer, with a cooler or greenhouse treatment during the winter, and flowered it well. It makes a fine conservatory plant. Mr. Green, when at Pendell Court, used to flower it well under stove treatment. I am doubtful, however, if it could be depended upon for outside culture.

Dwarf Cannas for Bedding-out.—For this purpose distinctive colours, and close compact growth, with freedom of flower, are the essential points, as contrasted with the taller kinds of noble foliage, but with less freedom in flowering. Madame Crozy has these essentials, and is the finest kind yet raised; Alphonse Bouvier, President Hardy, Miss S. Hill, Petite Jeanne, and Victor Hugo are also excellent for the same purpose. When intended specially for bedding-out, the better way is not to hasten the growth early in the spring, but rather to allow the plants to come on steadily. Thus treated the growth and foliage also will be more enduring, showing less signs of distress when fully exposed in the open. For planting out, the soil should be well prepared beforehand, good additions being refuse peat, leaf-mould, or old Mushroom-manure. A heavy retentive soil should be guarded against, but on the other hand a light soil, if not kept well watered, does not favour growth. After planting, a heavy mulching will be found of decided benefit. A position should be chosen for these Cannas, where they will not be too fully exposed to the wind, particularly from the east. Plenty of water should be given during the season. When lifted in the autumn, the roots or stools should be well cared for, not being exposed to a temperature below 40°. A medium state as regards moisture is the safer way of keeping them sound. A good plan would be to store them in boxes, with a surface covering of cocoa fibre or old Mushroom manure. Propagation by division can be easily attended to in the spring, each leading growth making a good plant.

Dwarf Cannas for Pot Culture.—It is in this way that we have thus far been able to see the most of this flowering section. For pot culture they should not be starved at the roots, but on the other hand, be treated liberally. Good soil, mainly composed of turfy loam and a little peat or leaf-mould, should be chosen. The loam of itself is disposed to get too close after liberal waterings, hence the need of the other ingredients to keep it in better condition. Road scrapings may well take the place of silver sand, and a little bone meal will not be at all amiss. When started in the spring, a moist temperate house, with plenty of light, will suit them well. Should there be any disposition to increase in height too freely, it must be taken as an indication that less heat will be all the better for them. During the summer an ordinary greenhouse or conservatory will suit them very well. Green fly is the most troublesome of insect pests. Red spider will also disfigure the foliage if not kept in check. Liberal treatment as to watering must be the practice through the growing seasons, with manurial stimulants when pot-bound. By applying warmth, or by removing to a warm house, the same plants will continue to flower well right into the winter season, but little rest being really required before starting again in the spring.

The origin of new varieties.—This does not appear to have been thus far made public; they originated without a doubt in France, and M. Crozy of Lyons has taken the lead in the raising of new kinds upon the Continent, as Messrs. Paul & Son, of The Old Nurseries, Cheshunt, have done in this country. The latter firm have repeatedly shown new varieties, and taken several certificates for their exhibits. Mr. George Paul gives me the information that he has made use of *C. flaccida* for purposes of hybridisation. This species is a large-flowered yellow variety, itself of dwarf habit, introduced from South America in 1788. To this species may be fairly attributed the lanceolate foliage of the yellow kinds. I strongly suspect that C. Warscewiczii has been instrumental in the further development of the dwarf section. This species has dark foliage, is of compact habit, and is one of the best for bedding of the

old kinds. The dwarf kinds will flower under 2 feet in height early in the year, but later nearly another foot must be added to their height as a rule. H.

HOME CORRESPONDENCE.

THE WOOD WASP.—In a communication addressed to *Land and Water*, the superintendent of the Forestry Department of the Earl's Court Exhibition calls attention to the fact that among the exhibits sent to Earl's Court from Windsor Forest is a slab cut from a diseased Scots Fir, and from it have been taken no less than eighteen wood wasps (*Sirex jurencus*), sixteen females and two males, all alive. When recently at Earl's Court, Mr. Cadell called my attention to the matter, and I had an opportunity of inspecting the insects, and saw how they bored through the wood, rendering it useless for economic purposes. Mr. Cadell states that the above species is not of such common occurrence as the *S. gigas*, which attacks Pine and Larch indiscriminately; and the fact that so many specimens have developed in one piece of wood only 3 feet or thereabouts in length, suggests the amount of damage which may be caused by the presence of one diseased tree in a plantation otherwise healthy. The wood is bored through and through, and the wasps also can be seen at the office of the Forestry Department in the Earl's Court Exhibition, and both are full of interest. R. D.

ARCHITECTS AND LANDSCAPE GARDENERS.—Aneant your notes in a recent Number, allow me as a practitioner to make a few observations on the two books to which you refer, and the principle which their writers try to enforce; the late J. D. Sedding's work always had a fascination for me. Of Mr. Reginald Blomfield's work I know little, but some of his designs I have seen, and taken as a whole, I thought they showed true artistic feeling; Mr. Sedding's book *Garden Craft* is one of the most delightful works I have read, so much so that I often make it my railway companion, and I never read it without wishing I had had the chance of grasping the hand now vanished and gone. The pity is that poetry takes the place of definite teaching, but then a garden is a poetical subject. I only wish I could express myself thus on Mr. Blomfield's book, one of the most valuable contributions of late years to garden literature, but overdone with cheap and often unwarrantable sneers at the expense of landscape gardeners. Mr. Sedding wrote out of a love for the garden, but I sometimes think Mr. Blomfield wrote because he despised landscape gardeners. Now the aim and object of these books is to show the connection between the house and the grounds, and that the architect, or landscape gardener for the matter of that, should be an artist, who could design both; so the attack is directed not against horticulture but against those who consider a garden the place for Nature imitation, but both writers look upon Nature as the willing handmaid of design. Surely there is nothing so very unreasonable in this. Even Mr. Repton teaches this much; and he plainly says that gardens are the work of art rather than of Nature. Here is a line of thought which can do none of us any harm, and if as a help to this study we use our sketch-book a little more, especially in the study of architecture in connection with landscape, I think we shall become a little more charitable towards these book writers, and perhaps in return they would become a little more so towards us. In respect to architects generally, so far as landscape gardeners are concerned, they may be divided into two classes—1st, those who take an interest in the setting and surrounding of their houses; 2nd, those who do not; the first are in some sense artists, the second are not. I have worked with both, and notwithstanding a little hard criticism at times, I invariably find pleasure in working with the first-named; respecting the second class, I venture to say nothing. Messrs. Sedding, Blomfield and Thomas have said enough to remind them of lost opportunities, and I hope also sufficient to convince them that a garden is worthy of their regard. If they are being so convinced horticulture will be a great gainer, whilst landscape gardeners may find a place in the altered state of affairs. I do not think the reading of the two books referred to will make the English landscape gardener love his special style any the less. He has too many proofs of its beauty to ever wish to abandon it—beauty acknowledged by architects themselves; but it is well to look at our work with other people's eyes, and if our art is capable of improvement, to profit thereby. Thomas H. Mawson, Windermere.

TEA ROSE, ERNEST METZ.—"Wild Rose," in the *Gardeners' Chronicle*, p. 150, writes in rather disparaging terms of the above Rose. Can he be aware of the fact that in an election of the best twenty-four Tea Roses (see *Gardeners' Magazine*, July 1, 1893), The Bride received the highest number of votes, viz., forty-six, and Ernest Metz forty-one? To me this is proof positive that leading Rose growers think most highly of it. All through June last I could gather splendid specimens, the best were over by the National Rose Society's show on July 1. In my opinion Ernest Metz is far away the finest and best Tea Rose sent out during the last six years, and it was shown in fine form at the Tea Rose show at the meeting of the Royal Horticultural Society on June 20. Benjamin R. Cant, Colchester.

ARISTOLOCHIA GIGAS.—We have grown this as a curiosity, and it is, unfortunately for its existence, flowering freely. The carrion-like stench of the flower when open is unbearable, and our tropical house will be conspicuous by its absence in future. The flower is large, but the stench is larger, considerably; and to those who think of growing it Mr. Punch's advice to those who intend to marry, is fully applicable. Mr. Punch's advice is—don't. The curious part is that the smell disappears at dusk; the flower is evidently intended to attract the carrion flies and beetles, which are active in the day only, and as its extraordinary "fragrance" is too powerful to be wasted, it is turned off at night. Of all the abominations with which mankind may trouble himself, *Aristolochia gigas* may take a first place easily. Thos. Fletcher, Grappenhall, Cheshire.

WASPS.—The mixture of sulphur and gunpowder recommended for the destruction of wasps is not safe in all cases. If too dry, the squib explodes; and if too damp, it will not burn. The best and safest mixture for the purpose is two-thirds flowers-of-sulphur, and one-third finely-powdered saltpetre, used dry. A case of the right thickness to push in the hole is easily made by rolling a sheet of paper round a stick, fastening the end with gum or paste; in the absence of either, the gummed margin of postage-stamp sheets is perfectly satisfactory. The mixture of sulphur and saltpetre is packed dry in the case, lighted at one end, and pushed into the opening of the nest. It burns like the firework known as a "blue-light," and the suffocating fumes from a small case will effectually destroy the largest colony. The mixture burns quietly, it is safe and easy to use, and the effects are certain. Any compound containing gunpowder is too uncertain in its action, and there is always a liability to accident, as I have found by unpleasant experience. Thomas Fletcher, Grappenhall, Cheshire.

MELON THE COUNTESS.—This is a fruit of fine appearance, the skin thin and beautifully netted, and rich yellow in colour, flesh white; with high flavour. The fruits, which are oval-shaped, will attain a weight of about 4 lb. The plant is of robust growth, and the flowers set freely. Mr. Gilman, the raiser, has disposed of the stock of seed to Messrs. Veitch & Sons, Chelsea. J. Udale.

CARNATIONS ONE HUNDRED YEARS AGO AND MORE.—At the meeting of the Midland Counties Carnation and Picotee Exhibition in the Botanical Gardens, Birmingham, July 22, Professor Hillhouse, Professor of Botany at Mason's College, Birmingham, and hon. sec. of the Birmingham Botanical Society, placed on view a copy of a very rare work, the *History General of the Insects and Plants of Surinam*, edited by Mdlle. Sybille de Merian, and published in Paris in 1771; who also published works on *The Plants and Insects of Europe*, and *Beautiful Plants of Europe*. The date of these works is approximately 1682, but in 1771 a folio volume of large size, containing the three works, was published in the French language. The volume contains a large number of exquisitely coloured life-size drawings of plants and insects, and as it also contains coloured illustrations of our earliest double Carnation, Professor Hillhouse thought an inspection of the volume would be of interest, especially to those who are cultivators and admirers of the Carnation. Three of the earliest varieties figured are—one under the name of *Ceillet pourpre*, a purple striped or rather lined variety with ragged edge; the others named *Caryophyllus purpureus* and *Caryophyllus variegatus*, the latter white with rosy scarlet markings and serrated edge. In the early part of the nineteenth century, our English florists were making great headway in the improvement of the Carnation, and it was

very interesting to note the illustrations of flowers of the eighteenth century, and side by side, a large exhibit of border kinds in many of which the serrated edge still exists, and by their side a large number of blooms of Carnations and Picotees of the finest form and substance, and with perfectly smooth edges, examples of skilful hybridising and culture. *W. D.*

FINOCHIO, OR TUBEROUS-ROOTED FENNEL.—

The above was figured in the *Gardeners' Chronicle* for January 28 last, p. 109, and was said to be used a good deal on the Continent, and no doubt many gardeners, myself included, have given it a trial. At the present time I have two long rows about 4 feet high. I have sent it to the kitchen three times for trial, but our cook, who, by the way, is considered a very good one, cannot cook it so as to make it palatable, and it is said to have but very little flavour, and is by no means an inviting-looking dish. Perhaps it requires some special method of cooking to bring out its true flavour. I should be very pleased if other growers who have tried it would give their experience in these columns, and especially the best mode of cooking it. It is a plant of easy culture, and I should say a plot of ground that had carried a good crop of Finocchio would require a very liberal dressing of manure to replace what the plants had taken out of it. *A. J. S.* [Finocchio should be stewed in gravy or soup, like Celery, and served with a white sauce. See *Gardeners' Chronicle*, March 25, 1893, p. 366, where it is stated that it is eaten raw in Italy like celery. *Ed.*]

LILIES AND IRISES AT WEYBRIDGE.

THE Lilies are in full beauty in Mr. G. F. Wilson's garden at Wisley. Wisley must not be confounded with Heatherbank, Mr. Wilson's residence on Weybridge Heath, as Wisley is a drive of several miles from it, through lovely Surrey scenery. Here is to be seen a fine garden of hardy flowers, each kind represented in quantity, to show the effect of their flowers when thus grouped or massed in a natural way.

The visitor to Wisley in early August and throughout the autumn, more or less, will be repaid by seeing what appears to be a garden of Lilies. This lovely genus is in perfection then, and in spite of the drought the many species and varieties are very fine. The natural character of the place has been changed as little as possible, and there is therefore ample protection from surrounding trees, whilst the Lilies are planted amongst Rhododendrons, which afford protection to the shoots in spring. *L. auratum* is one of the principal species in perfection through August, and Mr. Wilson has all the varieties, the flower-stems in the majority of cases bearing a large mass of bloom. It is interesting to note how much Lilies appreciate shade and a certain amount of moisture. On rising ground, where the soil is naturally drier, the growth is comparatively poor, large breaks of *L. auratum* are to be seen, hundreds of spikes rising from the plants, and in one spot the variety *virginale* is remarkably beautiful, getting protection from Damson trees, which at the same time are not too close to create a dense shade. When a large quantity of one species is gathered together, the variety of colouring is conspicuous, some flowers quite self, others freely spotted with rich crimson, and banded with colour.

At Heatherbank, Mr. Wilson has adopted a simple and very useful way of cultivating *L. auratum* and other showy species by means of tubs. Ordinary paraffin barrels are procured, and sunk into the ground, after the bottoms have been knocked out. They are filled with loamy and peaty soil, and the Lilies attain splendid proportions. The object of this method is to get Lilies in borders skirting shrubberies and similar spots. The ground is usually filled with roots, the soil necessarily poor, and the Lilies dwindle away; but when in tubs, the roots of shrubs are kept away, and the Lilies with proper attention flower quite as well, if not better, than in the open. Then at the entrance to the garden *L. auratum* is very beautiful in tubs, and later on *L. speciosum* or *L. lancifolium* will be in bloom. With dark green-leaved shrubs as a background, the flowers of the Lilies are thrown into bold

relief. Quite as beautiful in August is *L. superbum*, which is planted largely at Wisley. It is a lovely species, very graceful, and the flowers vary greatly in colour. The plant is slender in growth, and the flower-stems rise over 9 feet in height, bearing many flowers. Those of a brilliant scarlet colour like a flame of fire are remarkably striking seen from a distance in this woodland. Some varieties are more yellow than others, and there is considerable variation in the spotting. Few Lilies are more beautiful than this, and no great cultural difficulties have to be overcome. In a clearing in a small woodland near Heatherbank, the Lilies are in rude health, and although not in bloom at the time of my visit there was a rich promise of a splendid display from *L. lancifolium* and its varieties, *L. auratum*, and several other species. *L. Humboldti*, *L. Leichtlini*, *L. Fortunei*, and all the leading species are grown here, but *L. lancifolium*, *L. auratum*, and *L. superbum* are chiefly represented. It is interesting to notice that in this clearing, so to say, Sikkim Rhododendrons are succeeding well, having withstood the winter. There are many similar spots in gardens where they may be tried. In the conservatory attached to the house was a fine group of varieties of *L. lancifolium*. This is a delightful species, and the white variety, *album*, was remarkably well-grown; mixed with the species, it is very beautiful. It is no exaggeration to describe Wisley and Heatherbank as a veritable home of Lilies, grown in quantity, and with no coddling treatment. Similar effects are got in the Royal Gardens, Kew, from this bold use of a handsome flower.

Wisley contains a vast number of rare hardy plants, but the Lily and the Iris, particularly *I. Kämpferi*, are grown more largely than other things. This species is superb, and in late July a few flowers were still open, although by reason of the drought the plants bloomed earlier than usual. In one quarter alone there were 4000 clumps, all Mr. Wilson's seedlings, and many beautiful things may be anticipated amongst these, as all are in perfect condition. Another feature is a little brook, or ditch, winding through this portion of the garden, and on the sides *I. Kämpferi* is planted, the large clumps numbering seven hundred. They occupy the two lower rows, but the upper row is of the earlier flowering species, *I. sibirica* and others. When like varieties of *I. Kämpferi* are in full bloom, this "ditch" is a picture of colour, as Mr. Wilson takes care to select only those that are really beyond praise, fine in colour, sturdy, and effective in the garden. Too little use is made of this species in English gardens, as it is not difficult to grow, if in a good moist soil. Moisture is its chief requirement, and on that account it is useful to plant by lake, pond, or streamside. There is also a large pond, around the sides of which *I. Kämpferi* is planted. We have never seen finer growth, and, even without flowers, it has a pleasing aspect. The colours to be got in a good selection of seedlings are very varied, and it is important to avoid those that are mottled or speckled as it were, as these are not pretty, neither do they show to advantage in the garden.

Another plant made great use of at Wisley is *Rosa rugosa*. There are hedges of it, and it is interesting to know that the first hedges made of this Rose were at Wisley. It presents a strong barrier to cattle, by reason of the robust, spiny stems, and at the same time it is beautiful in aspect. The leafage is abundant, and rich glossy green in colour, whilst the large fragrant varied coloured flowers and crimson fruits appear together. There is much variation in the colour of the flowers in seedling plants, ranging from pure white to a rather deep rose-purple shade, which is far less pleasing than the soft rosy tones and pure white. The single examples of this species show its value for the garden, but we especially draw attention to its value for forming hedges.

One of the more important plants in flower in July was *Gentiana asclepiadea*, which is not sufficiently planted in gardens. It is a very fine species, loves a rather moist spot, and is not averse to a little shade. When perfectly at home as at Wisley it is remarkably beautiful, the vigorous stems clothed

with rich purple flowers; but these vary in shade, and the white variety is useful for sake of contrast. A large break of this fine *Gentiana* is very striking, and the flowers remain in beauty over a fairly long season. In full beauty also was a group of the hybrid *Gladiolus Nanceianus*, which have splendid flowers for size and colour. This hybrid is the result of a cross effected between *G. Saundersii* and *G. Lemoinei*, and the flowers are of remarkable size. One kind named *President Carnot* was especially brilliant, the flowers quite 7 inches across, and bright scarlet, the lower segments straw colour; a few plants of this in full beauty would make an effective display. *Campanula grandiflora Mariesi*, which was certificated by the Royal Horticultural Society on July 25, was in full bloom. It is not often one sees this fine plant well grown, but no great difficulty is experienced in its cultivation, and the large purple flowers are in beauty when most appreciated, in late July and throughout August.

Many hardy plants and shrubs were in bloom besides those mentioned. This garden is rich in *Hypericum*, and *H. oblongifolium* was remarkably beautiful. It is a little tender, and that may be the cause of its comparative scarcity; but in such a place as this, where sheltered by surrounding woodland, it makes luxuriant growth. The habit of the shrub is graceful, and the flowers large, and rich golden-yellow in colour. Another kind noted was *H. Moserianum*, which is a hybrid between *H. calycinum* and *H. patulum*; it is dwarf, fairly vigorous, and has large yellow flowers. *Tropaeolum speciosum* was beautiful, sending its racemes of scarlet flowers through a hedge; and the *Eryngiums* made distinct effect in colour. One patch of *Gentiana acaulis*, which grows like a weed at Wisley, had 510 of its rich blue flowers open at one time. This is the kind of gardening that greets the visitor to Wisley. *Visitor.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 25.—Present: Dr. H. Müller, in the Chair; Dr. Russell, Dr. Scott, Rev. W. Wilks, Dr. Bonavia, Rev. G. Henslow (hon. sec.), and Mr. W. Sykes (visitor).

Dianthus sp., &c.—Dr. Müller showed a specimen of a Pink from Val d'Anniviers in the Rhone Valley. It was referred to Mr. F. N. Williams for identification, and proved to be *Dianthus prolifera*, *L.* He also exhibited an "Edelweiss" from Mount Cook, New Zealand. Though the inflorescence bore much resemblance to the European form, the foliage was quite distinct, the leaves being obovate, and one-quarter of an inch in length. It was referred to Kew for identification. He also exhibited a Peach, apparently attacked by fungi. It was also referred to Kew for investigation.

Five-leaved Clover.—Dr. Bonavia showed a specimen of this tolerably well-known form from garden culture.

Preserving Fresh Ripe Fruit.—Mr. W. Sykes, of Woodleigh, East Dulwich, described some methods for preserving fruit in tins and otherwise, the air being exhausted from the tins. The following is the description of Tomatoes:—"The fruit was quite ripe and perfect; after seven days they had not altered, and kept two or three days after being exposed to the atmosphere. After fourteen days the fruit showed signs of 'sweating.' They kept the same time exposed and ate all right. After twenty-one days there was considerable sweating, after thirty days more so, after thirty-seven days still more, the juice draining out badly. The fruit throughout never lost its bright brilliant colour." A discussion arose as to the advisability of adopting the plan of exhausting the tins of air. Both Dr. Müller and Dr. Russell were of the opinion that this method was unadvisable, inasmuch as the vacuum can never be perfect, and it tended to expand the cells, and so by rupturing the tissues, "sweating" would increase. Another method described was to bury the fruit like Potatoes or Mangels:—"Apples buried straight from the trees in heaps like Potatoes, surrounded by straw and covered with earth a few inches thick, keep well into the following year. Nonpareil, a very astringent, bright-coloured, and bad keeper, loses neither colour nor flavour after being buried. Similarly Peas in

jars, covered over with a bladder and buried, were quite "fresh" at Christmas. In these and similar cases it appears to be the carbonic acid evolved by respiration of the fruit which acts as a preservative by driving away the air from the enclosed space. This tends to destroy, or at least hinder, the fermentative or putrefactive action of bacteria. Mr. Sykes hopes to communicate further results from experiments with this year's fruit.

Pelargonium ignescens, *β sterile*.—Mr. Henslow exhibited a specimen of this plant found in a cottage garden at Zeals, Dorset. On referring to Sweet's "Geraniaceæ" it appears to have been raised from the seed of *P. fulgidum* by Sir R. C. Hoare. Another seedling of the same species was *P. scintillans*. Though called "hybrids," the parentage is unknown. The word "sterile" refers to the anthers being devoid of pollen. *P. ignescens* (proper), as well as the above, are all figured by Sweet, *op. cit.*, viz., *P. ignescens*, vol. i., No. 2; *P. ign. β sterile*, i. 55; *P. scint.*, i. 28; and *P. fulgidum*, i. 69. The date given is 1821.

"Shaky" Ash wood.—Messrs. Holland & Holland of Oxford Street forwarded a remarkable specimen of the peculiarity known as "shaky timber" among carpenters. On splitting the wood, a central portion separates from the surrounding layers. It is probably due to some seasonal influence when the cambium formed an imperfect and easily separable layer.

AUGUST 8.—There was a very fine show of flowers and fruit at the Drill Hall, James' Street, Westminster, on Tuesday last. Orchids alone being poorly represented. The meeting being held on the day following Bank Holiday, such a display was more than equal to what might have been anticipated.

Floral Committee.

Present: W. Marshall, Esq., in the chair, and Messrs. J. Fraser, J. Laing, H. Herbst, J. Budde, R. Dean, G. Stevens, C. F. Bause, J. Jennings, H. B. May, T. Godfrey, Harry Turner, G. Paul, W. Bain, C. E. Shea, J. T. Bennett-Poë, T. Baines, H. Cannell, G. Gordon, P. Barr, and R. Owen. Several members of a Dutch Horticultural Society were present.

Messrs. John Laing & Sons, Forest Hill, S.E., had a fine group of ornamental foliage and miscellaneous plants, including well-coloured Crotons, finely-grown Caladiums, some plants of *Beaufortia speciosa*, &c. Caladium President de la Devansaye was given an Award of Merit. It is one of the smaller leaved varieties, and self-coloured, a coral red. A similar award was given to *Begonia semperflorens*, var. *Vernon*, shown in a group, and apparently a good hedger. The flowers are red, and the foliage reddish tinted, and the habit very dwarf. Another plant included in the group was *Babingtonia camphorosme*, a very old garden plant, but one seldom seen. It belongs to Myrtaceæ, and is a greenhouse shrub, producing pinkish-white flowers in cymes, on terminal racemes. It has a scent similar to camphor. *Dracæna Alexander* was equally successful, and it is a useful variety. A First-class Certificate was awarded to *Grevillea Banksii*, a pretty species, producing red flowers.

From Messrs. Dobbie & Co., Rothesay, N.B., came a large collection of excellent border Carnation blooms, in very fine variety, also some Sweet Peas in variety. Silver Flora Medal.

Messrs. Paul & Son, Cheshunt, were awarded a Silver Flora Medal for a collection of cut Roses, Herbaceous plants, and flowers, &c. *Liatris pycnostachya* was awarded a First-class Certificate, although an old and fine plant it had not been previously certificated. It is a hardy perennial herb, and produces its pale purple flower heads in a cylindrical spike about 1½ foot long.

Awards of Merit were recommended to *Tritoma Oairis*, a yellow one of the same size and habit as the *T. Matador*; the yellow one is very pretty; also to a pretty variety of *Phlox* called *Etna*: the flowers are rich rosy-pink, about 1 inch across; very lovely. Another plant of interest was *Clematis Davidiana*; it is an erect shrub with small pale blue flowers, producing freely from the axils of the leaves, and very sweet-scented. A large bunch of *Tropæolum speciosum* was very bright.

A plant of *Primula Poissoni* in flower was sent by Mr. G. F. Wilson, Weybridge and Wisley; flowers are light mauve.

Cannas were exhibited by several nurserymen and amateurs, in response to the invitation in the schedule, and to illustrate the lecture delivered by Mr. J.

G. Baker in the afternoon. Herr William Pätz, Stuttgart, Germany, obtained an award of merit for a variety called *Königin Charlotte*. It has large leaves, is about 1½ foot high, and the stamens are very broad, scarlet with yellow edging. Messrs. Vilmoren, Andrieux, & Co., 4 Quai Méjasserie, Paris, showed *Canna Lohengrin*, a very fine orange scarlet of good substance, and showy flower (Award of Merit). *Gloire de l'Impératrice*, a bright crimson, very large staminode, but perhaps of less substance than the other (Award of Merit), also President Carnot, a crimson of slightly duller tint, and rather loose in habit (Award of Merit). M. Lemoine, Nancy, had *Canna Capitaine de Luzzoni*, with yellow flowers having markings of pale red (Award of Merit).

An excellent variety called *Michelet* was shown by Sir Trevor Lawrence, Burford, Dorking, together with a collection; flowers are rosy-crimson, very showy (Award of Merit and Silver Banksian Medal).

Hedera Helix tessellata was shown by Miss Browning Hall, Algiers. The younger leaves are prettily variegated with yellow, but this is not so noticeable in the older ones (Award of Merit).

Messrs. Webb & Brand, Saffron Walden, showed some blooms of *Hollyhock Amaranthe*. It is an excellent florists' flower, of deep pink, large and full (Award of Merit).

A First-class Certificate was awarded to *Montbretia crocosmiflora* fl.-pl., or more properly to *Crocsmia aurea* fl.-pl., shown by Sir Trevor Lawrence. In habit it is the same as the species, but the flowers are double, and it will be useful.

The display made by Messrs. Kelway & Sons, Nurserymen, of Langport, Somersetshire, was a large and excellent one, consisting as it did of more than one hundred spikes of *Gladiolus* of the finest varieties; a stand of *Canna* blooms, a collection of *Gaillardias*, single-flowered, and some with fluted florets, like *G. Lorenziana*; and bunches of hardy flowers in a few kinds. The finest of the *Gladiolus* were *Grover Cleveland*, rosy-crimson, each segment furnished with a narrow white stripe in the middle, and blotched with white; *Arthur Henderson*, a fine dense spike, of much more than average length, and furnished with magnificent blooms of a rich carmine colour, with what looks like purple haze in the tube—it is the finest of this shade of colour; *John Warren* is a salmon-red flower, with a purplish-crimson blotch on the lower segment, and this part of the flower is of a more vivid tint than the remainder, a fine flower. These three received an Award of Merit. Others of fair quality were:—*Leonard Kelway*, a fine dark flower; *Rev. H. H. D'ombrain*, a nice pink and white one; *Andromeda*, a cream, flaked with crimson, novel and distinct; *Marciana*, of vivid crimson; *Bona*, a very compact spike of scarlet blooms; *Mrs. D'ombrain*, an excellent white variety; *Herman*, a fawn-tinted flower, with a leaning to salmon-red; and *J. C. Vaughan*, of flesh colour, with a purple shade.

Of the *Cannas*, two were granted Awards of Merit, viz., *Duchess of York*, a large yellow flower, with crimson spottings; and *Duke of York*, scarlet, irregularly bordered with yellow, very pretty and showy. A Silver-gilt Banksian Medal was the award for the group.

Amongst the cut blooms we noted a fine species of *Veronica longifolia subsessilis*; large spikes of a rich dark shade of blue.

Messrs. De Rothschild, Gunnersbury House, Acton, gr. Mr. J. Hudson, contributed a very fine group of *Campanula pyramidalis*, chiefly the blue-flowered species. The plants were tall, healthy, and well flowered, making them very highly decorative subjects. A Silver-gilt Banksian medal.

From Mr. Thomas Ware, Hale Farm, Tottenham, came a small lot of hardy flowers, and amongst them were *Milla bifolia*, *Lilium Ukeyuri*, a form of *L. longiflorum*; *Cactus Dahlias Mrs. A. Pearl*, white, and *Ernest Metz*, of rich purple colour.

Mr. G. Wythes, Sion House, showed cut blooms and foliage of *Cunila capensis*, a stove shrub with axillary terminal racemes of white flowers; and a *Cactus* with large white flowers, said to be *Cereus hexagonus*; unfortunately the exhibitor had not brought any of the growths, and the name could not be determined.

From Mr. C. F. Bause, Morland Nurseries, South Norwood, came *Croton Madame Ernest Bergmann*, a handsome simple leaf, marbled with orange and green; *Dracæna Alexander Laing*, a narrowish-leaved variety, with colour resembling that of *D. terminalis*, but with longer and more arching leaves than that variety. Both of the foregoing received an Award of Merit, as did *Caladium President de la Devansaye*, a variety of dwarf habit as seen, and blood-red leaves.

Cut blooms of showy orange-coloured single-flowered tuberous-rooted *Begonia* came from Messrs. H. Cannell & Sons, Swanley; also single and double flowered varieties including the white *Octavie*; several *Chrysanthemums* of merit, perhaps, for their earliness; and a quantity of *Tom Thumb* varieties of *Antirrhinum* (Silver Flora Medal).

Messrs. Paul & Sons, The Old Nurseries, Cheshunt, had a mixed group of hardy flowers, and we observed *Clethra spinosa*, a dwarf species, and *C. alnifolia*, with which to compare it, several varieties of *Rosa polyantha*, as *Clothilde Soupert* and *Camille Rochadelle*, H.P. La France, Madame V. Verdier, and box of cut *Roses*, of which the best blooms were *Captain Christy*, *Duke of Teck*, and *La France* (a Silver Flora Medal).

Mr. C. Holden, 61, Harwich Road, Ealing, showed a small lot of stove and greenhouse plants, amongst them the good outdoor-bedding *Coleus Distinction*, with foliage of the tint of *Perilla nankinensis*. It is a plant that remains of one uniform dwarf character all through the summer.

From Messrs. E. D. Shuttleworth's nurseries, Peckham Rye, S.E., and Fleet, Hants, came cut *Roses*, *Gladiolus* varieties of the *Colvilli* section, some very choice *Phloxes*, *Pentstemons*, *Petunias* with variegated leaves; *Scabiosa caucasica* var. *grandiflora*, light blue in colour, and a good thing if constant as regards the size and form of bloom. A Carnation of an unusual shade of orange colour was shown by Mr. F. Ball, Wormingford, Colchester.

Messrs. J. Cheal & Sons, nurserymen, Crawley, exhibited dwarf *Antirrhinum*s, some good *Pentstemons*, a quantity of *Dahlias* as cut blooms, of all sections of the *Dahlia*—show, fancy, decorative, *Pompone* and *Cactus*, and a quantity of very vigorous *Sweet Peas*, remarkable for the length and strength of the flower-stalks.

Orchid Committee.

Present: Dr. Maxwell T. Masters, F.R.S., in the chair; Jas. O'Brien (Sec.), Sydney Courtauld, T. Statter, F. Sander, J. Douglas, E. Hill, Hugh Low, H. M. Pollett, and W. H. White.

Sir Trevor Lawrence, Bart., Burford, Dorking, grower Mr. W. H. White, staged a small group of rare Orchids, for which a Silver Banksian Medal was awarded. It consisted of *Lælio-Cattleya* × *Philbrickiana* (*Cattleya Aclandiae* × *Lælia elegans*), *Lælio-Cattleya* × *Blessensis* (*L. pumila* × *C. Loddigesii*), *Miltonia spectabilis*, a fine variety, with four large flowers; the very pretty *Aganisia ionoptera* (Botanical Certificate); *Cypripedium* × *Harrisifroyæ* (*Harrisianum* × *Godefroyæ*), and which in its large pale flowers much resembled *C. × Mrs. Canham*; *C. × Cæo-superbiens* (*Cenanthum* × *superbiens*), a very fine hybrid, somewhat resembling *C. × Pollettianum*. The whole flower has a shining surface. The flat upper sepal is greenish at the base, spotted with chocolate, which in the upper portion merges into a rosy-purple hue, the whole being margined with white; the lip and petals were tinged with rose (Award of Merit). A spike of the very beautiful *Schomburgkia Lyonii*, another of *Lælio-Cattleya elegans*, *Purple Prince*, four noble sprays of *Aërides Sanderianum*, and a flower of *Sobralia Warszewiczii* were included.

Messrs. F. Sander & Co. also secured a Silver Banksian Medal for a group of rare Orchids, among which were *Cypripedium* × *Thayerianum* (*Lawrenceanum* × *Boxalli atratum*) a very fine and richly-coloured hybrid (Award of Merit), *C. × Macfarlanei* (*calophyllum* × *Spicerianum*), *C. × Youngianum* (*philippense* × *superbiens*), the beautiful violet and mauve *Calanthe Sanderiana*, by far the best of the *Veratrum*-leaved *Calanthes*; fine plants of *Aërides Sanderianum*, the curious *Grobya Amherstiae*, *Vanda Sanderiana*, several *Cattleya Gaskelliana*, one of them having white sepals and petals; *Oncidium Kramerii*, *Grammatophyllum Fenzlianum*, *Aërides Ballantinei aureum*, &c.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. W. Stevens), showed a spike of a fine new form of *Lælia tenebrosa* named *L. t.* Walton Grange var. (see p. 179), in which the sepals and petals were clear citron-yellow, the labellum purplish-crimson on a white ground (First-class Certificate). Also a spike of *Oncidium spilopterum* (*Bot. Reg.*, xxxi., t. 40), which has been erroneously described and distributed as *O. Saintlegerianum*, and also erroneously placed under *O. Batemanni*, from which it is quite distinct (see *Gardeners' Chronicle*, Jan. 7, 1893, p. 10, and Feb. 25, p. 227).

Major Joicey, Sunningdale Park, Sunningdale (gr., Mr. F. J. Thorne), exhibited a grandly-grown specimen of *Vanda Sanderiana*, for which a Cultural Com-

mentation was awarded; a cut spike of a fine form of *Cattleya granulosa* Schofieldiana, and a very singular and showy natural hybrid *Miltonia*, M. × *Joiceyana*, which received a First-class Certificate (see *Gardeners' Chronicle* next issue). T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed cut spikes of *Lælio-Cattleya Schilleriana* Johnsonii, one of the finest of its class; and of two varieties of *L.-C. elegans* of the *Turneri* section. F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent a specimen of *Earina suaveolens*, a curious New Zealand Orchid, in growth like a small Bamboo, and with terminal racemes of small white fragrant flowers (Botanical Certificate). R. J. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), exhibited *Cypripedium* × *Nama superba*, C. × *Youngianum*, and *Masdevallia Lowii*, the last-named an extraordinary species, illustrated in the *Gardeners' Chronicle*, Sept. 6, 1890, from the type-plant in the possession of Sydney Courtauld, Esq., who received a First-class Certificate for it in August of that year. Messrs. Jas. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, sent *Lælia* × *Novelty* (*L. pulchra* Dayana × *L. elegans*), which showed marked improvement since it was last exhibited, and on this occasion was given an Award of Merit; and Mr. Owen Thomas, from the Royal Gardens, Windsor, sent a fine plant of a superb variety of *Rhynchosyris guttata* (Vote of Thanks); and a plant of *Saccolabium Blumei majus* with one fine spike.

Fruit Committee.

Present: J. Lee, Esq., in the chair, and Messrs. W. Wilks, T. J. Saltmarsh, J. Cheal, G. Bunyard, J. Willard, G. Wythes, H. Balderson, Robt. Hogg, F. Q. Lane, Geo. Taber, and J. Hudson.

Messrs. Jas. Veitch & Co., Chelsea, contributed a collection of Fruit, including amongst a good number of Apples, very fine examples of Lord Grosvenor, Red Astrachan, Winter Hawthornden, Warner's King, Grenadier, Worcester Pearmain, and Frogmore Prolific.

Plums were present in about thirty dishes, all of them of good average quality, and excepting one dish of Kirke's, they had all been taken from pyramids in the open. Prince Englebert, Early Transparent Gage, Belle de Louvaine, Belgian Purple, Large Black Imperial, Victoria, Jefferson, Angelina Barette, Woolston Heath, McLaughlin, were amongst those most noticeable. Some few Pears, Cherries, Raspberries, and orchard-house trees carrying Peaches and Nectarines completed the exhibit (Silver Knightian Medal).

Another fine collection of fruit was from Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley. Lady Sudeley, Grand Sultan, Worcester Pearmain, Pott's Seedling, Queen, White Astrachan, and Lord Suffield were very good amongst the Apples, and of Pears, Souvenir du Congrès, Beurré Giffard, Clapp's Favourite, and Williams' Bon Chrétien were good. Plums were shown in fifteen varieties, amongst which were Victoria, Cox's Emperor, Oullin's Golden Gage, Prince Englebert, in fine condition. A very pretty collection of ornamental Gourds were also included (Silver Banksian Medal).

Pine Apples were extremely well shown by Mr. R. Nicholas, Castle Hill Gardens, South Molton. There were eleven fruits of large size and excellent quality (Silver Banksian Medal). Several new Melons were shown, and three of them obtained awards of merit. Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, had a green-fleshed Melon called Hero of Isleworth, obtained from Wythe's Seedling × Syon House. It is a small fruit, very well netted, rather deep flesh, and particularly sweet (Award of Merit). Mr. W. Palmer, Cobden Villas, Andover, had Royal Prince, obtained from Triumph × Hero of Lockinge, a small yellow fruit, slightly netted, light coloured flesh, sweet and full-flavoured (Award of Merit); also County Councilor, from Triumph × Blenheim Orange, a green fruit fairly well netted, flesh high colour, and very firm (Award of Merit). Other Melons came from Mr. Thomas Webster, gr. to R. H. Murray, Esq., Springfield, Great Marlow, and from F. C. Carr-Gomm, Esq., Farnham Chase, Farnham Royal, Slough (gr. Mr. A. J. Reid); also from Mr. T. W. Lansom, Widworthy Court Gardens, near Honiton, Devon.

Mr. E. Thomas, Maresfield Park, Uckfield, Sussex, showed some fruits of a red-fleshed Peach called Red Dragon. The colour does not enhance their appearance, which was repulsive rather than attractive.

Mr. Owen Thomas, gr. at the Royal Gardens, Windsor, showed twenty-one dishes of Peaches and Nectarines, in as many varieties. Many of these

were represented by large and highly-coloured fruits; such were Stirling Castle, Pine-apple, Hardwicke Seedling, &c.; also a couple of Melons (Silver Banksian Medal).

Messrs. Geo. Bunyard & Co., Maidstone, received a Cultural Commendation for a dish of Lady Sudeley Apples, exceptionally well coloured and pretty, and said to have been produced by poor soil. Several Pears were also shown, such as Reine Giffard, Petite Marguerite, and Précoce de Trevouf.

Mr. A. J. Freer, Nelson Road, New Brompton, Kent, had fruits of Tomato Freer's Abundance, a perfectly smooth, good-looking fruit (Vote of Thanks).

Messrs. Jarman & Co., Chard, Somersetshire, had a new Ridge Cucumber, called Baker's Triumph, a large one for such purpose.

Mr. G. H. Mackereth, Ulverston, showed a seedling Potato, George Dickson, described as an excellent cropper, boiler, and disease-resister. It has a clean skin, is nearly round, and has small eyes, but a little deep.

Lecture on Cannas, by Mr. J. G. Baker.

The paper read at the Drill Hall before the members of the Royal Horticultural Society last Tuesday, was by Mr. J. G. Baker on Cannas. He explained first how that in the Scitamineæ the showy, brightly coloured part of the flower consisted not of the flower-wrapper, but of the altered stamens, and that only a single anther instead of six was developed. For the classification and nomenclature of the true species he referred to the paper which appeared in our columns in spring. He said that, from a horticultural point of view there were five types in the genus. Firstly, comparatively dwarf little-branched, true *Canna*; secondly, tall true *Canna* cultivated for their foliage; thirdly, *Canna edulis* grown for its tubers; fourthly, the monotypic *Eurystylus* type represented by *C. flaccida*; and fifthly, the long-tubed *Achiridia* type represented by *C. iridiflora* and *C. liliiflora*. Tracing out the history of the genus he showed that at the present time the pure species have gone out of cultivation and are represented by handsome hybrids.

The great mass of the garden Cannas now grown he traced back to *iridiflora*, crossed with *glauca* and *Warszewiczii*.

Finally, Mr. Baker said that Messrs. Dammann have lately crossed *flaccida* with *iridiflora* and the true *Canna*, and have thus produced two hybrid types of new parentage. The paper will be printed in detail in the *Journal of the Horticultural Society*.

SOUTHAMPTON HORTICULTURAL.

AUGUST 5, 7.—The annual summer exhibition was held in the Society's beautiful grounds, Westwood Park, and was a great success horticulturally, and, we trust, financially. This Society has suffered recently, the residents of the town not supporting it as they ought. The arrangements were, as usual, perfect, under the guidance of Mr. Fuidge, the energetic secretary, assisted by an efficient committee.

In the great class for ten stove or greenhouse, half foliage, and the remainder flowering, there were four competitors. Mr. F. C. Jennings, gr. to W. Garton, Esq., Roselands, Woolston, was an easy 1st, his plants of *Latania borbonica* huge of size; *Kentia Fosteriana*, in grand health; *Croton Warneri*, beautifully coloured; while *Stephanotis floribunda*, *Allamanda Hendersoni* and *A. nobilis* were profusely flowered. Mr. T. Wilkins, gr. to Lady Theodora Guest, Inwood House, Blandford, was a good 2nd. The *Crotons* in this exhibit were richly coloured.

Mr. Jennings was again 1st in the class for six specimens; amongst others he staged a wonderfully coloured *Croton angustifolius*; Mr. W. Peel, gr. to Miss Todd, Sidford Lodge, Shirley, 2nd.

Still another class was provided for specimens, but open only to gardeners. Mr. T. Hall, gr. to S. Montague, Esq., M.P., South Stoneham House, Southampton, secured the 1st award; *Eucharis amazonica*, with twenty-seven spikes of bloom in rude health, was noticeable in this collection.

Mr. Ams, gr. to the Hon. Lady Elliott Yorke, Netley, was an easy 1st in the class for a specimen plant in flower, showing a plant of *Allamanda Hendersoniana* fully 7 feet across, and profusely flowered.

Exotic Ferns were really well shown. Mr. Jennings was 1st for six, and Mr. Ams a close 2nd.

Exceedingly dwarf, with large heads of bloom, were the 1st prize Cockscombs from Mr. E. J. Wilcox, gr. to Lieut.-Col. Silkins, Aldermoor House, Shirley. *Celosias* were a distinct feature, so well were they

grown and flowered by Mr. West, gr. to H. J. Wigram, Esq., Northlands, Salisbury. The specimens of *Coleus* were better than usual, Mr. Hall taking 1st prize for six pyramids, brightly coloured. Mr. Blandford, gr. to Mrs. Haselfoot, Bitterne, secured leading prizes for both double and single flowered Zonal Pelargoniums. Mr. Wills was 1st for Begonias, both double and single-flowered varieties.

Groups arranged for effect were a distinct feature. In the large class Mr. Wilkins led the way with an arrangement that left little to be desired, so well were the plants suited for the purpose, and so effectively arranged. Mr. Wills was a close 2nd.

In the smaller class several meritorious exhibits were to be found. Mr. Peel was placed 1st with a bright yet effective arrangement. Hardy Ferns were well shown by Mr. Busby, gr. to F. Willan, Esq., Thornhill Park, Bitterne, who secured leading honours.

CUT FLOWERS.

These exhibits made a bright display. Messrs. Keynes, Williams & Co., Salisbury, won first award for twenty-four Roses distinct, with really good blooms. Hardy herbaceous flowers were numerous and well shown. Mr. Ladhams, florist, Shirley, beat his somewhat strong opponent, Mr. Maurice Prichard, Christchurch, Bournemouth, both staging remarkably well. Stove and greenhouse flowers were best shown by Mr. Budd, gr. to F. Dalgety, Esq., Lockerley Hall, Romsey, winning, but Mr. Evans, gr. to Lady Louisa Ashburton, Melchet Court, Romsey, ran close. Dahlias, both show and pompons, were well shown by Messrs. Keynes, Williams, & Co., and Mr. West, who were awarded honours in the order mentioned.

Table decorations, though pretty, were not strikingly good. Mr. B. Ladhams, Shirley, being placed 1st. Messrs. Perkins were invincible both with ball and bridal bouquets. Mr. Ladhams had by far the best epergne decoration.

FRUIT.

This was generally very good. In the class for six dishes, Pines excluded, no fewer than eight persons competed. Mr. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was decidedly ahead of all others with Muscat of Alexandria and Black Hamburg Grapes, Dryden Nectarines, Hero of Lockinge Melon, Brunswick Figs, and Sea Eagle Peaches; Mr. Inglefield, gr. to Sir J. Kelk, Bart., Tedworth, Marlborough, was a most creditable 2nd. For three bunches of black Grapes, Mr. Henbest, gr. to Lady Kennard, Crawley Court, Winchester, won with Black Hamburg, capital in every respect. In the white Grape class, Mr. Molyneux, gr. to W. H. Myers, Esq., M.P., Swanmore Park, Bishop's Waltham, was easily 1st, with Muscat of Alexandria of great size in bunch and berry; Mr. Ward 2nd, with the same variety. Mr. Busby was 1st for two bunches of black Grapes; as were Mr. Henbest for a single bunch of any variety of black Grape, and Mr. Molyneux for any white one, all of these exhibitors staging well.

Melons were a strong class. Mr. Henbest won for scarlet. Mr. Ward 1st for any green-flesh, showing The Bouverie, a charming variety.

Peaches were largely shown. Mr. Inglefield won with handsome fruit of Barrington. Mr. H. Drover, Shanklin, Isle of Wight, staged exceedingly handsome fruit of Pine-apple in the class for a single dish of Nectarines. Mr. Busby was 1st for six dishes of hardy fruits, distinct—a fine exhibit; Mr. Budd 2nd.

VEGETABLES.

As usual, were staged in large numbers, and of excellent quality. For nine distinct varieties there were no fewer than seven competitors. Mr. Wilkins was a somewhat easy 1st, with a collection good all round; Excelsior Onions, Satisfaction Potato, and A 1 Runner Beans were very fine. Mr. Inglefield was 2nd. Mr. Wilkins won the premier prize award in the class for six varieties, offered by Messrs. Sutton & Sons, Reading, with a similar collection to that staged in the former; Mr. Hughes was 2nd. Mr. West was 1st for eight varieties of Potatoes, as were Mr. Wilkins for a single dish of Kidneys, and Mr. West for Rounds. Tomatoes were a strong class, and Mr. Ladhams was 1st.

MISCELLANEOUS.

Mr. Rogers, Red Lodge Nurseries, Southampton, staged two splendid groups of shrubs and plants, but not for competition. Messrs. Keynes, Williams & Co., Salisbury, sent a collection of Cactus and Pompon Dahlias.

Mr. Ladhams staged a thoroughly good collection of hardy cut flowers; Mr. J. Miles, gr. to W. N. Perkins, Esq., Portswood, had a somewhat novel exhibit.

Apples (French Crab) and Filberts grown during the years 1891, 1892, and 1893, all being in a good state of preservation.

WELLS HORTICULTURAL.

AUGUST 7.—The summer show of the Floral Society was held in the Palace grounds, Wells, by the permission of the Bishop. Roses, which were numerous and good last year, were sparingly staged. In the class for twenty-four H.P.'s distinct, Messrs. Cooling, nurserymen, Bath, were the only exhibitors, staging rather small but brightly-coloured flowers: Pride of Waltham, Horace Vernet, and Mdme. Gabrielle Luizet being particularly good.

In the class for twelve varieties distinct, Messrs. Cooling were again 1st, and Mr. Young, gr. to W. S. Hodgkinson, Esq., 2nd.

Groups of plants arranged for effect were asked for, for the first time this year, and six groups were arranged in response. Mr. Fewtrell, gr. to C. C. Indway, leading with a beautiful arrangement—Pancratiums, Lilioms, brightly-coloured Crotons, and Cocos Weddelliana being conspicuous.

Mr. Williams, gr. to J. F. Hall, Esq., was a good 2nd, having highly-coloured Crotons, Anthuriums, Orchids, &c.

The 1st prize for specimen plants was won by Messrs. Williams, and 2nd by Mr. Fewtrell. For two specimen Ferns, Mr. Fewtrell was 1st, and Mr. Williams 2nd.

For six table plants Mr. Williams was again 1st, Mr. Young 2nd. Fuchsias, trained plants, were well represented, Mr. Gardner's plants being well worth the 1st award.

Gloxinias, Carnations, and Begonias in pots were sparingly represented. Messrs. Stokes, King, Fewtrell, and Marshall being 1st in each respectively.

FRUIT.

This was, as usual at Wells, a very fine show. Melons were a magnificent class, there being not a badly-flavoured fruit among them, and showing how favourable the recent tropical weather has been for them. Mr. Payne led by one or two points, Mr. King being a good 2nd with a much smaller but superbly flavoured fruit.

For two bunches of black Grapes, Mr. Payne, gr. to the Bishop of Bath and Wells, was placed 1st with superb clusters of Alicante; Mr. Fewtrell being 2nd, with Black Hamburgs, fine in bunch and berry. In the class for two bunches of white Grapes, Mr. King, gr. to the Dean of Wells, led rather easily with very fine clusters of Muscat of Alexandria, rather under ripe.

Mr. Thyer was 1st for Peaches, Mr. Williams 2nd. Apples, Pears, Cucumbers, and Tomatoes were largely shown and excellent; Messrs. Payne, McKenzie, and Igar being the prize winners.

Dinner tables laid and decorated for six persons were a feature in the conservatory, which had been cleared for the purpose. 1st, Miss Fyfe, with a chaste arrangement of lightly tinted Rose-buds; 2nd, Mrs. Igar. The show was a success in every way.

NORTHAMPTON HORTICULTURAL.

AUGUST 7, 8.—This exhibition is yearly increasing in popularity within the district represented by its being held on Bank Holiday and succeeding day; the show is literally thronged with visitors, the grounds of Delapre Park being contiguous to the town of Northampton. It is essentially a show for the masses, the entrance on the first day being only 1s., and on the second 6d. Before six o'clock in the evening of the first day it was estimated that fully 10,000 persons were present in the grounds.

PLANTS.

Stove and greenhouse flowering and fine foliage plants, twelve varieties, are always well represented at this show. On this occasion as before the competition was very keen between Mr. Finch, gr. to J. Marriott, Esq., Coventry, and Mr. Jas. Cypher, Queen's Road Nursery, Cheltenham, the former earning a well deserved victory by the superior quality of his flowering plants; these were *Ixora Williamsii*, a grand specimen, as fine as it has ever been shown, the plant, some 6 feet in height and 5 feet in diameter, carrying an immense number of its large clusters of bloom; with this was a fine plant of *I. amabilis*, nearly as large; a profusely flowered and large plant of *Lapageria rosea*, a fine *Allamanda Hendersoni*, and good examples of *Dipladenia amabilis* and *Erica Irbiana*. The finest of the foliage plants were *Cycas circinalis*, two capital *Kentias*, and the same of *Crotons Warreni* and *Prince of Wales*.

Mr. Cypher was strongest in foliage plants by several points, he having *Croton angustifolius* and *C. Queen Victoria* in the finest possible condition, the first-named quite a fountain of gold. Two fine *Kentias* were staged here also, and an immense plant of *Latania borbonica*; the finest of the flowering plants was *Erica Eweriana*, beautifully coloured, a good plant of *Bougainvillea glabra*, and another of *Allamanda nobilis*. These two groups of twenty-four plants were grand features in the immense circular tent.

In a smaller class for flowering and foliage plants, Mr. Lanchbury, gr. to C. Watkin, Esq., Westfield, Wellingborough, was easily 1st, his finest plants being two immense plants of *Zamia Vroomii* and *Encephalartos Alstensteini*, fully 10 feet in diameter in each case, and more in height, and a very superior plant of *Hemantthus Katherineæ* with seven large trusses of its deep orange-red flowers. Mr. Holland, gr. to W. Jeffery, Esq., Beaumont Villa, was 2nd with smaller plants, including *Rondeletia speciosa major*, *Euphorbia splendens*, and *Dracæna Draco*.

FERNs.

In the Fern class there was a keen competition again, six collections being staged; the best all-round lot was that staged by Mr. Holland, which included two finely-grown *Gymnogrammas*, and equally as good *Adiantums* (*A. cuneatum* and *A. Farleyense*); Mr. Lanchbury followed very closely with first-rate examples of *Davallia sibiensis plumosa*, *Adiantum trapeziforme*, *A. Owenii*, and *A. concinnum latum*.

Fuchsias.—The best were staged by Mr. Beard, Great Brington; Mr. Kightley, gr. to Sir H. Wake, Courteen Hall, being a good 2nd. *Coleus* in good variety were best from Mr. Copson, gr. to Mrs. Phipps, Collingtree Grange, who had plants of pyramidal growth.

GROUPS.

Mr. Jas. Cypher was 1st with a beautifully arranged group (space 20 feet by 12 feet), facing all ways. The leading design being a central mound in which *Phoenix rupicola* was the chief feature, four smaller mounds occurring towards each corner, where *Cocos Weddelliana* and *Areca lutescens* played important parts; the groundwork was *Maidenhair Ferns*, amongst which were dotted here and there small plants of Orchids, such as *Oncidium Krameri*, *O. flexuosum*, and *Odontoglossum Harryanum*, with several nice pieces of *Cattleyas*. Small *Crotons* were also used with good effect, so were little plants of *Francoa ramosa*. Messrs. Thomas Perkins & Sons were a good 2nd in this class, *Lilioms* and light plants of *Crotons* being used with good effect.

In the amateur's class for a group of similar size Mr. Holland was 1st with a light arrangement, such palms as *Cocos Weddelliana* and *Phoenix rupicola*, with *Dracæna gracilis*, being tastefully employed; Orchids, *Pancratiums*, and *Lilioms* being prominent flowering plants.

Tuberous *Begonias* were shown best by Mr. Holland, and table plants by Mr. Pearce, gr. to S. Loder, Esq., Floore House, Weedon; Mr. Cole, gr. to Earl Spencer, Althorpe, following in the latter class. *Cockscombs* were exhibited remarkably well by Mr. Mackinlay, gr. to Sir C. Isham, Lamport Hall, dwarfier plants from Mr. Copson being placed 2nd.

CUT FLOWERS.

For an arrangement for the dinner table, combined with dessert, Mr. Cypher was 1st with a tasteful arrangement, the central stand being the leading feature: Orchids, *Ixoras*, and *Dipladenias*, with *Francoa ramosa*, being the principal flowers therein. Mr. Vause, Milverton Nurseries, Leamington, was 2nd; but this exhibit lacked finish.

The Roses were good, considering the season. Messrs. John Perkins & Son were 1st for twenty-four blooms; these were fresh, bright, and of average size. Mr. Bennett, gr. to Rev. W. H. Jackson, Stagsden Vicarage, Bedford, was a near 2nd, but was placed 1st for a good box of Tea-scented with bright flowers; Messrs. Thos. Perkins & Sons coming in a capital 2nd.

Mr. Finch had by far the best box of cut flowers in the open class, showing strongly with such good things as *Erica aristella*, *E. Fairriana*, *E. insignis*, with *Ixoras*, *Dipladenias*, and *Allamandas*. Messrs. Thos. Perkins & Sons were 2nd with a fresh but much smaller exhibit.

In another class Mr. Kightley was 1st with large bunches of useful everyday stove and greenhouse flowers, *Eucharis Mastersii* and *Bignonia jasminoides* being included. The same exhibitor was 1st for hardy border flowers with a good assortment of things in season. The best bouquets were both from Mr. Cole,

one exhibitor who showed well not having noted the wording of the schedule carefully.

FRUIT.

This part of the show was excellent. Mr. Goodacre, Elvaston Castle Gardens, Derby, was 1st for a collection of eight dishes, the finest among which were Muscat Hambro' Grapes, uncommonly good and well coloured, with capital Muscat of Alexandria, a fair Queen Pine, and fine dishes of Peaches and Nectarines, as well as Williams' Bon Chrétien Pears. Mr. Birch, gr. to Marquis of Northampton, Castle Ashby, was a near 2nd, his best exhibits being splendid examples of Madresfield Court Grapes and Sea Eagle Peaches, with a good Melon, "The Countess." Mr. Cole came also very near for 3rd place in this class.

For six dishes Mr. Mackinlay was 1st, Gros Maroc Grapes and Dr. Hogg Peaches being the best dishes.

Mr. Birch was a splendid 1st for Black Hamburg, with large bunches with medium-size berries, but as black as Sloes; Mr. Copson was 2nd with larger berries not so well coloured.

Mr. Jordan, gr. to Viscount Clifden, Holdenby House, was 1st with White Grapes, Muscat of Alexandria, fine in bunch, berry, and colour being the variety; the next best being Foster's Seedling, from Mr. Alexander, gr. to Messrs. Westley & Sons, Busworth.

The best Peaches and Nectarines were shown by Mr. Pearce, Royal George and Pine Apple being the varieties.

VEGETABLES.

In the two classes for collections the competition was intensely keen, but few points separating the most successful exhibitors. Mr. Copson was 1st for twelve varieties; his finest dishes were the Tomatoes, Carrots, Celery, Autocrat Peas, and Ne plus ultra Runner Beans. Mr. Kightley was 1st for nine kinds, his best being Celery, Lemon Rocca Onions, Snowdrop Potatoes and Snowball Turnips. In each case Mr. Cole was 2nd with first-rate produce, weakening himself somewhat by showing in two classes.

MISCELLANEOUS EXHIBITS

were numerous. Messrs. Thos. Perkins & Sons had a large space filled with fruit trees in pots, bearing good crops, with a large number of good dishes of Apples and Plums in season, as well as hardy cut flowers in variety, and designs in the forms of a wreath and a harp [?], with bouquets; plants in flower being also included, chiefly good strains of Tuberous *Begonias*. Onions, spring-sown, finely grown, came from the same source, staged with their tops upon them, as they should be at this season of the year.

Messrs. John Perkins & Son had a large group of Roses in pots in flower, with Clematis, &c., and some fine dishes of fruit, chiefly Apples, these latter and the Roses being particularly good.

In the Amateurs' classes, as well as the Cottagers', the produce was of the very best description, evincing the best of cultivation, and that in spite of a season not by any means favourable to vegetables at least.

Another good exhibit here was that of Mr. Clarke, Milton, which comprised finely-grown black Grapes, Tomatoes and Cucumbers, and another from Mr. Cruickshank, of Peaches and Nectarines, also of *Passiflora edulis* fruit. H.

GARDENING AND FORESTRY EXHIBITION.

AUGUST 9.—A show of foliage plants and hardy flowers, &c., was held at Earl's Court on Wednesday. There was but little competition, though with a large number of uncompetitive exhibits the tent was well-filled.

The first class for a group of flowering and foliage plants to occupy a space of 200 square feet was only entered by Messrs. Jno. Laing & Sons, Forest Hill, S.E., but their exhibit was a most praiseworthy one, exceptionally rich in choice plants, both foliage and flowering, and the whole exhibiting good taste in arrangement.

Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, was 1st in the group arranged for effect by amateurs on space 100 feet square. The group was composed chiefly of foliage plants, and would have been brighter had a little more flower been included. A nice lot of young *Dracænas* were noticeable.

For a group of *Lilioms* in pots, the prize went to Mr. Chas. Turner, The Royal Nurseries, Slough,

whose plants were good, and for the most part were varieties of *L. lancifolium*.

Mr. W. Home, gr. to J. Tate, Esq., Park Hill, Streatham Common, was 1st for a group of Crotons and Dracenas upon a space of 72 feet. The whole of the plants were well grown, but the Crotons might have been more highly coloured, and to advantage.

CUT FLOWERS.

The 1st prize for a group of hardy flowers, arranged on the ground for effect in a space 100 square feet (open), was taken by Messrs. Paul & Sons, Cheshunt, for a very excellent collection, including a good number of varieties, and in fine condition.

For a similar group arranged on fifty square feet by amateurs, the 1st prize was taken by Mr. Geo. Wythes. Twenty-four bunches of hardy flowers, distinct (open), were best shown by Messrs. Paul & Sons, Cheshunt. Their Phloxes, Helianthus, and Gaillardias were excellent.

Mr. M. Cuthbertson, Rothesay, Scotland, was a first-rate 2nd here, his flowers were very fresh.

In the amateur division the 1st prize was taken by Mr. A. Newell, gr. to Sir E. Saunders, Fairlawn, Wimbledon, for a very creditable collection.

FRUIT.

There was only one class for fruit, and in this was included six dishes. The competition was good, and the 1st place was taken by Mr. Wythes, who showed Morello Cherries, Royal George Peach, Williams' Bon Chrétien Pear, Pine-apple Nectarines, Worcester Pearmain Apple, and Jefferson Plum; Mr. G. H. Sage was 2nd, and included in his collection a dish of excellent Mulberries; Mr. A. Hester, gr. to W. G. Dawson, Esq., The Links, Plumstead Common, was 3rd.

MISCELLANEOUS.

These were numerous, and formed at least an equal part of the whole.

Messrs. Barr & Son, Covent Garden, took up the whole of one end with a collection of hardy flowers in extensive variety.

Messrs. Kelway, Langport, Somerset, had their group of Gladioli, &c., noticed at the show at the Drill Hall on the previous day; and Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, staged their collection of fruits noticed at the same time and place, also a collection of Sweet Peas, Dahlias, &c. Mr. J. Walker, Thame, Oxon, had a collection of Dahlia blooms, and Mr. Jno. Forbes, Hawick, Scotland, a collection of East Lothian Stocks, and some very fine Hollyhocks. Messrs. W. Barron & Son, Elvas-ton Nurseries, Borrowash, Derby, had sprays of ornamental deciduous trees, and Mr. M. Cuthbertson, Rothesay, Scotland, a large collection of hardy flowers.

Messrs. S. Spooner & Sons, Hounslow Nurseries, Middlesex, staged a nice collection of Apples. Lady Sudeley was shown in first-rate condition, as were many others.

Mr. J. Hudson, gr. to Messrs. Rothschild, at Gunnersbury House, Acton, had a group of Camranulas, and the excellent Pine Apples from Mr. R. Nicholas noticed at the Drill Hall were here also.

A choice collection of fruit was staged by Mr. J. T. Hoar, gr. to T. J. Cooper, Esq., The Grange, West Moulsey; the collection was very representative.

Messrs. Alex. Cross & Sons, 19, Hope Street, Glasgow, and 79, Mark Lane, London, had a stand of Cross's Fertiliser, and Murray's Electric Mildew and Insect Destroyer.

Mr. E. F. Such, Maidenhead, had a good collection of hardy flowers, and Mr. T. A. Hester a collection of fruit.

Obituary.

THOMAS LAXTON.—We regret to record the death of Thomas Laxton, of the Girtford and Kimbolton Nurseries, Sandy and Bedford, which took place on Sunday, August 6, in the sixty-third year of his age. Mr. Laxton will be best known to the gardening fraternity for his successes in raising new varieties of Peas, Runner Beans, and Strawberries, some of these having become almost indispensable in good gardens. Of Peas, we may name Supreme, Prolific, Superlative, William I., Fillbasket, Omega, Supplanter, Unique, Dr. Hogg, and Connoisseur; of Beans, Girtford Giant; of Strawberries, Noble, John Ruskin, Sensation, Scarlet Queen, Latest of All,

Commander, La France, Cardinal, and Laxton's No. 1, the earliest of all Strawberries.

Most of the above of Laxton's raising are of so much excellence, that they are certain to form the best memorial of him for many years to come.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
	Above (+) or below (—) the Mean for the week ending August 5.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.				
0	1 —	81	0	+ 445	— 57	2 +	131	23.0	16
1	1 —	95	0	+ 263	— 21	1 +	109	14.3	28
2	1 —	118	0	+ 290	— 62	6 +	94	12.2	35
3	1 —	124	0	+ 374	— 37	5 +	93	11.2	34
4	1 —	122	0	+ 498	— 47	2 +	92	11.6	41
5	1 —	133	0	+ 428	— 43	1 +	87	11.8	41
6	1 —	101	0	+ 391	— 63	1 —	106	19.8	44
7	0 aver	121	0	+ 531	— 91	1 —	97	14.4	26
8	0 aver	125	0	+ 565	— 70	2 +	90	17.4	50
9	1 —	105	0	+ 441	— 104	4 +	115	17.3	36
10	1 +	125	0	+ 492	— 100	2 +	103	16.6	35
* 0 aver	141	0	+ 649	— 52	0 aver	96	13.2	72	56

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 5, is furnished from the Meteorological Office:—

"The weather was again unsettled and changeable, and at times rainy in all parts of the kingdom. Thunderstorms were very prevalent over the east and north-east of England towards the end of the period, and the rainfall in those regions was heavy.

"The temperature was slightly above the mean in 'Ireland, S., and just equalled it over the western parts of England and the Channel Islands. In all other districts there was a slight deficit. The highest of the maxima were recorded at most stations either on the 3rd or 4th, and ranged from 74° in 'England, S., and 73° in the 'Midland Counties,' 'England, S.W., and the 'Channel Islands,' to 66° in 'Scotland, N.' The lowest of the minima were registered on August 1, when the thermometer fell to 40° in 'Scotland, N. and E.' and the 'Midland Counties,' to 41° in 'Ireland, N.,' 42° in 'Scotland, W.' and the 'Midland Counties,' and to between 45° and 49° in most other districts; in the 'Channel Islands,' however, the lowest reading was 56°.

"The rainfall exceeded the mean in nearly all districts, but just equalled it in the 'Channel Islands,' and was rather less in 'Scotland W.' and 'England, N.W.' In 'England, N.E. and E.' the excess was very considerable.

"The bright sunshine was less than the normal in most of the 'Wheat producing,' while it was somewhat in excess in the majority of the 'grazing' districts. The percentage of the possible duration ranged from 16 in 'Scotland, N.,' to between 34 and 44 in most other districts, to 50 in 'England, S.W., and to 72 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, August 10.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

MARKET heavily supplied with all classes of goods, prices being practically ruled by buyer. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0- 6 0	Oranges, per case ... 20 0-30 0
Cobs, per 100 lb. ... 2 0- 4 0	Peaches, per doz. ... 1 0- 6 0
Filberts, per 100 ... 30 0- 0	Pine-apples, St. Michael ... 2 0- 5 0
Grapes, per lb. ... 0 9- 1 6	Plums, p. half-sieve, 1 6- 2 6
Lemons, per case ... 18 0-30 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 6- 0	Mushrooms, punnet 2 0-
Beet, red, per dozen 2 0- 3 0	Mustard and Cress, punnet ... 0 4- 0
Carrots, per bunch ... 0 4- 0 6	Parsley, per bunch ... 0 3- 0 6
Cauliflowers, each ... 0 3- 0 6	Shallots, per lb. ... 0 6- 0
Cucumbers, each ... 0 2- 0 6	Tomatoes, per lb. ... 0 8- 0 9
Endive, per dozen ... 2 0- 3 0	Turnips, per bunch ... 0 4- 0 6
Herbs, per bunch ... 0 9- 1 0	
Lettuces, per doz. ... 1 6- 2 0	

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0- 4 0	Orchids:—
Aster, dozen bun. ... 3 0- 6 0	Cattleyas, 12 blms. 6 0-12 0
Aster (French), bun. 0 9- 1 3	Odontoglossum crispum, 12 blms. 2 0- 6 0
Bouvardias, per bun. 0 6- 1 0	Pelargoniums, scarlet, p. 12 bun. 3 0- 6 0
Calceolarias, doz. bun. 4 0- 6 0	— 12 sprays ... 0 6- 0 9
Carnation, doz. bun. 4 0- 9 0	Poppy, doz. bunches 1 6- 4 0
— dozen blooms 1 0- 3 0	Primula, dble, p. bun. 0 6- 1 0
Cornflower, 12 bun. 1 0- 3 0	Pyrethrum, 12 bun. 2 0- 4 0
Eucharis, per dozen 3 0- 4 0	Roses, doz. bunches 3 0- 8 0
Gardenia, per dozen 2 0- 4 0	— Tea, per dozen 0 6- 2 0
Heliotrope, 12 sprays 0 3- 0 6	— coloured, dozen 2 0- 4 0
Lilium lancifolium, p. doz. blooms 2 0- 4 0	— yellow (Maréchal), per doz. 1 6- 6 0
— Harrison, p. doz. 2 0- 5 0	— red, per dozen ... 1 0- 1 6
Maiden Hair Fern, 12 bunches ... 4 0- 6 0	Stocks, per bunch ... 0 4- 0 6
Marguerite, 12 bun. 1 6- 3 0	Sunflower, various, dozen bunches ... 2 0- 6 0
Mignonette, 12 bun. 2 0- 4 0	Sweet Sultan, 12 bun. 2 0- 4 0
Myosotis, 12 bunches 2 0- 3 0	Tuberose, 12 blms. 0 4- 0 6
Peas, Sweet, various, doz. bunches ... 3 0- 6 0	
Pansy, per doz. bun. 1 0- 2 0	

ORCHID-BLOOM IN VARIETY.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Heliotrope, per doz. 4 0- 6 0
Aspidistra, per doz. 15 0-30 0	Hydrangea, per doz. 12 0-24 0
— specimen, each 7 6-21 0	Ivy Geranium, doz. 4 0- 6 0
Asters, dozen pots ... 4 0- 8 0	Lilium Harrisii ... 18 0-24 0
Balsams, per doz. 4 0- 6 0	— lancifolium, doz. 12 0-18 0
Campanula, per doz. 6 0-12 0	Lobelia, per doz. ... 3 0- 6 0
Cockscombs, per doz. 4 0- 6 0	Marguerite, per doz. 6 0-12 0
Cyperus, per dozen 4 0-10 0	Mignonette, per doz. pots 4 0- 6 0
Dracena, each ... 1 0- 5 0	Nasturtiums, p. doz. 4 0- 6 0
Ferns, various, doz. 4 0- 9 0	Palms, various, each 2 0-10 0
Ferns, small, per 100 ... 4 0- 6 0	— specimens, each 10 6-84 0
Ficus elastica, each 1 6- 7 6	Pelargonium, p. doz. 6 0-12 0
Foliage plants, doz. 12 0-42 0	— scarlet, p. doz. 3 0- 6 0
Fuchsia, per doz. ... 6 0- 9 0	

POTATOES.

Supplies still continue heavy, and prices lower, except for fine samples, Snowdrops and Hebrons, which realise 6s. 6d. to 7s.; other kinds, 4s. to 5s. 6d.; ordinary, 3s. to 3s. 6d. J. B. Thomas.

SEEDS.

LONDON: August 9.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that, as might be expected, to-day's market was but thinly attended, with but little business doing. New Trifolium meets a quiet but steady inquiry, at last week's figures. There is a good demand for new winter Tares, at current quotations. In Giant Seed Rye there is a ready sale. White Mustard Seed, which continues very dear, is still inquired for. Canary seed, which of late has been rather dull, moves off slowly on former terms. Peas and Haricot Beans dull. Choice new Rapeseed is now obtainable on moderate terms. Hempseed is quiet but firm. The Board of Trade returns give the imports of Clover and Grass Seed into the United Kingdom for last month as 10,749 cwt., value £25,110, as against 4,127 cwt., value £8,416, for the corresponding period of 1892.

FRUITS AND VEGETABLES.

BOROUGH: August 8.—Quotations:—Cabbages, 3s. 6d. to 6s. per tally; Parsley, 1s. 6d.; Carrots, 2s. 6d. to 4s.; Turnips, 2s. 6d. to 4s. per dozen bunches; Onions, Egyptian, 5s. 6d. to 6s. per cwt.; Plums, 3s. to 5s. per half-sieve.

SPITALFIELDS: August 8.—Quotations:—Cabbages, 3s. 6d. to 6s. per tally; Turnips, 2s. 6d. to 4s.; Carrots, 3s. to 4s. 6d. per dozen bunches; Onions, Egyptian, 5s. 6d. to 6s. per cwt.; Plums, 3s. to 5s. per half-sieve.

STRATFORD: Aug. 8.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 2s. to 4s. per tally; Cauliflowers, 9d. to 1s. per dozen; 1s. 6d. to 2s. 6d. per pad; Turnips, 2s. 6d. to 3s. 6d. per dozen bunches; Carrots, household, 1s. 6d. to 3s. do.; Apples, English, 2s. to 3s. 6d. per bushel; Watercress, 3s. to 4s. per flat; Peas, 4s. to 4s. 6d. per flat; Grapes, 4s. to 4s. 6d. per flat; Plums, 3s. to 4s. 6d. per flat; Broad Beans, 1s. to 2s. per bag; Scarlet Beans, 5s. 6d. to 6s. per sieve; Marrows, 1s. 6d. to 2s. per dozen; Cucumbers, 1s. to 2s. 6d. per dozen; do., field, 9d. to 1s. per dozen.

FARRINGTON: Aug. 9.—Quotations:—Cabbages, 3s. 6d. to 6s. per tally; Parsley, 1s. 6d.; Carrots, 2s. 6d. to 4s. per dozen bunches; Onions, Egyptian, 5s. 6d. to 6s. per cwt.; Marrows, 1s. 3d. to 1s. 6d. per dozen; Cucumbers, 2s. to 2s. 6d. per dozen.

FARRINGTON: Aug. 10.—Quotations:—Apples, 2s. 6d. per bushel; Pears, William, 4s. do.; Plums, 2s. per half-bushel; Tomatoes, English, 4d. per pound; Grapes 6d. do.; Melons, 5s. to 6s. per case.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending August 5, and for the corresponding period last year:—1893: Wheat, 26s. 2d.; Barley, 21s. 8d.; Oats, 21s. 6d. 1892: Wheat, 29s. 7d.; Barley, 23s. 8d.; Oats, 21s. 6d.

HAY.

Averages.—The following are the averages of prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 160s.; new, do., 115s. to 130s.; inferior, do., 110s. to 120s.; hay, best, 145s. to 165s.; inferior, do., 90s. to 100s.; new, mixture, 115s. to 130s.; and straw, 30s. to 50s. per load.

NOTICES TO CORRESPONDENTS.

BOOKS: C. M. B. *Choice Stove and Greenhouse Plants* by B. S. Williams, Paradise and Victoria Nurseries, Holloway, N. *Greenhouse and Stove Plants* by T. Baines: John Murray, Albemarle Street, London, W.C.

CARNATION LOTTIE KIRLEW: G. H. The bouquet was a charming one; the flowers large and well developed, and without run-colouring.

CARNATIONS: R. W. P. We have seen much superior flowers; but if the habit is robust and the plants are free-flowering, they are acquisitions for the border.—T. R. Eel-worms in the leaves, often figured in *Gardeners' Chronicle*.

CRACKING OF TOMATO FRUITS: Vestas. Keep the plants drier at the root, a daily supply of water is too much for them.

CUCUMBER DISEASED: J. H. Y. The Cucumber looks badly enough with the large yellow blotches, but there is no sign of fungus disease, the cuticle is not punctured, and there are no pustules or mycelium. The cause is somewhere else, and not in the fruit. There is no rot or rotting of the tissues, the etiolated cells have a normal appearance, except for the absence of chlorophyll. No local disease in the fruit, which is healthy enough except for the discoloration.—J. J. Eel-worms at the root, so often figured in *Gardeners' Chronicle*. There is no cure. Turn out the soil and get fresh.

DISEASED ERANTHEMUM: Ignorant. There are plenty of "scale" on the leaves, and we find also acari, somewhat like the red spider but colourless. The whitish pustules are all superficial oily matter, and the brown dots are clumps of eggs. There are no fungi or real disease, but plenty both scale and acari, sufficient to account for anything.

LARGE PEACHES: W. C. The fruits arrived in bad condition, but we could see that they were very large. The flavour was not good. What is the name of the variety?

LETTUCES: Enquirer. Your plants were attacked by the young of woodlice, as were those from "A. M." mentioned in the Notices to Correspondents column of July 29. With such a temporary crop we cannot advise you to do anything, but when the ground has been cleared, a good dressing with quicklime will no doubt prevent a recurrence of the mischief.

MELON: Subscriber. The leaves appear to be burned with some kind of insecticide. From leaves alone we cannot form any opinion of the cause of the plants "going off."

NAMES OF FRUITS: J. R. B. 1, Beurré superfin; 2, Louise Bonne de Jersey; 3, Williams' Bon Chrê-

tien; 4, Forelle; 5, poor specimen, cannot tell; 6, Duchesse d'Angoulême.—W. J. T. Apple, Nonchuch; Plum, Mitchelson.—J. P. Dixon. 1 and 2, Red Astrachan; 3, Cellini; 4, King of the Pippins; 5 and 6, specimens not developed.—R. Neville White. 1, Windsor; 3, Marie Louise; 4, Caillot Rosat.—J. G. Peaches cannot be determined by the fruit alone. Apricot, Turkey. Plums: 7, 8, and 9, Victoria; 3, Oullin's Golden Gage; 4, Kirke's; 6, Princess of Wales. W. G. Sorby. Apple, Irish Peach.—J. J. Wenham. 1, Duchess; 2, Gascoigne's Seedling; 4, Pott's Seedling; 5, Mère de Ménage; 6, rotten, probably Lord Suffield.—Nuncaton. Apple not sufficiently developed.

NAMES OF PLANTS: S. A. M. Wretched and shrivelled specimens: they are so far as we can make out. 1, Polygala Dalmaiana; 2, H. lianthus rigidus; 3, Pulmonaria officinalis; 4, Stachys lanatus; 5, Lysimachia thyrisiflora; 6, Sedum rupestre; 7, Gypsophila paniculata; 8, Hemerocallis flava.—R. M. Hibiscus syriacus, semi-double form.—G. G. C. Echium vulgare.—Bournemouth. No. 1 is Cotoneaster Simonsi; No. 2 we do not recognise, but it is probably also a Cotoneaster. Do we understand you that the two "were taken off the same plant?" It seems highly improbable.—T. D. Blandford. The Cattleya Rex is an ordinary variety. The yellow flower is Spathoglottis Fortunei, not Sarcopodium. Your semi-double flowers of Platycodon are unusual.—G. H. 1, Campanula medium, double white; 2, Veronica subsessilis; 3, Helenium autumnale; 4, Montbretia crocosmiflora; 5, Phgelius capensis; 6, Lychnis chalcidonica; 7, Helichrysum grandiflorum; 8, Rudbeckia californica; 9, Galega officinalis alba; 10, Dactylis glomerata variegata; 11, Monarda didyma; 12, Centranthus ruber; 13, Campanula Rapunculul; 14, Eupatorium maculatum; 15, Lythrum Salicaria; 16, Centaurea montana. Our limit is six; have mercy upon us in future, or we shall charge you for our time.—E. D. L. 1, cannot be identified; 2, Aster paniculatus; 3, Grindelia squarrosa; 4, Lysimachia vulgaris; 5, Senecio ligularia; 6, Artemisia abrotanum; 7, Solidago neglecta.

PEARS WITH DYING LEAVES: Salopian. The leaves sent have been eaten away on the surface by slug-worms, which are the grubs of certain sawflies. The slugworm proper, is the grub of Selandria cerasi. It derives its name from the black alime that covers its hairy body till the last moult. Hellebore powder mixed with water is the best remedy. If you sent any of the grubs, they had escaped in transit, as we found none. For figure see *Gardeners' Chronicle* for October 27, 1888.

SCARLET RUNNERS: C. W. D. The falling of the blossom has been general this year, and is no doubt due to some obstruction of the circulation, by reason of which the proper amount of water has not reached the flower. The extreme heat and unusual sunlight may have caused a premature ripening and drying up of the flower-stalks, even though the roots were, as in your case, in relatively moist soil. The flowers are not malformed.

SEEDS OF POLYGONUM SACHALINENSE: F. R. We do not suppose that seeds are yet being disposed of by those few persons who have them, but rhizomes may be purchased, every bit of which will grow.

SHOWER BOUQUET: P. W. Yes, this should be made much the same as an ordinary bouquet, except that it should be trailing. For this purpose something light and graceful should be used, such as Asparagus plumosus, or Myrsiphyllum (Smilax) asparagoides, and the flowers with long stems must be wired with the stems pointing towards the bouquet. You will, however, require some practice, and possibly a lesson or two from a skilled florist before you will make them prettily.

WHITE CACTUS DAHLIA: W. B. S. A very nice variety, but without any decided points of superiority over others of the class.

COMMUNICATIONS RECEIVED.—J. Sutherland.—H. H. A.—H. Grunberg, Erfurt.—Pannel Nyes.—G. W. & Son.—C. W. D.—G. L.—T. H.—C. E.—H. J. R. Viareggio.—A. S. B.—H. E. M.—B. Marseille.—John Spink.—T. F.—T. Bunyard.—W. R.—H. N. Grier, not exactly suited for the *Gardeners' Chronicle*.—A. M. K.—R. A.—E. C.—Osman & Co.—A. E. W. D.—W. A. C.—W. K.—J. O'B.—Riviera.—R. D.—F. W. Seers, Kumaon.—T. H. C.—J. T. N.—W. J. B. W. H.—B. W.

SPECIMENS RECEIVED.—H. W. S.—A. B.—A. B. B.—Buysens.—A. M. D.

PHOTOGRAPHS RECEIVED.—O. O. W. (next week).



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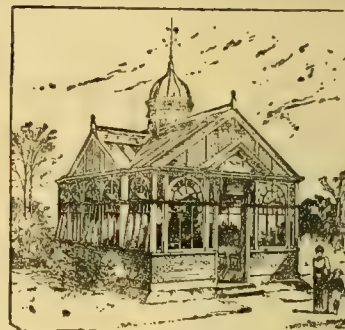
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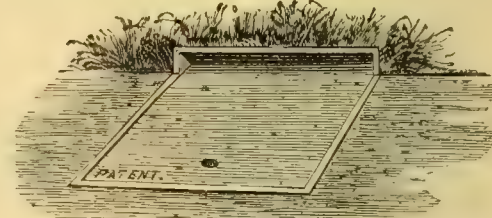
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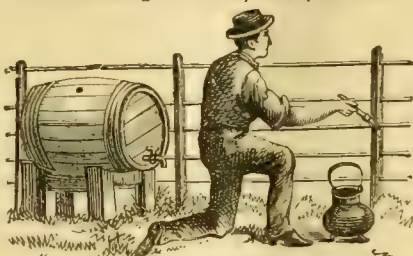
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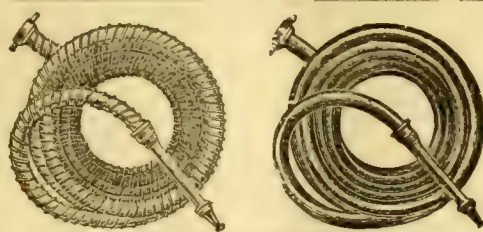
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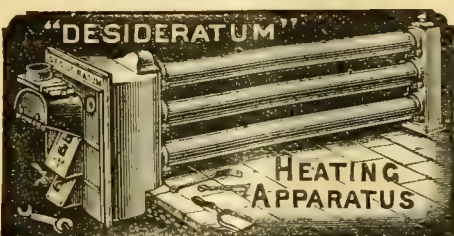
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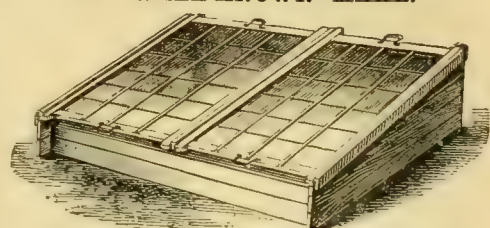


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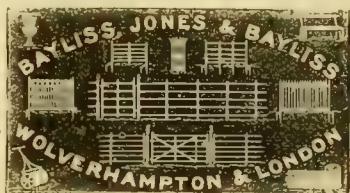
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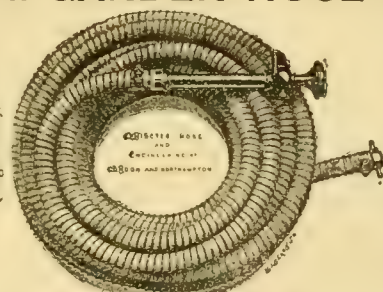
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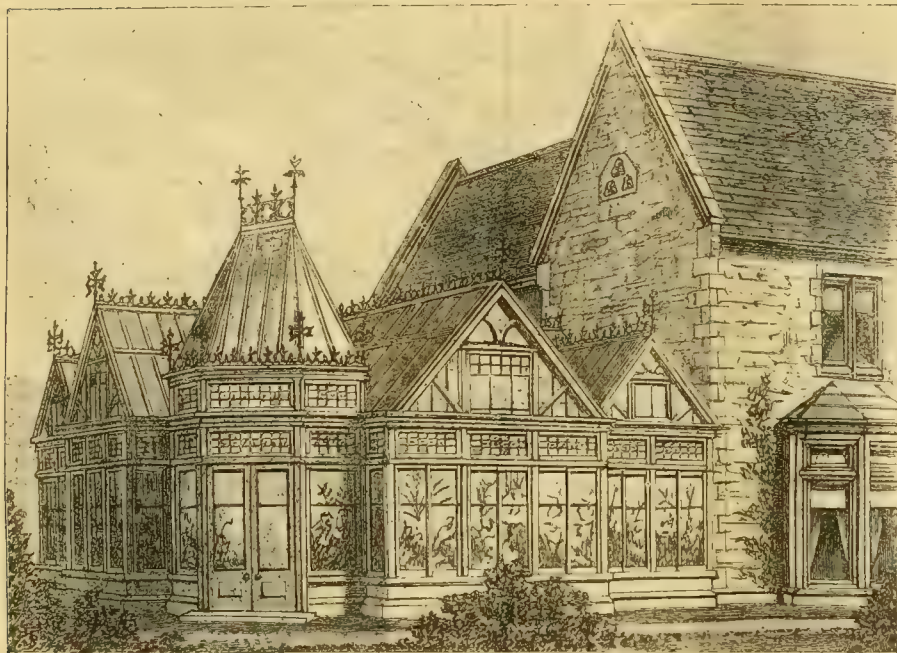
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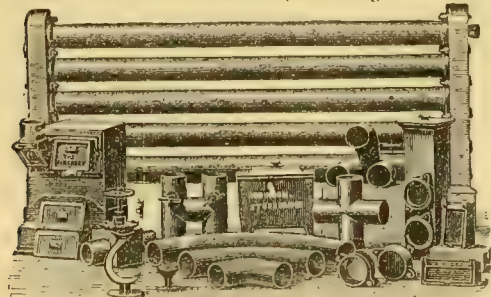
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ESTABLISHED 1841. No. 2747.

No. 347.—VOL. XIV. {THIRD SERIES.}

SATURDAY, AUGUST 19, 1893.

{Regt. as a Newspaper.} PRICE 3d.
POST-FREE, 3½d.

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20,000 PTERIS CRISTATA, extra good form, fine stuff, in thumbs, fit for potting into 48's. 12s. per hundred, or £5 per thousand. Not less than Fifty sent at the above price. Other sorts of Ferns on application. J. HILL, Florist, Lower Edmonton.

PRIMULAS! PRIMULAS! PRIMULAS! 25th year of Distribution. Williams' superb Strain, 1s. 6d. per dozen; 10s. per 100. CINERARIAS, same price; also DOUBLE WHITE PRIMULAS, 6d. each. Package and Carriage free for Cash with Order.—JOHN STEVENS, The Nurseries, Coventry.

ORCHIDS.—Many rare and choice Cattleyas, Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST. W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N.

BARR'S BULBS.—AUTUMN and WINTER-FLOWERING.—LISTS NOW READY of Beautiful Crocus species, Autumn and Winter-flowering, Autumn Meadow Saffrons, Cyclamen, Guernsey and Belladonna Lilies, White Roman Hyacinths, and other Bulbs for Early Planting. BARR'S DAFFODIL CATALOGUE ready in August. BARR'S GENERAL BULB CATALOGUE ready Sept. 1. BARR AND SON, King Street, Covent Garden, London, W.C.

CHEAP OFFER. 100,000 KENTIAS, all sizes. 50,000 ARECAS, all sizes. 2,000 ASPARAGUS PLUMOSA NANA. 1,000 TENUISSIMA. Dracenas, Crotons, Pandanus Veitchii, and Ficus elastica. Prices on application. G. BETHELL, Whiteley's Nurseries, Hillingdon Heath, Uxbridge.

CUTHBERT'S BULBS for EARLY FORCING.—Special quotations for large quantities. Descriptive CATALOGUES free. R. AND G. CUTHBERT, Importers of French and Dutch Bulbs, Southgate, N. Established 1797.

WANTED.—To Purchase, REAL STONE VASES, SUN DIALS, and SCULPTURE for Ornamenting Gardens. Age no objection. State price, free on rail, giving sketches. Address—A. L. N., 1,366, Sell's Advertising Offices, London.

Important to Mushroom Growers. CUTHBERT'S SPECIALITE MUSHROOM SPAWN. Always alike; most productive. Hundreds of testimonials. Per bushel, 5s. R. AND G. CUTHBERT, Seed, Bulb, and Plant Merchants, Southgate, N. Established 1797.

The Best Present for a Gardener. VINES AND VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published. Third Edition just out. Price 5s., post free, 5s. 6d. A. F. BARRON, Royal Horticultural Society, Chiswick.

OLD CRIMSON CLOVE CARNATIONS.—Strong-rooted layers. Germania, the best yellow, well-rooted, in large 60's. JOHNSON AND CO., The Nurseries, Hampton.

FERNS from Stores.—Pteris tremula, Pteris cristata, and Adiantum cuneatum, Strong clean stuff, fit for single pots, 3s. 6d. per 100; 30s. per 1000. Cash with order. G. ADCOCK, Florist, Rokeby Road, Brockley, S.E.

TREE CARNATIONS.—Winter Cheer, Miss Jolliffe Improved, Mrs. A. Hemsley, and other best winter-flowering sorts, extra fine stuff, in 5-inch pots. Special offers on application. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

LOVELS' YORKSHIRE STRAWBERRIES.—Rooted Runners; Noble, Thury, Paxton, President, and others, 6s. per 100. Sample dozen, 1s. Descriptive LIST free. W. LOVEL AND SON, Strawberry Growers, Driffield.

PRIMULA, Double White, in 3-inch pots, and CAREX VARIEGATA, both extra fine, offered by the dozen or 100, price on application. Visitors to the West of England will be well repaid to visit my display of Begonias. B. R. DAVIS, Yeovil Nurseries, Yeovil, Somerset.

Strawberries. A FINE COLLECTION of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free. THOMAS RIVERS AND SON, Sawbridgeworth.

Kent: the Garden of England. GROW ONLY the BEST STRAWBERRIES AND CONSULT

GEORGE BUNYARD AND CO.'S NEW LIST. A Chester Gardener says:—"In all my long experience I never had such crops as from your Kent plants." Extra fine plants in little pots and runners ready shortly. The Old Nurseries, Maidstone.

To the Trade. IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order. E. D. SHUTTLEWORTH AND CO., LTD.

Awarded Silver-Gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our speciality—really good stuff grown for the Trade.

"KILLMIGHT" For Destruction of all Insect Pests and Mildew. THE STOTT DISTRIBUTOR CO. (Ltd.), Barton House, Manchester.

J. WEEKS & CO., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

Monday Next.

ENORMOUS CONSIGNMENT of LILIES from BERMUDA, received direct for unreserved Sale.
56,630 LILUM HARRISII, 5 to 7, 7 to 9, and 9 to 11 inches.
1,350 „ LONGIFLORUM, 7 to 9, and 9 to 11 inches.

MESSRS. PROTHEROE AND MORRIS will include the above in their SPECIAL TRADE SALE of DUTCH BULBS on MONDAY NEXT, August 21.

On view morning of Sale, and Catalogues had.
N.B.—The Cases have arrived, and Messrs. P. & M. have examined the bulbs, and find them in magnificent condition.

Friday Next.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will sell as above, by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 25, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

GREAT TRADE SALES of DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have now arranged their SALES of DUTCH BULBS for the ensuing season.

SPECIAL TRADE SALES will take place as follow:—

August 21, over 2000 lots	August 31, over 1500 lots
August 24, over 1500 lots	Sept. 19, over 1200 lots
August 28, over 1500 lots	Sept. 21, over 1200 lots

Also a grand lot of SPECIAL TULIPS, and a magnificent lot of ROMAN HYACINTHS will be included.

The whole for Sale absolutely Without Reserve.

Messrs. P. & M. have personally inspected the Farms in Holland, and made special arrangements for consignments of Bulbs for these Sales from some of the largest Growers, who can be depended upon both for the quality of the Bulbs and correctness of names.

Catalogues will be forwarded on application.

Auction Rooms, 67 and 68, Cheapside, London, E.C.

GREAT ANNUAL TRADE SALES

OF STOVE and GREENHOUSE PLANTS, WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS beg to announce that their annual Sales have been fixed as follows:—

MONDAY, September 11.—At the DYSON'S LANE NURSERIES, UPPER EDMONTON, by order of Mr. H. B. May.

TUESDAY, September 12.—At the BURN'T ASH ROAD NURSERIES, LEE, KENT, by order of Messrs. B. Maller & Sons.

WEDNESDAY, September 13.—At the LEA BRIDGE ROAD NURSERIES, LEYTON, by order of Mr. John Fraser.

THURSDAY, September 14.—At the BRIMSDOWN NURSERIES, ENFIELD HIGHWAY, by order of Mr. John Maller.

FRIDAY, September 15.—At the LONGLANDS NURSERY, SIDCUP, by order of Messrs. Gregory & Evans.

Further particulars will appear.

Wednesday Next.

SPLENDID IMPORTATION of BULBS from HOLLAND.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 23, at half-past 12 o'clock precisely, a splendid IMPORTATION of BULBS from HOLLAND, including the usual choice assortment from some of the renowned growers; Early White ROMAN HYACINTHS, Paper-white NARCISSUS for Forcing.

On view morning of Sale, and catalogues had.

N.B.—None but good and reliable Bulbs will be offered.

FREEHOLD VILLA for SALE, with four large Greenhouses and two Conservatories. New property. Close to three Railway Stations.

Apply to Owner, Durant's Road, Ponders End, Middlesex.

TO LET, a SMALL NURSERY, with four Greenhouses, and Six-roomed Cottage. Crops at valuation. No stock; suitable for Jobbing-man; long lease, low rent.—Apply, Spike House Garden, Hammersmith.

City of Peterborough.

TO NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS.

TO BE LET, with Immediate or Michaelmas Possession, the well-known, old-established Peterborough BUSINESS, comprising a NURSERY FARM of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the Town. Also, a superior SEED SHOP and STORE, in a first-class central position; and a FLOWER-STAND on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, FOX and VERGETTE, Estate Agents, Peterborough.

Tottenham.—To Nurserymen and Florists.

TO BE LET, Four GREENHOUSES (three heated by hot water), capital HOUSE, containing eight rooms and domestic offices. Rent, £38. Particulars of—Mr. ALFRED RICHARDS, Estate Agent, 816, High Road, Tottenham. (4141).

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

County Borough of Hanley.
To BUILDERS, HORTICULTURAL BUILDERS, WROUGHT-IRON ART METAL WORKERS, TERRA COTTA MANUFACTURERS, &c.

TENDERS are invited for the following, viz.:—
HANLEY PARK.

Contract No. 4.—Lodge, Gate Pillars, and Wing Walls. Cauldon Place Entrance.

Contract No. 5.—Terra Cotta Fountain and Vases.

Contract No. 6.—Wrought Iron Gates.

Contract No. 7.—Terrace Wall and Foundations to following:—

Contract No. 8.—Conservatory and Greenhouses.

Designs, &c., prepared by Mr. Thomas H. Mawson, Park Architect, Windermere.

Specifications, bills of quantities, forms of tender, and particulars may be obtained at my office, Town Hall, Hanley.

The lowest or any Tender not necessarily accepted.

Sealed and endorsed Tenders must be sent to me before Monday night, August 28 inst.

JOSEPH LOBLEY, Borough Engineer and Surveyor.
Hanley, August 1, 1893.

LILY OF THE VALLEY (first-class quality),

offered by

W. HENNIS, Florist, Hildesheim, Germany.
Price on application.

PALMS, FERNS, &c.—FERNS in Variety.—

ARALIAS and CYPERUS NATALENSIS in 48's, 6s. per dozen; LARGE A. CUNEATUM in 48's, 6s. and 7s. per dozen; PALMS in variety, and FICUS in 48's, 12s. per dozen; PALMS, fine stuff, in large 60's, 5s. per dozen; FERNS and CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order.

LANE AND MARTIN, 227, Brixton Road, London, S.W.

VIOLA CUTTINGS.—We are now supplying

excellent Cuttings from our unrivalled Collection of Named Varieties at the following very moderate rates. These Cuttings will root readily in a cold frame, and make fine plants for October or Spring planting:—1000 Cuttings, in 100 very fine varieties, for Bedding or Exhibition purposes, £2 10s.; 500 Cuttings, in 50 varieties, £1 10s.; 100 Cuttings, in 25 varieties, 6s. 6d.; 50 Cuttings, in 25 varieties, 4s.; 25 Cuttings, in 12 varieties, 2s. 6d. All Carriage Free. Each variety separately named.—DOBBIE AND CO., Florists, Rothsay.

B. MALLER AND SONS beg to offer to the

Trade a very extensive and unusually well-grown Stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, of sorts; ADIANTUM CUNEATUM and other FERNS; PALMS, in variety; GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES, in pots; BORONIAS megastigma and heterophylla, VINES in pots, &c., &c. An Inspection is invited.

Trade CATALOGUES forwarded on application.

The ANNUAL SALE by AUCTION will be held on TUESDAY, September 12.

Burnt Ash Road Nurseries, Lee, S.E.

NEW IMPORTATION OF ORCHIDS

From BRAZIL and BORNEO.

PARTICULARS POST-FREE ON APPLICATION.

INSPECTION INVITED.

A. H. GRIMSDITCH, Importer,
5, CLAYTON SQUARE, LIVERPOOL.

ALL GOODS DELIVERED FREE

on board, London, Antwerp, Rotterdam.	£ s. d.
LILIIUM HARRISII, 5-7 in. circ., per 1000 bulbs.	6 5 0
" " 7-9 in. " " " " " "	11 10 0
" " 9-11 in. " " " " " "	22 10 0
" " AURATUM, 7-9 in. " " " " " "	8 7 6
" " 9-11 in. " " " " " "	11 10 0
TUBEROSES, Pearl, select 4-6½ in. " " " " " "	1 10 0
" " seconds, 3-4 in. " " " " " "	1 2 6

Prices for GLADIOLUS, &c., on application.

F. W. O. SCHMITZ and CO., Jersey City, N.J., U.S.A.

STRAWBERRY

PLANTS.

Hand-laid Runners and Plants in Pots of the best varieties, including PRESIDENT, SIR JOSEPH PAXTON, BRITISH QUEEN, KEEN'S SEEDLING, VICOMTESSE H. DE THURY, AUGUSTE NICAISE, and others.

Descriptive Catalogue on application.

DICKSONS NURSERIES, CHESTER.

FRENCH and DUTCH BULBS.

ROMAN HYACINTHS,
PAPER WHITE NARCISSUS,
LILIIUM CANDIDUM, &c.

NAMED and BEDDING HYACINTHS,
TULIPS, CROCUS, SNOWDROPS,
DAFFODILS, &c.

ALL ORDERS CARRIAGE PAID.

CATALOGUES now ready, Post Free on application.

LITTLE & BALLANTYNE,
Queen's Seedsmen, CARLISLE.

EXHIBITIONS.

BATH AUTUMN SHOW.—WEDNESDAY and THURSDAY, August 30 and 31.

Amongst the Prizes offered are for:—
1st 2nd 3rd
12 Foliage and 6 Stove or Greenhouse Plants £10 £7 £4
6 Stove or Greenhouse Plants " £1 £2 10s. £1 10s.
6 Orchids " " " £3 £1
Group of Plants, not less than 100 sq. ft. " £5 £3 10s. £2
Collection of Fruit, 12 dishes " " £3 £2 £1
8 Bunches of Grapes, 4 varieties " £5 £3 £2
And 5 other Classes for Grapes in varieties. Prizes in proportion.
Entries close Aug. 25, Friday. For Schedules, &c., apply to—
2, Northumberland Buildings, B. R. F. PEARSON, Secs.
Bath. W. JEFFERY,

SANDY (Bedfordshire) FLORAL and HORTICULTURAL SOCIETY.—Twenty-fifth Great Autumn Show (Open), THURSDAY, August 31, 1893. Plants, Flowers, Fruit, Vegetables, Dogs, Poultry, Pigeons, Rabbits, Cavies, Cage Birds, &c. Prizes, £320, including for Ten Stove and Greenhouse Plants in flower (distinct), 1st, £12; 2nd, £4; 3rd, £6; 4th, £3. Entries close: Live Stock, Aug. 12, all other Entries close Aug. 23.
W. GREEN, Sec., Sandy.

BRIGHTON and SUSSEX (NEW) HORTICULTURAL SOCIETY.

SECOND ANNUAL AUTUMN SHOW,

THE ROYAL PAVILION, BRIGHTON,

TUESDAY and WEDNESDAY, September 5 and 6.

Schedules may be obtained from the Secretary—

MARK LONGHURST, 18, Church Road, Hove, Sussex.

Entries close August 31.

FOR ORCHIDS and GARDENERS

to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

10,000 GENISTAS, in small 60's, extra fine plants, £4 10s. per 1000, 10s. per 100, cash with order. Post-Office orders payable at Leyton High Street. T. BALDWIN & SON, Edith Nurseries, Burchall Road, Leyton.

SNOWDROPS.—7500 Bulbs, large white single. Two qualities. Samples on application.
C. SAUNDERS, Horningsay, Cambridge.

HOLLYHOCKS.—Good strong Transplanted Seedlings, from a collection of choice double varieties. 6s. per 100, or 1s. per dozen, free; worth double.—M. AUSTEN, Florist, &c., Market Heath, Brenchley, Kent.

DAFFODILS for the MILLION.—Hartland's famous Irish-grown Bulbs now harvested. "LITTLE BOOK," with exceedingly low prices post-free.—HARTLAND, F.R.H.S., Seedsman, Cork, Ireland. (Established, 1810).

DOUBLE WHITE NARCISSUS.—Splendid strain, 17s. 6d. per 1000, on rail. Sample 50 free by post for 1s. 9d.; 100 for 3s. Cash in all cases with order.
J. J. CLARK, Goldstone, Brighton.

FERNS! FERNS!!—Trade.—Greenhouse and

Stove, 25 saleable sorts, in 2½-in. pots, 12s. per 100; 10 best market sorts, in 48's, 6s. per doz.; stores, 6s. per 100. Large Adiantum cuneatum, value in fronds, 6s. and 8s. per doz. Cyperus, Aralias, Grevilleas, in 48's, good value, 6s. per dozen. Palms, Ficus, & Dracaenas, 1s. each. Hydrangeas, Pelargoniums, Marguerites, 9d. each; in 48's, 1s. each. P. tremula and A. cuneatum, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—J. SMITH, London Fern Nurseries, Loughboro' Junction, London, S.W.

POINSETTIA PULCHERRIMA, strong rooted cuttings, in 3-inch pots, 20s. per 100. KENTIAS, 40s. per 100. PHENIX RECLINATA, 10s. per 100. PTERIS CRISTATA CRISTATA (true), 12s.; P. MAJOR, 15s. per 100. FICUS ELASTICA, in 32-pots, strong, 3 to 4 feet, 30s. per dozen; in 48's, 15s.; £5 per 100; variegated, 5s. each. ARALIA SIBOLDII, extra strong, 8s. per doz., £3 per 100. ASPLENIDIUM, 48's, 7s. per dozen; £2 10s. per 100.
G. LANGE, Hampton, Middlesex.

LAXTON'S STRAWBERRIES THE BEST.

—Excellent plants, in pots, for forcing and open ground. Runners ready at once of Noble, Vicomtesse, Ruskin, Nicaise, British Queen, President, Commander, Competitor, Jas. Veitch, Keen's Sucrée, Latest of All, Marguerite, Paxton, Waterloo, Sensation (new '92), and the grand new "Royal Sovereign" (three certificates), an earlier, richer flavoured, and improved Sir J. Paxton. Handsome coloured plate 6d. (gratis to customers). Full Descriptive Priced List free from—

THOMAS LAXTON, Strawberry Plant Grower, BEDFORD.

BULBS.—Our special offer of Daffodils, and other Bulbs for early planting, is now ready. Lilium candidum, 10s. and 12s. per 100; Lilium Harrisii, 5s. to 10s. 6d. per dozen; Roman Hyacinths, 12s. 6d. and 16s. per 100, very scarce; Narcissus (paper-white), 5s. per 100; Narcissus Double Roman, 5s. per 100; Gladiolus Colvilli (The Bride), lovely for cutting, 2s. 6d. per 100; Iris hispanica (the poor man's orchid), finest mixed, 1s. 6d. per 100. Every article the best procurable.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

WHINHAM'S INDUSTRY COOSEBERRY

stands unrivalled. 84 lb. of fruit has been grown on one bush.

10,000 Grand Two-year-old Bushes for delivery in October, 2s. 9d. per dozen, on rail.

I am now booking orders for September and October delivery of surplus plants from my grand collection of

CARNATIONS—Lists free.

THOMAS H. COLEMAN, Horneybrook Nurseries, SAFFRON WALDEN.

The "CLIMAX" WEED KILLER	INSECTICIDE	SUMMER SHADING	BRIGHT PREVENTOR
<p>Kills all Weeds on Garden Walks, Carriage Drives, &c., &c. Brightens the Gravel. One application will keep the Walks clear of Weeds for a whole season. Acknowledged by all who have tried it to be the most effective Weed Killer in the World. Compare the prices and using strength with others.</p> <p>ONE GALLON MAKES SIX GALLONS FOR USE</p> <p>— PRICES. — 1 gallon, 3/- (time included); 6 galls., 2/9 per gall.; 10 galls., 2/6 per gall.; 20 galls., 2/3 per gall.; 40 galls., 2/- per gall. Carriage paid on 6 galls. and upwards.</p>	<p>NON-POISONOUS. The only Insecticide that improves and brightens the foliage while at the same time it is certain death to all insects.</p> <p>ONE PINT MAKES SIX GALLONS FOR USE</p> <p>— PRICES. — In tins: 1/2-pint, 1/3; 1-pint, 1/6; 2-pints, 3/-; 4-pints, 5/-; 1 gallon, 9/-; 6 and 10 gallon drums, 8/- per gallon. Carriage paid.</p>	<p>Convenient, inexpensive, and easily applied, lasting, and yet easily removed by rubbing at the end of the summer.</p> <p>— PRICES. — In packets containing 8oz., 6d.; 16oz., 1/- (postage 8d. extra); and in 7lb. tins, 5/-.</p>	<p>The most effective remedy for Blight or Fungus on Tomatoes, &c. Will not injure the Plants or Fruit.</p> <p>— PRICES. — In packets, 8oz., 6d.; 16oz., 1/- (postage 8d. extra); and in 7lb. tins, 5/- each.</p> <p>NO TOMATO GROWER SHOULD BE WITHOUT IT. Its use will save pounds worth of Fruit.</p>
<p>COMPLETE SATISFACTION GUARANTEED TO USERS OF THE "CLIMAX" PREPARATIONS.</p> <p>PREPARED BY THE BOUNDARY CHEMICAL CO. LIMITED, LIVERPOOL.</p>			

HORTICULTURAL BUILDER.

Every description of GREENHOUSES, LIGHTS, &c.
PIT LIGHTS. CUCUMBER HOUSES.

Best quality and workmanship, 2 inches thick, 6 ft. by 4 ft., iron bar across, and very strong, 4s. 6d. each, 60s. doz., £10 for 50 lights, free on rail in London. Cash or reference with order.

Timber sufficient to build 100 feet by 12 feet house, Roof Ventilators, Door, &c. Put on rail in London. Price £9 10s. Send for detailed specification, to
W. DUNCAN TUCKER, HORTICULTURAL WORKS, TOTTENHAM.
Send for Illustrated Catalogue, just issued.

SANKEYS' famous GARDEN POTS

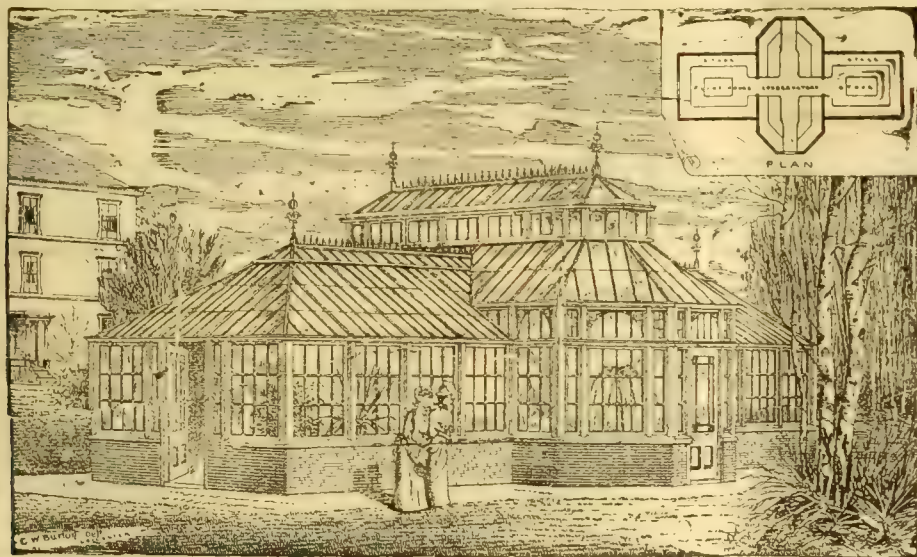
Bulwell Potteries, Nottingham.

Messrs. Dicksons, Limited, Chester, write:—"The Flower Pots you have so largely supplied us with are light, strong and well made, and in every respect highly satisfactory."

Messrs. Richard Smith & Co., Worcester, write:—"We beg to say that we are highly satisfied with your 'Garden Pots'; they are well made, light, yet strong, and we like them better than any other we have ever used."

Mr. William Bull, 536, King's Road, Chelsea, London, writes:—"For nearly thirty years I have been using your 'Garden Pots,' and still find them the best and cheapest."

Largest Manufacturers in the World. No Waiting. Millions in Stock. Carriage and Breakage Free on £10 Orders. Half Carriage on £5 Orders. Samples Free.



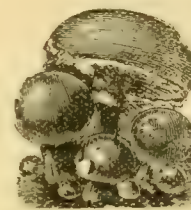
MESSINGER & CO.'S New CATALOGUE of Greenhouses and Heating Apparatus,
Just issued, will be found the most complete, practical, and reliable guide to all about to build, alter, or heat Greenhouses. Illustrations of every description of Glasshouse, from the largest range of Winter Gardens to the simplest forms of Portable Greenhouses, Plant Protectors, and Garden Frames; also of all the best kind of Boilers, Hot-water Pipes, and all appliances for heating. This Catalogue, possessing hundreds of illustrations of all the latest improvements in greenhouse building and heating, is on a scale never before attempted. It should be in the hands of every one interested in gardening, as it contains many practical hints on the subjects of which it treats, the result of many years' experience. Price, 2s. post-free.
A large number of the illustrations are taken from greenhouses erected by us in various parts of the country; an inspection of this Catalogue shows, therefore, the efficiency of which has been well tested by actual use. The advantages possessed by us enable us to carry out work with the utmost promptness, and in the very best style, at prices which defy competition. Surveys made, and gentlemen waited on in any part of the country. Plans and Estimates free on application.

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London Office:—163, Palmerston Buildings, Old Broad Street, E.C.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem,
Holland. Wholesale CATALOGUE now ready, and may be had free on application to—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.
N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

STRAWBERRIES, strong, well-rooted Plants.
—Noble, 4s. per 100; President, 3s. per 100. Price per 1000 on application.
WALLFLOWERS.—Belvoir Castle, best yellow, strong plants, 2s. 6d. per 100; Covent Garden Red, 2s. 6d. per 100; Double German, 3s. 6d. per 100.
SAXIFRAGA PYRAMIDALIS, very fine, 8s. per 100. Many other varieties to offer.
MYOSOTIS ALPESTRIS, 1s. per 100.
W. KERSHAW, The Nurseries, Bingley, Yorks.

GILBERT'S STRAWBERRY PLANTS
are the acknowledged best in the trade.
LA GROSSE SUCREE and VICOMTESSE, splendid stuff, in 60's, turned out, at 18s. per 100.
WATERLOO, BRITISH QUEEN, LAXTON'S "SCARLET QUEEN," in fact all the best varieties cultivated. Runners of the two former, 4s. per 100, and the latter 6s. per 100. Please send for LIST.
R. GILBERT, High Park Gardens, Stamford.



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THE Gardeners' Chronicle.

SATURDAY, AUGUST 19, 1893.

HAMPTON COURT.

THE bedding display at this favourite place of resort has long had a high reputation, but it never better deserved that reputation than this season. The authorities there seem to have a liberal supply of water at their disposal, and hence now the grass is delightfully green, and the flowers in glorious bloom. A mere count of the beds here gives a very indifferent idea as to the extent of the floral display, because some beds are of such exceeding dimensions; but all down the lawn side of the noble broad parade there are some sixty; and on the broad, fan-shaped area fronting the palace, and enclosing the fish-pond and fountain, are some eighty others; in addition to which there is on the palace side of the parade some 500 yards run of border, in the back part of which Hollyhocks, Dahlias, Sunflowers, hardy plants, &c., flourish, whilst the entire length is faced by a line of Crystal Palace Gem Pelargonium, and a beautiful edging of *Dactylis glomerata variegata*, intermixed with the famous old *Viola Blue Bell*. This capital variety is largely employed in the bedding, and it, with Flower of Spring Pelargonium, dwarf marbled *Abutilons*, &c., makes some charming combinations.

Below the palace a border runs to the river-front, chiefly devoted to hardy plants. This and the other border is far too narrow for the surroundings, and should be doubled in width, to give which some of the too broad gravel parade might well be spared.

Naturally, the most attractive beds are those which line the lawn side of the broad parade, which runs from the Hampton Road to the river-front, and a very noble parade it is too. Here we find some very brilliant masses of Pelargoniums, H. Jacoby, Tom Bowling, Lord Gifford, Vesuvius, &c., which give colour of the richest, and pinks and salmons, too, are plentiful. It is, indeed, a grand season for these zonals, and how superbly they bloom this hot parching weather. Last year they looked badly. Now they are looking grandly. Of course these are edged with some notable plants, such as golden Harry Hieover, Manglesi, mixed with dwarf *Ageratum*, *Gnaphalium*, &c. Some of these Pelargonium beds must have taken several hundreds of plants. Those who like colour will find it here, and let me say also that a great public garden like this is a place in which popular tastes are to be studied rather than any individual fancies, hence it is that the bedding is so remarkably varied, that everybody finds something to be delighted with. Perhaps the most beautiful beds—they are so, at least, in my eyes—are several planted thinly, with fine crimson-flowered *Begonias*, intermixed with a few good white *Fuchsias*, the carpet being of *Koniga variegata*, and mauve *Viola Mrs. Turner*, edged by *Mrs. Pollock Pelargonium*, and the bushy zonal *Wallacei*. Two others are edged with golden *Chickweed*. Some *Begonia* beds are planted with selected white varieties, intermixed with *Zinnias*, of which they have here a capital strain. A big mass of the beautiful *Begonia*

Northiana, edged with the violet-leaved *Coleus Taylor's Pet* and golden-leaved *Pelargonium Golden Superb* intermixed will soon be a beautiful mass. In the bed at the extreme river end is one of mixed white and red Fuchsias, Zinnias, and Ivy-leaf *Pelargoniums*, edged with this *Northiana* in beautiful bloom, and further margined with *Echeveria secunda glauca* and *Sedum glaucum*. Whilst the *Pelargoniums* give almost exclusively the masses of colour, there are, beyond those we have mentioned, very many and remarkably attractive mixed beds, indeed those preferring the mixed style may have their fill here. Huge beds filled with tall *Marguerites*, *Abutilons*, White *Tobaccos*, *Pentstemons*, *Petunias*, Zinnias, &c., with a base of *Pelargoniums*, Dwarf *Nasturtiums*, &c., edged with a stiff margin of *Euonymus radicans variegata*, or some other suitable material, are beautiful of their kind. A most pleasing mixture in one case consists of *Abutilon niveum maculatum*, beneath which is a mass of blue *Ageratum*, and some single red *Petunias*. This is really charming, but the *Gnaphalium* edging is too dwarf to sustain the centre well. Giant *Castor-oils* and white *Tobaccos*, too, are charming, especially after the sun has passed off them. To a mixed bed of Fuchsias, &c., is an effective edging of Golden-leaved *Arabis mollis*; and a big mass of Scarlet *Pelargoniums* is pleasingly margined with Cannell's Dwarf *Ageratum* and *Gnaphalium lanatum*. In another place, *Centaurea ragusina* and Blue *Lobelia* intermixed, make a pretty edging. A real old-fashioned and lovely bed is one entirely of seedling *Verbenas*, a beautiful and a first-rate mixture, without an edging. The flowers are of as fine quality as they are varied in colour, and show how readily from seed now we may have this beautiful flower at its very best. Whilst it is possible to refer only to representative beds, myriads must go now comparatively unnoticed. Lovers of summer-bedding may do far worse than pay a visit to Hampton Court just now, and have their fill.

I purposely left mention of the carpet-beds, so-called, to the last, for these there is amongst the *élite* of horticulture much apparent distaste, although I am not quite sure that it is all real, but amongst the masses—the uncultured in floral taste, there can be no question as to their popularity. After all, what is summer-bedding but pictures in colours, whether of flowers or foliage? And if we may not employ the greens, golds, crimsons, and many other hues found in dwarf carpet plants in making out designs of exceeding beauty, of what use are they? Well, right or wrong, vulgar or otherwise, I do like to see a few good carpet-beds still, and there are two or three at Hampton Court that are charming. One has a green ground of *Herniaria glabra*, and consists of two balloons of gold, red, and crimson *Alternantheras*, with a pretty star in the centre, surrounded by small moons and crescents. This is a most striking design, and is cleverly worked out. Another is of a scroll or Malve pattern, having for centre a pretty and large Maltese cross. A third is of a totally diverse design, &c., but it needs ample room to describe these fully, and when done, no accurate impression is conveyed. In any case they, as does all the bedding, reflect the highest credit on the superintendent and his foreman, for the entire bedding display may be regarded as one of the most effective in the kingdom. *A. D.*

NEW OR NOTEWORTHY PLANTS.

PHYSOSIPHON LINDLEYI, Rolfe.

THIS species flowered with Mr. F. W. Moore at Glasnevin in April, 1892, and proved identical with a dried specimen collected by M. J. Linden, near Chiapas, Mexico, as long ago as 1840, which was confused by Lindley with his still imperfectly-known *P. carinatum*. It has larger flowers than the well-known *P. Loddigesii*, Lindl.; in fact, they are the largest known in the genus, measuring 7 lines long. The

sepal-tube is light-green, and the lobes orange-red, or brick-red, in colour (and so far like the other species). *Kew Bulletin*, 1893, p. 61.

BULBOPHYLLUM RACEMOSUM, Rolfe.

A Bornean species, allied to *B. anceps*, Rolfe, from the same country, but with much larger flowers. They are honey-coloured; the dorsal sepal and petals, also the lower part of the lateral sepals, are spotted with maroon, while the lower part of the dorsal sepals is striped with the same colour. The lip is purple with black dots. It flowered in the collection of Sir Trevor Lawrence, Burford, Dorking, in August, 1892. *Kew Bulletin*, 1893, p. 61.

CIRRHOPELALUM BRIENIANUM, Rolfe.

A Bornean species, introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it flowered in March, 1891, and afterwards with Mr. J. O'Brien of Harrow-on-the-Hill. It is allied to *C. Makoyanum*, Rehb. f., and has the lateral sepals straw-coloured, and the rest of the flower maroon. *Kew Bulletin*, 1893, p. 62.

CŒLOGYNE BORNEESIS, Rolfe.

This also is a native of Borneo, and was introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it flowered in August, 1892. It belongs to the small section *Flexuosæ*, and is allied to the Javan *C. longifolia*, Lindl. The flowers are light buff. *Kew Bulletin*, 1893, p. 62.

EPIDENDRUM LAUCHEANUM, Rolfe.

A distinct species, of the section *Spathium*, allied to *E. grandiflorum*, Lindl., introduced from Popayan by Messrs. F. Sander & Co. of St. Albans, with whom it flowered in November, 1889, and afterwards with Mr. F. W. Moore of Glasnevin. The peduncle is flattened, and, like the sepals and petals, light ochraceous brown, sometimes dull purple-brown, and the lip glaucous green. *Kew Bulletin*, 1893, p. 62.

EPIDENDRUM TRICOLOR, Rolfe.

A Venezuelan species imported with *Cattleya Mossii* by Messrs. Hugh Low & Co., of Clapton, with whom it flowered in November, 1892. It is closely allied to *E. purum*, Lindl., but has an orange-coloured lip, by which it is easily distinguished. The sepals and petals are light yellow and the column green. *Kew Bulletin*, 1893, p. 63.

STANHOPEA LOWII, Rolfe.

A handsome species, introduced from New Granada by Messrs. Hugh Low & Co., of Clapton, with whom it flowered last December. It is allied to *S. eburnea*, Lindl., and *S. Reichenbachiana*, Roezl. The sepals and petals are of a creamy-buff shade, the latter with some minute brown spots on the disc, and the lip ivory-white. The hypochil is globose, and the front of the lip shoe-shaped. *Kew Bulletin*, 1893, p. 63; *Orchid Review*, i., p. 117, fig. 12.

ÆRIDES PLATYCHILUM, Rolfe.

A very pretty *Ærides* of unknown origin, which flowered with Mr. F. W. Moore at the Glasnevin Botanic Garden, in April, 1892. It is allied to *A. Houlettianum*, Rehb. f., but is easily distinguished by having a flat or slightly convex lip. *Kew Bulletin*, 1893, p. 64.

MILTONIA × JOICEYANA, new nat. hybr. (CLOWESII × CANDIDA).

A remarkably handsome *Miltonia*, the conformation of whose flowers leaves little doubt as to its hybrid origin. It is as showy as *M. Bluntii* and its variety, *Lubbersiana* (Clowesii × *spectabilis*), and a welcome addition to our garden Orchids. Its growth resembles that of a very stout *M. Clowesii*, and the inflorescence, which rises to a height of about 2 feet, bears flowers much as in that species, but the individual flowers are totally different, and bear distinct traces of *M. candida* in the broader segments and the ample labellum, which, although exhibiting the tendency to reflex on each side of the middle portion, inherited from

M. Clowesii, also exhibit in the notched, frilled, and upturned margin, a tendency to become convolute, as in *M. candida*. The sepals are clear yellow, heavily blotched with chestnut-brown, $3\frac{1}{2}$ inches from tip to tip at their greatest expansion, and half an inch broad, ligulate in form; petals similar in colour, but three-quarters of an inch broad, and more acuminate than the sepals, both sets of segments having a white base tinged with purple. The labellum is ovate, $1\frac{1}{2}$ inch broad in the front portion, the sides of the middle portion curving backward, so as to give the organ a pandurate appearance. The edges of the basal part of the lip are finely toothed, the front being notched and frilled, the edge curving upwards. There are two main ridges running up the middle of the base of the lip, with two lesser and shorter ones on each side of them. In young flowers the base of the lip is purple, the other part lilac, shading off to white at the edge, but as they mature, the lilac part gets an Indian-yellow tint, which is very charming. Column white, tinged with purple on the wings.

It is a fortunate plant, bought by Mr. Thorne for Major Joicey of Sunningdale Park, after whom it is named, at Messrs. Protheroe & Morris' Rooms, as *Odontoglossum ramosissimum*, so there is some virtue in getting a plant under a wrong name at times. It is Brazilian, I presume. *James O'Brien*.

TOURING IN KUMAON.

ON November 10, 1892, I left Ramghur for one month's outing, to the Himalayan snows. Travelling in Kumaon is so absolutely unlike anything in England, that I think your readers will not be uninterested in knowing how the journey was set about. In the first place, railways are quite unknown, so practically are wheeled conveyances of all kinds, so getting about Kumaon resolves itself into three methods, viz., walking, pony-riding, or the use of the dandy or jhampan. The latter is a curious-looking article, a sort of Sedan-chair projected into the middle of a miniature canoe; this is carried from the shoulders of coolies. It is of great value for ladies, children, and invalids, but no one with a good pair of legs would be seen in one of them; and so for healthy travellers the usual and best method is either walking or riding. For the latter purpose a Bhootia pony is usually selected. Wonderful little ponies they are too, usually about twelve hands high, and remarkable for climbing up the steepest of hills, over the roughest roads, and down semi-perpendicular hills with unerring safety. Indeed, they will carry twelve stone down places where it is difficult to stick in the saddle. They come from Bhute, the other side of the snows, in the direction of Thibet, &c. The Bhootias are well-known traders, and frequently seen in Kumaon, but they are a Mongolian-like race of people, unlike the Hindoos in every respect.

I started with some eight extra-strong coolies, a cook, pony, a groom, three guns, &c. Of course my stores had to be made up with a view to lasting a month, and contained medicine in case of need, and a good double Cabul tent, and the usual odds and ends for roughing it in out-of-the-way places fifty to a hundred miles from European stations of any kind. Thus prepared, I left about 6 a.m. on November 10, in most glorious weather. Indeed, one of those brilliant cloudless months that you must come to Kumaon to realise in November.

From Ramghur Gardens you make an immediate and sharp descent of some four miles into the Ramghur valley, where there is a river, sundry villages, some cultivation of kinds. The natives grow several kinds of grain, such as Wheat, Barley, Rice, and two kinds of native grains called by them *Maduwa* and *Kounee*. I have to regret I do not know the botanical names of these two grains. The *Maduwa* is evidently a kind of Millet, and grows generally with three inverted claws [Can our correspondent mean Nepal Barley. Ed.], and is decidedly a taking-looking crop seen growing. It gives very stout and long straw, and the grain from which they make cakes, &c. is highly appreciated by the natives.

The Kounee is something after the style of Wheat to look at, but very much longer in the ear, and generally curves inwards; the seed is shiny brown and of light straw colour, and very small for so large a plant. Here too, Water Cress is indigenous. I asked my servant what he called it, and he merely said it was a Thurkari plant, which is our way of saying it is a vegetable.

The road leads through the valley some 2 miles. During this distance the river is crossed, and we begin the ascent, the counterpart of the descent. There is nothing remarkable about the next 4 miles, the road is of the usual up-and-down character of Kumaon travelling, but on this particular occasion numerous villagers were what is familiarly known as "going down," that is, going down to the Jerai for the winter—and what a curious sight they present, simply hundreds of cows, goats, kids, buffalos, calves, &c., all promiscuously mixed up; meanwhile, men, women, and children, carrying fowls, ducks, pots, pans, and kettles, water-vessels, clothing, and innumerable odds and ends. They are decked out in dresses of almost every colour under the sun, and the road was full of dust from this motley cavalcade. After awhile we reached a small flat, in which there are numerous trees of the indigenous wild Pear tree, profusely covered with Mistletoe, well berried, too, even in November. Soon after, we reached the Peora Dak Bungalow, and call for a halt for breakfast, having done 10 miles. The Dak Bungalow is a kind of hotel, where you can stay for forty-eight hours for about half-a-crown, and take breakfast or any other meal. All the articles obtainable, and all the rates for the same, are fixed by the government; so if you know the vernacular language, no extortion is possible; but if you do not, woe betide you! The khansama (head servant) is a wily customer, anxious to possess the contents of your pocket. These places are simply furnished, and you must find your own bedding in all cases, but this is so well understood, that nobody travels without bedding. Dak bungalows are an invaluable institution in Kumaon. After two hours' rest, we moved on for Almora, the dingy little capital (civil) station of Kumaon. A station is the usual term for a European or government settlement in India. Some half-hour after moving off from Peora, we came across a great lot of the brilliant parakeet birds, called *tuti* by the natives, screaming, and making the place resound with their noises. These birds are very fond of acorns, and as there were plenty in this neighbourhood, this was presumably the reason they were here in such quantities.

Travelling some 2 miles, we again came across more Mistletoe, and shortly afterwards came to a large Pine forest. Some 3 or 4 miles through this Pine forest leads down to a river of respectable size, on the opposite side of which is an enormous range of more or less barren rocky hills, here and there dotted about with Pine trees and a common indigenous Cactus, ranging from 5 to 15 feet high. This river has to be crossed, and we immediately begin a long winding ascent of some 5 miles into Almora.

On the road numerous plants of a brilliant Lupin (yellow) were noted, some in full bloom, others in full seed, and some beautiful grasses were in evidence too, notably a pure soft white grass, with a kind of knotted inflorescence growing, I noted, only in the driest of rocky places. This is a very chaste and charming grass, by no means plentiful, I gathered some blooms, but could not find a single seed in it.

As you near Almora there is a partial avenue of the Tallow-tree, so-called. What is the name of this tree? It bears soapy or greasy seeds of a tallow-coloured white.

ALMORA.—Eventually we sight Almora, and soon get within the compound, and the first most unfortunate thing that strikes one is the Leper Hospital, close to the station. This hospital is surrounded with very good Deodars, and looks rather a charming place from the outside. But fancy plantings such a place within the very bounds of the station; this has been so very often and severely commented upon, I say no more about it. In the course of half an

hour we come to the mall of Almora, and the first striking thing that catches a gardener's eye is the shop of Lalla Sham Lal, with a pretty Bougainvillea *glabra* running over the top of the building; and some 30 feet up, a tree in the immediate neighbourhood of the building, and profusely in bloom.

We reach the Dak Bungalow in about five minutes, and a real melancholy seizes one on surveying the barren, treeless place; this is technically the capital of Kumaon, but a more dreary, barren place, can scarcely be imagined. Nevertheless, it is a warm dry place, with a small rainfall, and invaluable for certain classes of sickness contracted on the fiery plains of India.

The next morning we moved off about 6 A.M., for Bogeswar, some 26 miles distant; the first 4 miles of road is round a winding hill, and as one reached the ridge, Almora looked really fascinating in the distance with the white-looking bungalows interspersed with Deodars. This is undoubtedly the best side to see the station from.

Having reached the ridge in question, which is some 7000 feet in elevation, we make an equally long descent, during which Binsar, the former residence of General Sir H. Ramsey, was clearly seen in the distance at some 8000 feet elevation. Sir Henry was for nearly half a century the ruling genius of Kumaon, and was not unfittingly called the King of Kumaon. From every side one heard a good many tales of the brilliant General whose work was more civil than military, but he had a fine combination of the iron hand beneath the velvet glove. The general possessed the finest collection of Apples in all India, his method was to root up any kind that did not succeed, and by constant adding during something like forty years, he succeeded in getting a really grand lot of Apples that do well in India. I hear, however, at this date that the real demon of Kumaon, viz., hail, has played great havoc with the fruit this year, as it has in so many other places in Kumaon. *F. W. Seers, Ramghur, June 25, 1893.*

(To be continued).

PLANT NOTES.

COLOCASIA ANTIQUORUM.

This is an old-fashioned foliage-plant, with large dark green leaves, which accommodates itself to cultivation in rooms, and is an object of beauty on the table, in vases, and aquaria—not directly in the water, but on the margin. It is not very particular as to soil, and succeeds capitally in a mixture of charred earth, peat, leaf-mould, and sand, and the drainage should be sufficient, but not excessive, in amount. The leaves are ovate, more or less peltate, 1 foot or more long. It is a more satisfactory plant than most Palms, *Dracenas* with coloured leaves, *Caladiums*, or *Ferns*, for the living-room, a quick succession of leaves forming during the summer.

COLOCASIA ESCULENTUM.

This has peltate-cordate leaves of a dark green colour, and when it has plenty of nutriment they attain a large size. The plant is excellent for rooms if afforded the same kind of treatment as the foregoing. Both of the above may, in winter, have all their leaves, except the central ones, cut off, and be stored, partially dry, in a greenhouse, or better, in a house where the temperature is not less than 50°. The pots should not stand on shelves or other dry places, but rather on an earthen floor.

FRUIT AT BARHAM, KENTISH COURT.

THE fruit crop at this well-known garden is again abundant, and the remark applies almost equally to all varieties. If there is an exception, it is the Plums, which are not quite so plentiful as they usually are. Pears are a good crop, though they may not reach the weight of last season, when some of them turned the balance at 1 lb. 11 oz. The Apples, however, form the greatest feature of the establishment; at no other place do we remember seeing such

excellent Apples as Mr. Geo. Woodward produces here in the open, and if they are gathered and dished for exhibition, the general opinion of them is that they are from the orchard-house. Nor are we surprised, for they grow to an immense size, of the most perfect shape, and with skins delicate and clear, and possessing a bloom such as is but rarely seen upon Apples in the open air. Alexander, for instance, a good old variety, but one which in the greater number of gardens is seen with a scab or two upon the skin, is here as free from any such defect as other varieties, and what a very pretty fruit it is! Peasgood's Nonsuch becomes everybody's nonsuch, and *Mère de Ménage* attains a remarkable colour. Washington does well outside, and Bedfordshire Foundling comes to very large size. There are no Apples or Pears under glass, and this may perhaps be borne in mind with advantage by any who may happen to see these fruits exhibited from the establishment during the coming autumn. If Apples are a feature here, the same must be said of the Peaches, for where are there finer crops of better quality produced inside or out than here?—and last year were gathered more than 13,000 fruits. The trees outside upon the walls—and they are many—are trained with as much care as those inside; in fact, the cultivation is just the same for both, and the results show but little difference. This can be said of few places, we are afraid; but in how many gardens would it pay to expend the same time and care on outside Peaches as on those inside? only in highly-favoured places, we imagine. Some trees on a west wall are quite a success, but no doubt this can be done in most of the southern counties. The trees are syringed twice a day regularly, and there is no red-spider; for upon the faintest sign of this enemy, the shoots affected are sponged. Thinning of fruit is practised upon all trees thought to require it, whether they be Apples, Pears, or Peaches. Mr. Woodward is evidently a fruit specialist, and he understands the subject thoroughly; if he is short-handed, then the trees and crops receive his first attention, and should anything suffer, or be put off a short time, it is the upkeep, which he would be apt to allow to lapse. Does this sound like the tactics of an untidy gardener? We think not—at any rate, Mr. Woodward's place has not that appearance; and if a gardener has strong sympathy with his trees, it is pain for him to see them want for anything.

Of the Peaches inside, those that more especially call for remark are the standard trees in a span-roofed house; here the crop was marvellous, and the Peaches of first-rate quality. Asked if he liked this system best, Mr. Woodward replied in the affirmative, and gave three reasons for doing so—1, a greater number of Peaches of equally good quality can be grown in the same area; 2, the labour necessary is not so great; 3, the fruits—which ripen at the tops of the trees first—come in a better succession, and the season of each variety is very much prolonged. His experience is, that the fruits are of equal flavour to those grown on trellises, and they colour quite as readily, even those towards the bottom of the trees. We have heard the same testimony with equal earnestness from Mr. Burton at Bexley Heath, another noted Peach-grower, and so we are led to ask why this system is not more common than it is? Of course one condition would be requisite, viz., that the house, instead of being a lean-to, must be built with due regard to the accommodation of standard trees, and if such were done, it certainly seems that the result would justify the departure. At any rate, it is a pretty sight to go into one of these standard Peach-houses, either when in bloom or when the trees are ripening their fruit.

A very unusual circumstance may be noted here, and one which may, perhaps, have an influence in the general success secured with trees inside and out. The whole water supply is from the River Medway, and it is brought through pipes which run right along the tops of the garden walls, and exposed to the full rays of the sun. In the summer-time, therefore, when a quantity of this is required for watering and

for syringing, it is quite warm. In regard to pruning, we are not surprised to find Mr. Woodward favouring the extension system rather than severe pruning. His soil and climate are such that the trees do not require so much cutting as other districts render necessary. He, however, prunes a little if the trees are bearing too freely, and producing small fruits; but if the trees are growing well he "lets them get away, but thins the branches," believing that if he cuts them unduly, they would make more wood and in proportion to the extent the knife was used.

These are a few remarks written after a hurried visit to one of our best fruit gardens, and to one of the most genial and hospitable of gardeners.

SWEET-SCENTED CLEMATISES.

Of our type species of *Clematis viticella*, *patens*, *florida*, and *montana*, the latter appears to be the only one that can claim to be fragrant, and the wonder is that quality alone, apart from its wonderful floriferousness, does not secure for it an extended cultivation. This highly ornamental and free-growing hardy Indian climber is, to quote from Jackman and Moore's *Book on the Clematis*, "well adapted for training over walls and trellises where a considerable space requires to be covered. In fact, the more freely the plant is allowed to grow, the more ornamental it becomes, on account of the greater profusion of blossoms produced when well established; it will grow from 20 to 30 feet in a season, while every joint will bear blossoms as white as snow, in wreaths from 10 to 20 feet long. The blossoms are so copiously produced, several springing from each axil, that the branches literally become converted into floral garlands." This species has received the name of *C. odorata* from the sweet perfume dispensed by its flowers, and it has also been called *C. anemonædora*, from the resemblance borne by its flowers to those of the wild *Anemone*.

C. Jackmanni, and the varieties bearing its character, appear to be wanting in fragrance, or if they possess it, only in a limited degree; nor has this quality been prominent in *C. lanuginosa* and its progeny. But some crosses made at Woking twenty years ago by using the pollen of *C. patens*, *C. Fortunei*, *C. Standishii*, and *C. Sophia plena*, all of which partake of the *patens* character, being early-flowering, or to *C. Jackmanni*, *C. rubella*, *C. rubro-violacea*, and *C. magnifica*, the intercrossings being also reversed, gave a progeny, one portion of which followed the early-flowering parents of the *patens* type, while the other portion partook more of the character of the late summer-flowering parents of the *Jackmanni* race. Some of the early-flowering varieties which came from these crosses, more particularly *C. Fair Rosamond*, *C. Edith Jackman*, *C. Maiden's Blush*, *C. The Queen*, *C. Stella*, and *C. Vesta*, proved to be remarkable for their strong and agreeable fragrance—something intermediate between *Violets* and *Primroses*—which they exhale when in a warm, sunny atmosphere, and which is most pronounced in *Fair Rosamond*. It is found also that the odour varies; in the cases of *Fair Rosamond*, *Edith Jackman*, and *Maiden's Blush*, the perfume is that of the *Violet*; in the cases of *The Queen*, *Stella*, and *Vesta*, that of the *Primrose*. It is supposed that the quality of fragrance was originally derived from *C. Fortunei*; the flowers of this double form, which was introduced by the late Mr. Robert Fortune from Japan, have a slight and agreeable fragrance, like that of the *Orange-blossom*.

In reference to the culture of these fragrant Clematises, it should be borne in mind that as they partake of the character of *C. patens*, they bloom early on the ripened wood of the previous year, and not like *C. Jackmanni* and its allies—on the young wood of the current year. This is a distinction it is most important should be borne in mind; therefore, pruning is of the first importance, and it should consist in cutting away the old wood which has borne flowers in the previous spring, and weak, straggling, and over-crowded growths. Whether the plants be trained to pillars or against walls, the

strong one-year-old wood only should be trained in as far as it has become thoroughly ripened, as it is this will produce flowers the following spring. Pruning is best done in February or March, after danger from hard frost has passed away. *R. Dean*.

COLONIAL NOTES.

BOTANICAL STATIONS.

(Continued from p. 180.)

TRINIDAD.

To effect the transport of plants to foreign countries, the botanical staff of a colony must possess, not only an accurate knowledge of the countries themselves, but also of the routes traversed by railway or steamer, for unless the climatology of a country is known, it is hardly possible to make successful introductions of suitable plants either to or from such a country. For instance, we as yet know little or nothing of the climate of New Guinea or Western Australia. The meagre information given in the Colonial Office List, being utterly inadequate for our purpose, as only the mean for the year is given (65° Fah.). Between Jamaica, Mauritius, and Trinidad, we are better able to institute a comparison, as meteorological statistics are regularly kept. In the matter of climate, both Mauritius and Jamaica have an advantage over Trinidad in having a greater range of temperature in the inhabited districts—the hill temperature being the cooler. The average rainfall of Mauritius is 47.98 inches, while that for Trinidad equals 65.91 inches annually. The average temperature for the year 1890 at Mauritius was 72° 2', while the mean annual of Trinidad showed 77° 5' Fah. In some of the hill districts in Jamaica the mean annual temperature is 63°, in Mauritius 67°, while in Trinidad our hill temperature is not recorded, which makes Trinidad compare unfavourably with those countries in such returns.

It will be seen, therefore, that temperature in many respects reveals the character of a flora, and, together with the relative humidity, wholly determines it. It is not enough to say such a thing grows in Jamaica, it should grow in Trinidad. Such a thing grows in tropical Australia, it should also grow here. No inference that can be drawn could possibly be more deceptive. We want to know from what part and what elevation a plant comes, and the special meteorological condition of that part, before we can even "begin to form an opinion" as to whether a plant thriving in one place will thrive in another to which it is introduced.

In England, for many years, several plants introduced from Jamaica were (because they came from Jamaica) put into tropical hot-houses, and, as a result, the plants died consignment after consignment; but when the climatic condition of that portion of the island was known to the English cultivator, the case was altered, and the plants could be readily and easily grown with the appliances at their command. Conifers will not grow on the south side of Jamaica; in Trinidad, they do fairly well. The cause is readily apparent to those interested in the matter, in the difference of the climatic conditions; although in this case the temperatures are similar, almost to a degree, yet the relative humidity is totally dissimilar.

Successful gardening in the Tropics almost entirely depends upon the introduction of plants from a suitable or similar climate; and although there are a few ubiquitous plants which appear to thrive under the most contrary conditions, the majority of plants will only thrive in similar climatic surroundings as prevail in their native country. The Rose, we know from English practice, stands "forcing" well, but there are varieties which are useless for that purpose. Those varieties it is useless to introduce to a climate like that of Trinidad, as they will produce little else but leaves. In fact, to grow the Roses at all, means constant renewal of plants, and renovation of the soil in which they grow; and those varieties which stand the process of "forcing" in hot-houses out of their season in Europe are those best suited for tropical culture—the sweet-smelling "hybrid perpetuals" of English gardens being well-nigh useless. It will thus be seen how much depends upon the science of meteorology, and how important it is that continuous and accurate records should be kept. *J. H. Hart, Superintendent, Trinidad Botanic Gardens.*

HONG KONG.—The usefulness of the Botanical Department as a centre for the distribution of information and advice is, says Mr. Ford, constantly availed of by local correspondents, and others in China and all parts of the world. It is sometimes a tax to attend to the correspondence, but at all times, when it is possible, inquiries are cheerfully replied to, even when nothing is gained in exchange, as it would be discourteous to leave such communications unattended to.

THE SUGAR-CANE IN NATAL.

On this subject, which is of importance to the colony, we have received intelligence from a most trustworthy source, and to the effect that the cultivation of Sugar is advancing by "leaps and bounds," and the prospects are very encouraging. Prices are higher by some pounds than they have been for

years past, and the increase in the exports to the Transvaal, which draws supplies from Natal, gives assurance of a largely increased demand on the spot. Manufactories are being established on the central mill principle, under which growers dispose of their canes to the proprietors of these manufactories, which is found to be the best because most remunerative system. In other things the colony is advancing, stimulated doubtless by the rapidity of transit between Cape Colony and Johannesburg since the completion of the line of railway—bringing London within three weeks of the mining fields.

VEGETABLE FIBRES IN UPHOLSTERY.

Since the appearance of our note "Stock-taking for May," in which mention was made of the high prices realised for silk, vegetable fibres have come to the front with a rush, and there has been a large demand for woollenised jute and China-grass as well as worsted for upholstery purposes. Of course, as a result, silk has fallen, but doubtless a large quantity of fibre will be used up in goods for decorative and other purposes. It ought to be more widely known than it appears to be that these vegetable fibres will not stand cleaning—that when faded they can only be renewed by substitution of new stuffs. More than this, when silks, jute, and worsted are mixed, they expand and contract unequally, and a rough surface is too often apparent where a smooth one is to be desired. This brief note may be found of use by readers contemplating fresh interior decoration. Of course, price has something to do with mixture; but the tradesmen ought to know what mixtures are least pernicious, as well as most effective and cheap.

NEW INVENTION.

AUTOMATIC TEMPERATURE RECORDER.

THERE are now in operation on board two steamers making their way to the Antipodes, and on a bench in the mezzanine floor of Messrs. Negretti & Zambra's Sale-rooms in the Holborn Circus, specimens of the Temperature Recorder, designed for use in the coal-room of ocean-going steamers, designed and manufactured by the firm just mentioned. In May last (p. 626) we drew attention to this matter, and a reference to that short article will spare further introduction. The instrument has been on trial at home for some five or six weeks past, and the trial—of which we have seen the evidence—is so far very satisfactory. The instrument is a very simple affair. A finely-executed piece of clockwork, which runs for eight weeks, carries on its periphery a strip of paper, scaled to degrees, and parts of degrees if requisite. So long as the mechanism moves, just so long does this cylinder rotate and receive the impress of the stylus or pen. All this is contained in a nearly square wooden case, one side—that adjacent to the pen—being formed of glass (for purposes of observation, as understood). The top of this case is movable, and is hinged, so that the cover cannot be removed. The whole, when fixed, is securely locked, and thus the record cannot be tampered with. But how is the pen actuated? Outside the case is a bulb and tube filled with a liquid whose ingredients are prepared by the firm already noted. As this liquid contracts or expands, a clever adaptation of levers connected with the stylus is got in motion—the record is completed! So from day to day this quiet bit of work is carried on in silence and darkness; and the engineer outside, whose duty it is to attend to the temperature of the cool-room—to the withdrawal of warm and the substitution of cold air—is quite aware of the proximity of this truth-teller, and makes further endeavour, if that be needed, to do his duty. At the end of each voyage both logs—the silent automaton and that kept by the engineer—will be compared in connection with the cargo stored in the cool-room; and all this must tend to the profit of the importer and of the consumer at this end of the voyage. There is always a

"but" or an "if" in all human affairs and contrivances; and the present is no exception. If the oscillation of the ship in any way affects the working of the recorder, then it will have to be swung from a ball-and-socket joint or gimbal, to ensure steadiness; and to prevent the necessity for a sudden injection of cold air into an atmosphere in excess of what should be its normal degree of heat, the inventors of this contrivance should go a step further, and furnish a tell-tale for those responsible in the matter of temperature. Not but that there are ways and means now in existence, but these must be severely taxed in steaming through tropical seas. It may be further noted that the tube containing the fluid, being exterior to the case, requires some sort of simple but strong protection—just to save awkward consequences of something breaking away, and tapping or breaking the bulb. The subject is an important one for all connected with the fruit trade of the Antipodes, and with the import of agricultural produce from our colonies, near and far, and this must be our excuse for drawing attention once more to this subject.

AZOLLA.

SOME time since we were favoured by Mr. Greenwood Pim and by Mr. Burbidge with specimens of an *Azolla* in fruit which excited much attention. The species is *A. filiculoides* of Lamarck, a species having an extremely wide distribution—nearly from one end of America to the other on the Pacific side. The plant is a pretty little aquatic, looking like a moss or a *Selaginella* floating on the surface of the water, and throwing down into the water straight, thread-like roots, which in the young state have a root-cap which disappears as the roots increase in age. The stems branch in a pinnate fashion, and bear four rows of numerous densely packed leaves of an ovate shape, pale green, and often flushed with a delicate shade of pinkish-brown and of velvety texture. Each leaf has a rather thick cushion-like pad of cellular tissue in the middle which facilitates floating. The leaves are described in all the text-books as deeply bifid, but they divide so very deeply that the lobes may well be mistaken for separate leaves. Moreover, the base of each leaf, as it grows, becomes hollowed out into a cavity, easily seen on making a section of the leaf.

In the axils of the leaf towards the base of each shoot are found the "sporocarps," or as we may loosely term them the capsules (see the arrows at fig. 37, B). These are of two kinds, the one, E, ovoid-acute, and considerably larger than the other, C, which is oblong, cylindric, and acutely pointed. Not unfrequently the two kinds of capsules occur in the axil of the same leaf. The larger of the two capsules E, contains a mass of stalked subglobose spore-cases (sporangia), shown at F, as magnified thirty times, and one of which is shown isolated at G. When these are opened, or burst open by pressure, an infinitude of minute globose spores (microspores) are seen frequently massed together into ovoid groups (massulæ) H, from the surface of which project hyaline threads bearing at the extremity an harpoon-shaped process, J. The lower part of the thread is hyaline and translucent, whilst the harpoon-like portion is separated from the supporting thread by a septum, as shown in Mr. W. G. Smith's drawing, as if the contents of the thread had passed wholly into the harpoon-like portion. The smaller Pear-shaped capsule, C, D, contains a single spore—the megaspore. The larger capsule, E, is comparable to the indusium of a Fern, such as *Hymenophyllum* or *Trichomanes*, but whereas that is open at the top, it is closed in *Azolla*. The stalked spore-cases, F, G, are analogous to the sporangia or spore-cases of the Ferns, probably to the anthers of flowering plants, and the small spores are the equivalents of the small spores of *Selaginella* or to pollen-grains. What the harpoon-like bodies may be is not known with certainty. At any rate, when the spores are detached and floating on the water, these harpoons are serviceable in hooking on to the female spores.

The larger sporocarp E, thus contains the microsporangia, F, G, and these in their turn contain the microspores, H, with their harpoons, J. The smaller sporocarp, C, is Pear-shaped, and contains a single megaspore, D. This is all that can be seen in the specimens before us, but those who have watched the further stages of the process, describe the microspore as producing a single antheridium, and the female megaspore as of complicated construction, ultimately buoyed up on the surface of the water by a tuft of fine threads, the analogues of the harpoons of the

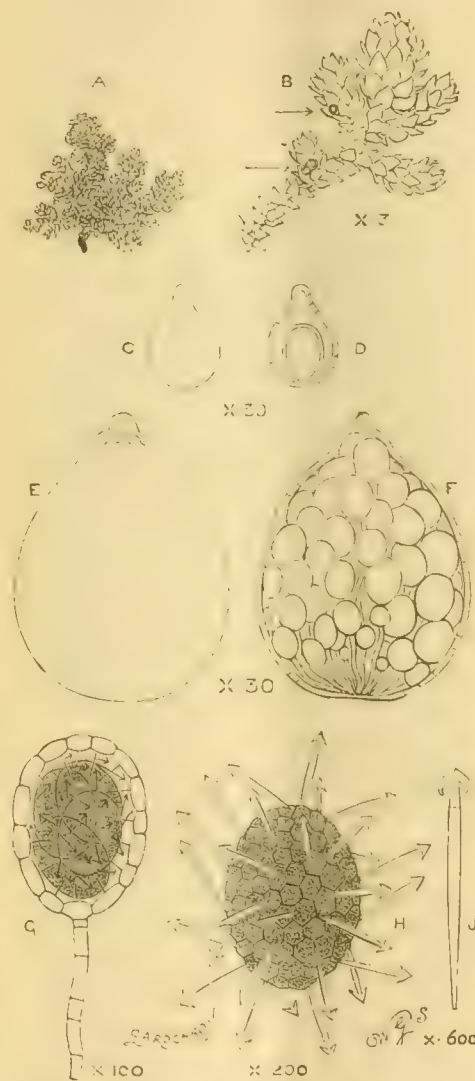


FIG. 37.—AZOLLA FILICULOIDES.

A, Plant; B, the same magnified 3 diam. (the arrows point to the position of the sporocarps); C, a female sporocarp; D, section of the same, showing immature megaspore; E, male sporocarp; F, section of the same, showing the microsporangia; G, a stalked microsporangium, isolated, magn. 100 diam.; H, group of microspores, with their "glochids" or harpoon-like processes; J, glochid separate, magnified.

microspore, and giving exit to the prothallus bearing the archegonia. The male spores hook on to the female spore and prothallus by their harpoons, and thus fertilisation is effected.

Those who wish to pursue the subject further should consult the ordinary text-books, and the classical memoir of Strasburger, *Über Azolla*, Jena, 1873, p. 78, tab. vii., figs. 109—111, and *Martius Flora Brasil.*, vol. i., pt. ii., p. 658, t. 82. Quite recently, too, Professor Douglas Campbell has published (in the *Annals of Botany*, June, 1893) a paper on the development of *Azolla filiculoides*, which is of high importance. In it the Professor calls attention to the close resemblance of the megasporangium, C, to an ovule in its mode of

development. As the chief interest in these plants consists in the evidence they afford as to the possible lineage and interconnection of the various groups of flowering and flowerless plants, this resemblance is specially significant.

Another interesting feature should be mentioned in the constant presence of threads of an *Alga Anabæna* in the cavities of the leaf; whether this "commensalism" is mutually advantageous is not known. *A. nilotica* is beautifully figured and described by Mettenius in the *Plantæ Tinianæ*, as far as his material allowed. It is refreshing to consult his clear concise diagnosis and subsequent comment, and to compare it with the long-winded dissertations of some modern writers on Cryptogams, especially Germans, where one may read, or try to read, page after page without being able to grasp any definite meaning, or obtain any precise or comparative statement. Before being enabled to recognise a particular plant, one is plunged into the subtlest mysteries of its mode of life, to follow which at first hand is necessarily reserved for the few. Of course these are matters of extreme importance, but the student requires first of all to be able to recognize what he sees, and to gain some general knowledge of the plant as a whole before working out the details.

AMERICAN CONIFEROUS FORESTS.

At the Nurserymen's Convention, held in Chicago recently, Mr. Robert Douglas read a paper, from which we take the following extracts:—

HALF A CENTURY AGO.

I well remember sailing up the St. Lawrence in May, 1836, when in sight, for the first time, of an indigenous evergreen forest, saying to myself, "Well, now I can ramble in the woods to my heart's content! No gamekeepers here! No finger-boards, cautioning me to beware of man-traps and spring-guns!" We reached Quebec May 21, in the midst of the spring fleet, for even at that early day vessels came from Great Britain—coming in ballast, and going back laden twice a year with lumber, which was brought from the interior in rafts to Quebec.

In 1837 I travelled from Quebec to Niagara Falls, and forests were everywhere in sight. Farmers were girdling the trees and growing crops among the gaunt dead Pines, which looked like goblins on a moonlit night.

On my way to Vermont in 1838 I saw fields fenced with White Pine stumps, only a little way east of Troy, New York. East of Bennington, Vermont, they were cutting down the timber and making it into charcoal. On the east side of the Green Mountains farmers were felling the trees in wind-rows and burning them. During the spring of 1844 I travelled through virgin forests in Michigan, and at that time the northern part of that State was covered with White Pine, and the same was true of northern Wisconsin, the Michigan peninsula, and Minnesota, and I never imagined that lumber, especially Pine lumber, would ever become scarce in this country; but when I travelled to the Pacific coast in 1849, and passed through more forest in the first four miles from the shore of Lake Michigan than I found all the rest of the way to the base of the Sierra Nevada Mountains, I became convinced then that the time was not far distant when the country would regret the wholesale destruction of its noble Pine-forests. In 1868, and many years since that time, I have travelled in Colorado and other far western States, and many magnificent coniferous forests, but the axe and the fires have destroyed them, and valuable species will never grow there again. For several years I have longed for a sight of such forests as I saw long ago, but was not gratified until last year, when, in company with my son, I spent the late summer and fall in the forests of Washington, Oregon, and northern California. We spent day after day for two weeks around Puget Sound in the immense forests, where the trees were 100 to 200 feet taller than the tallest trees on the Atlantic slope. Here history is repeating itself, and

I was laughed at for my forebodings, as I had been laughed at on this side of the mountains a generation ago.

THE FUTURE.

Where will you find your coniferous forests on the five-hundredth anniversary of the discovery of America? My belief is that they will stand where the forests have been cut down and burned over, for Nature is more provident than man, and will do the best she can; but the Conifers that Nature will produce in these burned and desolated regions will be neither ornamental nor useful. The same fires that sweep away every vestige of trees and seeds of the valuable evergreens open the persistent cones of the scrub Pines that hang unopened for fifteen years at least, according to my observation, waiting for, what is to them, the friendly fire. The Wisconsin Gray Pine (*Pinus Banksiana*) is already taking the places of the nobler Norway and White Pines. *P. contorta* is covering the burned lands in Colorado and the burned Pine lands in the Rocky Mountain districts, and other species of worthless Pines occupying the burned Pine lands both in the far-west and in the south. But even these worthless Pines have to fight with other comparatively worthless trees for a foothold, for the Aspens and other Poplars, the Birches, and like kinds, producing seeds that are carried long distances by the winds, find the burned lands in the finest condition for germinating delicate seeds, and divide the land with the Thistle, which delights in burned land.

Darwin says the Oaks are driving the Pines to the sands, but without forest fires the Oaks would make little headway. There are Oaks in every Pine forest that I have explored—fires cannot destroy them; they are gaining ground continually, so far as my observation goes. There are other causes operating against valuable evergreens. Nature has a vast family to feed, aside from producing seeds to continue the species. Passenger pigeons, mourning doves and other birds, and squirrels must be fed. The White Pines produced millions of seedlings when bearing trees were in plenty; the birds are taking all the seeds where the trees are scarce.

Then again, evergreen trees with delicate foliage are not able to compete with the coarser kinds; they are scorched and killed if the sun reaches the seedlings the first year, and they damp off if in too deep shade. I noticed this especially in East Tennessee and in North Carolina, where I had abundant time and could see the advantage the Old-field Pine had with its coarse foliage.

SCARCITY OF SEEDLINGS.

While passing through a forest of *Pinus Lambertiana*, the large Sugar Pine, I noticed that the seedlings and young trees were remarkably scarce, while seedlings of other species, not devoured by birds, were creeping in around the edges in vast numbers. The old trees were bearing in quantity huge cones, 10 to 15 inches long and 12 inches in circumference. Squirrels, wild pigeons, and Clark's crow were feeding on the seeds. The cones hang from the utmost point of the upper branches, bending the limb with their weight. The large squirrels go from branch to branch, cutting off the cones, and then gather them together, to be broken up at the base of the trees, and leave, in many instances, a bushel of cut-up cones at the base of the tree, without a single seed that I could find.

In my rambles through the Redwoods I noticed the great scarcity of seedlings; indeed, I never found ten seedlings in a six hours' ramble, except where there had been new cutting and filling on a narrow-gauge railway. Examining the seeds carefully, I found ninety-eight per cent. abortive, but this tree has an advantage over all other Conifers, in throwing up a circle of young trees around the base of each cut-down tree, and is therefore better prepared to hold its own than any other Conifer with which I am acquainted. When we reached the groups of Brewer's Spruce, *Picea Breweriana*, the scarcity of seedlings and small trees was remarkable, but the next morning fully explained the cause. Squirrels were busily employed cutting off the cones.

Grossbeaks and crossbills were tearing the cones, and the little snowbirds that are so troublesome on our evergreen seed-beds were picking up the scattering seeds. Now, since all of these trees known to exist do not number over one hundred, in what other way can we account for the scarcity?

Yes! on the five-hundredth year of the discovery of this continent there will be choice evergreens in America, but, like the buffalo, the elk and the antelope, they will be confined to public parks and private grounds. *Garden and Forest*, June 14, 1893.

TREES AND SHRUBS.

SPIRÆA LINDLEYANA.

This is one of the finest of flowering shrubs, judging from an example to be seen in the grounds of Gunnersbury House, Acton. It is quite hardy and in summer sends up strong shoots, which produce white flowers in large drooping panicles, which are abundant and highly ornamental, and they are followed by pinkish fruit, which hang a long time. The stems are apt to die down, but when they do so they are replaced by vigorous shoots sent up from the roots. Attempts have been made to grow it in an arborescent form, but it does not appear to retain the character, its natural habit being shrubby. Mr. Hudson's specimen is a very fine one. *R. D.*

THE VARIEGATED HYDRANGEA.

I am surprised this attractive plant is not more grown for greenhouse and conservatory decoration. Under glass it comes beautifully variegated, the white of the purest, and then it is singularly effective. I have two good-sized plants of it; one stands in my forecourt garden on a north aspect, where little sun comes, but the variegation is almost absent; the other in a house which catches the full sunshine is the very opposite. Young plants in particular become finely and distinctly marked, and can be employed with excellent effect. Cuttings should be taken only from the most perfectly variegated shoots. *D.*

HOW FOREIGN PLANTS CAME TO EUROPE.

In recent numbers of the *Gartenflora*, Professor Kraus writes instructively with regard to "The Peopling of Europe with Foreign Plants." Up to the middle of our century, four distinct and important periods in this work may be distinguished.

The first dates from the earlier half of the sixteenth century, when German botanists began systematically to take account of all the native plants of their country, the Venetian Government established a great garden in connection with the University of Padua, and similar gardens were quickly formed in other parts of Europe with the express purpose of collecting, in a single spot, as many foreign plants as possible. The catalogues of these early gardens have remained for three hundred years the chief source of information with regard to the first introduction of exotics on a large scale. The catalogue of Gesner, published in 1560, names 1106 garden plants, and may be checked by comparison with an accurate account of the plants grown in the most famous of contemporary establishments—the medico-botanical garden at Nuremberg, with which the names of Camerarius and Jungermann are associated. The contents of such sixteenth-century gardens, says Professor Kraus, may be understood by studying to-day the peasant gardens which lie far from cities, or, still better, the well-tended garden of some old-fashioned rural apothecary. There, in the secluded country, the horticulture of earlier centuries is as characteristically preserved as the fashions in dress of the people.

Just when garden plants thus began to be systematically studied, appeared that new material which entitles this to be called the first great period of plant introduction. Just then oriental bulbous plants were brought to Europe in large quantities.

A definite date for southern Germany is given in the record of the first bringing of Tulips to Augsburg, in April, 1559; and with the Tulips came Hyacinths, Narcissi, Anemones, Ranunculuses, and more besides. They were brought in chiefly by way of Vienna, but through the agency of Netherlands merchants who had settled there, chief among these being Clusius; and it was in Belgium and Holland that the love for them became most pronounced, rising during the seventeenth century into the rage of the "Tulip mania," and persisting to-day as a serious, sensible, and highly-productive commercial tendency. In Germany the garden most fully furnished with these new treasures was that of Von Gemmingen, Bishop of Eichstadt, and in Paris that of the famous Jean Robin, which was uncommonly rich in Lilies, Narcissi, and Tulips.

With the opening of the seventeenth century, the second great period of plant introduction began. Jean Robin's name is especially connected with this period—with the introduction of North American (or, as they were universally called at that time, Canadian) plants. The ancient Locust tree (*Robinia pseud-acacia*), which still stands in the Jardin des Plantes, and was the first to be grown in Europe, celebrates his name and deeds; and in 1635 his garden furnished material for a magnificent work in which forty new American plants were portrayed and described—all of them now thrice-familiar species to the frequenters of European gardens. These American plants came into Germany chiefly by way of Basle, where Baubin possessed their seeds as early as 1622; but they crept very slowly northward. The Wild Grape-vine, for instance, known to Robin and Baubin early in the century, is noted in the University garden at Leipzig only in 1683, and at Wittenberg not until 1711.

Meanwhile, Dutch colonists had settled in S. Africa, and the middle of the seventeenth century marks the opening of the third great period of plant-introduction, when the varied and beautiful flowering products of this region found their way to Europe. The first account of them is in the catalogue of Schuylls, published at Leyden in 1668; and the Leyden garden was enormously rich for the time in plants of all sorts, especially a little later, when Boerhave was its director, and it contained 6000 different species. The garden at Amsterdam rivalled it, however, and Professor Kraus asserts that no single garden has since furnished material for the account of so many plants as were described by the Amsterdam botanists, the Commelines, in their great folio works. The introduction of Cape plants, many of them incapable of supporting a northern winter, was a prime factor in the rapid improvement of hot-houses; while the ease with which they could be produced, and their intrinsic attractiveness, caused them to spread through Europe with great rapidity.

But in the next century a novel artistic movement gave a great impetus to the importation of another class of plants, and thus inaugurated the fourth great period of plant introduction. This movement was the change from the old formal, architectural method of park making to the free, naturalistic, so-called landscape method. Now, in Professor Kraus' words, the horticulturist's main object was "to embellish his landscapes," and for this purpose neither small flowering plants, nor tropical, alien-looking plants of any kind, could serve him best. Hardy trees and shrubs were wanted, and for these he turned to North America again. Europe had become perfectly familiar with many of its finest arboreal products—as with the Locust, the Tulip tree, the various Sumachs, and the Hemlock. But hundreds of others were now added to the list, including the White Pine, Spruces, Firs, and the Bald Cypress, the American Oaks, Maples, and Poplars, the Occidental Plane, the red-flowering Horse Chestnut, Nut trees, Thorns, and the Calycanthus. "Not inaptly," says our author, "are these American trees distinctively called in Germany 'fine park trees'; for in the variety and dignity of their spray, in the form and arrangement of their leaves, and in the shading of their normal and their autumnal colours these Americans have not their equals with us."

Moreover, as these American trees and shrubs were being lavishly introduced, others of similar value to park-makers were being brought from Siberia, and the newly-opened regions of eastern Asia. Siberia sent especially Honeysuckles, Spiræas, and small-fruited Apples, precious for their vernal bloom, but even exceeded in this respect by the flowering splendours of the immigrants from eastern Asia—the Weigelas, Forsythias, and scores of other plants which Europe began to receive about the middle of the century.

Of course, since this time vast treasures of every sort have been added to the European horticulturist's lists, not only from the regions already named, but also from the western coast of North America, the Australasian islands, and the tropics, these last especially enriching our hot-houses, since the present passion for exotic Orchids developed. Nevertheless, by the middle of the century those quarters of the world had been thrown open whose products were radically to transform the aspect of European gardens.

It would be difficult to compute with accuracy the total number of foreign plants now grown in Northern Europe, every year adding, of course, largely to the enormous total. But to give some idea of what this total now may be, we may quote Professor Kraus' statement that, while some 1500 flowering-plants are believed to be natives of England, Sweet's *Hortus Britannicus* names as growing there in 1830 some 32,000 species. This means that even sixty-three years ago, before the prolific labours of the last two generations of explorers and importers, more than twenty-two plants had been introduced by man into England for one with which Nature had there supplied him. *Garden and Forest*.

DIDYMOCARPUS LACUNOSA.

This pretty little plant, of which we give an illustration (fig. 38), was shown at a meeting of the Royal Horticultural Society, on July 25, by Messrs. Jas. Veitch & Sons, Chelsea, when it was awarded a Botanical Certificate. It was described in the *Botanical Magazine*, May 1, 1892, t. 7236; and also in the *Gardeners' Chronicle* for July 29, 1893, p. 120.

NURSERY NOTES.

T. H. CRASP AND CO., CLYNE VALLEY, SWANSEA.

It would be difficult to find a more suitable spot on which to form a nursery than this, both in regard to position and also the quality of the soil. Even during the long-continued drought there has been an unlimited supply of water running through the grounds. Within three minutes' walk are the tram-cars running from Swansea to the Mumbles, so the premises are readily reached from Swansea. The coal supply is assured by the presence of a colliery adjoining.

Within the last three months Mr. Crasp has erected six fine span-roofed houses, each 60 feet by 20. At the time of my visit No. 1 house was filled with a fine lot of Maidenhair Ferns, including about 2000 plants in 6 and 7-inch pots, all in grand condition. Hanging from the roof were some nice young Orchids, such as *Dendrobiums*, *Odontoglossums*, *Cypripediums*, *Cœlogyne*s, &c. Previously this house was filled with a fine collection of some 1500 plants of *Malmaison Carnation*, the true rosy-pink variety, of which Mr. Crasp, as is well-known, is an adept cultivator. Up to the present he has layered some 5000 plants, all looking well, and which will be soon ready for potting up.

The whole of the next house is devoted to Tomatos, the variety being *Surprise*, which for cropping and market purposes is not easily beaten. House No. 3 is also devoted to Tomatos, with *Vick's Criterion* carrying a heavy crop. On each side of this house are *Black Hamburg Vines*, and con-

sidering the short time they have been planted, they have made very good growth.

The next house contains a miscellaneous collection, part being devoted to Tomatos. Under the roof-glass are hanging shelves, on which are growing a fine lot of seedling *Coleus* in 5-inch pots, also a quantity of Ivy-leaved *Pelargoniums* in variety. On one side of this house I noticed a fine batch of *Lockie's Perfection Cucumber*, the whole being intended for seed purposes. My attention was drawn to a pure white *Statice*, supposed to be the only one in the country, which Mr. Crasp intends shortly to exhibit at one of the meetings of the Royal Horticultural Society. Close by were several plants of a rich scarlet-flowered *Begonia*, which is well adapted for climbing purposes; also in this house are a fine batch of that most useful *Fuchsia Triphylla*, flowers orange-yellow.

The other two houses are devoted to Tomatos, from the surface of the ground upwards; Vines are also planted in two of the houses, the variety being

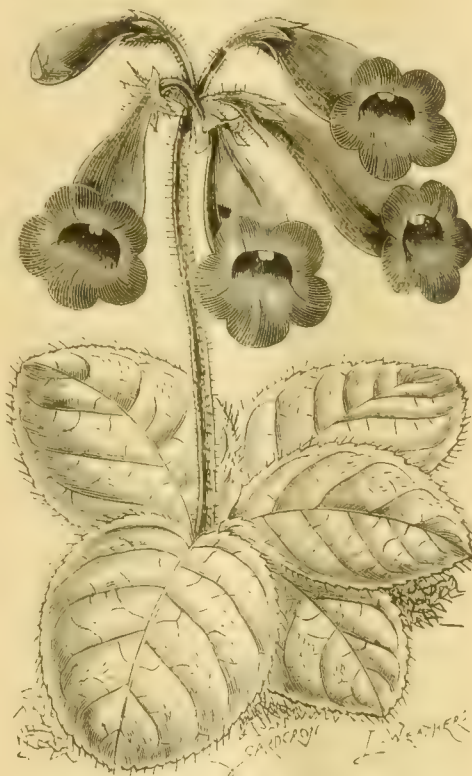


FIG. 38.—DIDYMOCARPUS LACUNOSA: FLOWERS VIOLET-BLUE.

Muscat of Alexandria. Mr. Crasp informed me that during the last six weeks he has been cutting from 100 to 150 lb. of Tomatos each day. In the course of a few weeks it is intended to erect a vinery for late Grapes, 100 yards long by 20 feet in width, which will be used early in the new year for the forcing of early Strawberries, of which some 6000 plants are already layered in their fruiting pots, the varieties being *Laxton's Noble* and *President*. The whole block of houses are heated by one powerful Thames Bank boiler. There are also in course of erection a number of pits, for the propagation of Conifers.

Some 500 plants of tuberous *Begonias* are grown, of a fine strain, and in the best condition, some blooms of the pure white, rose-pink, and scarlet varieties measuring from 5 to 6 inches across. Several hundred plants of *Chrysanthemums* are grown, including most of the leading varieties. A fine dwarf double-flowering *Tropæolum* is being propagated very extensively; the flowers measure from 1½ to 2 inches in diameter, and are of a rich orange colour—for conservatory or greenhouse decoration it will be most valuable, and for bedding purposes also.

A new *Pelargonium* raised by Mr. Crasp, called *Mrs. H. Lewis*, with flowers of a deep scarlet colour, truss large, and a very free bloomer, is well adapted for pot-culture and summer bedding. Two *Cannas*, named respectively *Star of '91* and *Louise Thibaut*, are undoubted acquisitions to this useful class of plants.

At the entrance to the nursery, I noticed some fine standard Laurels, with clean stems, from 5 to 6 feet high, and with heads some 3 feet in height and as far through; also fine banks of young Conifers. The Royal Fern, *Osmunda regalis*, is growing here in numbers, some of the fronds measuring 6 feet in height. Several hundreds of *Arum Lilies*, *Pyrethrums*, *Pansies*, *Irises*, and herbaceous plants also find a home here.

There are 10 acres of kitchen garden, 2 acres being devoted to Strawberries alone; the other portions are cropped with useful kinds of vegetables for market purposes. Two rows, each 50 yards long, of *Veitch's Autocrat Peas*, in splendid condition, are intended for seed purposes.

Considering the short time since Mr. Crasp has established this nursery, it speaks much for the persevering manner in which the work has been carried out. *R. Milner*.

BEECHHILL NURSERIES, MURRAYFIELD, EDINBURGH.

A visit to a nursery is at all times full of interest to the horticulturist and the lover of plants, and being in Edinburgh recently, I was induced, camera in hand, to wend my way to Beechhill, in full anticipation of finding something specially good or new on which to expose a plate or two; nor was I disappointed.

Notices of Beechhill have so frequently occurred in your columns, that the great majority of your readers are quite familiar with the name of that eminent nurseryman, Mr. John Downie, now deceased. Under the management of his son, the business is making good progress; and from what I saw on my visit, I most heartily endorse the good sayings currently reported, and hereby tender my tribute of praise and commendation.

After the recent refreshing rains, the outdoor department at Beechhill looked fresh, bright, and promising, the neatness and taste displayed in the general arrangement assisting to impress the visitor with the fact that Mr. Goodall well understood how to grow his plants, and to display them to advantage.

I passed through the various brakes of Coniferæ, shrubs, fruit and forest trees, and observed beds and borders of herbaceous plants, which now form a feature of the nursery. The cultivation of *Pansies* gets much attention at Beechhill, and varieties in great numbers, and a rich profusion of bloom was noted; also *Antirrhinum*, *Delphinium*, *Phlox*, *Pæony*, and in every available corner were found tuberous-rooted *Begonias*, of which many thousands are grown.

The glass department justly claims the admiration of the visitor, for the light airy arrangement pervading all of the houses. Everything is neat, bright, and clean.

While most nurseries gain a reputation for one or two specialties, here at Beechhill, Downie seems to be making many kinds of plants specialties, and everything is of the best.

On being conducted over the Orchid department by Mr. Munro, I observed some fine specimens of Orchids, the nucleus of a collection now being formed. Some *Dendrobium Wardianum* were shown which were finishing up pseudobulbs from 3 to 4 feet long. Though here the present flowering season is past, the Orchids, as a whole, are well advanced in growth, and look very healthy.

In the show-house tuberous-rooted *Begonias* were seen in great variety, occupying the whole length of the front stage, and a very fine and effective show they made.

In the stoves were to be seen *Dipladenias*, *Stephanotis*, *Ixoras*, *Pandanus*, *Anthuriums*, *Crotons*, *Caladiums*, &c., and a choice collection of *Gloxinias* and *Thunbergias*. I was next shown the Ferns,

my attention being first directed to a fine lot of *Adiantums*, including *A. scutum*, *A. concinnum*, *A. decorum*, *A. regina*, *A. Victoria*, and *A. Williamsi*; but to me one of the most interesting was a splendid specimen of *Pteris Mayii*. *Pteris* are grown in great variety.

In the houses devoted to greenhouse plants, as in the other houses, every available bit of space is made use of, and here were found tuberous-rooted *Begonias*, *Pelargoniums*, *Statice*, *Carnations*, *Ericas*, *Epacris*, and the usual assortment of New Holland and other hard-wooded plants.

Those who may at any time find themselves in the neighbourhood of Beechhill should certainly pay the place a visit. G. S. Wyness.

STOVE ROCKERY-HOUSE AT CHELSEA.

In conjunction with the Orchid department and several of the other departments in the nurseries of Messrs. Jas. Veitch & Son, King's Road, Chelsea, artistically arranged rockery-houses have been provided in which to display the principal plants of the season among Ferns and foliage plants, and these houses are kept gay throughout the year. At the present time in the rockery-house of the stove-plant section a magnificent show is made up of groups of *Caladiums*, batches of the two fine blue *Exacums*—*E. affine* and *E. macranthum*; fine spikes of the white and fragrant *Pancratium*, variously red-tinted *Ixoras*, showy *Anthuriums*, *Rondeletia speciosa*, the pretty new *Strobilanthes Dyerianus*, neat plants of the greenhouse *Rhododendrons* both single and double, *Tillandsia*, &c., and in one corner an interesting batch of insectivorous plants; among the various species of *Sarracenia* being the rare *Heliophora nutans*, pans of *Cephalotus follicularis*, and *Dionæa Muscipula*, *Drosera capensis*, *dichotoma*, *spatulata*, *angularis*, &c.

Nepenthes at Messrs. Jas. Veitch & Sons.—Those who see but an occasional plant of the always-admired Pitcher Plants have no idea of the beauty of the large houseful of them always to be found at the Royal Exotic Nurseries, nor of the diversity of colour, size, and form in the urn-like appendage of their leaves. For beauty, freeness of growth, and brightness of colour, the palm is unanimously awarded to *Nepenthes Mastersiana* × raised by Messrs. Veitch, between the beautiful but obstinate *N. sanguinea* and *N. distillatoria*. Among the others, *N. mixta* has grand red pitchers, with brownish-crimson blotches; *N. Rajah* is entirely dark crimson, *N. Burkei* has noble dark-coloured pitchers totally unlike any of the others, and the large rosy-tinted green *N. bicalcarata*, with the two sharp teeth at the base of the lid, is equally distinct. Other specially handsome kinds are *N. Chelsoni*, *N. Hookeri*, *N. Veitchii*, *N. sanguinea*, *N. Curtisi* *superba*, *N. Rafflesiana*, and *N. Northiana*, and the general view of the hundreds of pitchers hanging from the plants overhead is very beautiful.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

GREENHOUSE PLANTS.—Give abundance of air to any plants of *Azalea indica* that have completed their growth, and continue to syringe well each night and morning to keep down thrips and red-spider. Give good waterings of weak liquid-manure occasionally. When the plants are placed out-of-doors they are often injured by storms and wind. Careful attention must be given to the watering of specimen *Erica* plants, and see that the drainage is in perfect order; thorough waterings of rain-water should be given when required, and let the ventilators of the house remain open night and day. Attend to the cleaning and training as soon as the plants have done flowering. A house with a north aspect is very suitable at this season for the summer-flowering varieties. *E. hyemalis* and *E. Willmoreana* should now be growing well in pits or frames. The lights should be taken off during fine weather, but care must be taken to protect them against storms. *Epacris*, *Eriostemons*, *Dracophyllums*, *Dillwynias*, *Leschenaultias*, *Pimeleas*, *Tremandras*, *Genetyllias*, *Aphelexis*, *Phenocomas*, all natives of New Holland and the Cape are not so often seen nowadays as they deserve to be. They require much attention during the growing period.

Put them in a good well-ventilated house, and place in a position where they are not shaded with climbers or other plants, and within a short distance from the glass. *Tremandra verticillata* is a beautiful free-growing exhibition or decorative plant, and lasts in flower a long time; it wants well pruning in, or it gets too tall. *Pimeleas* should now have a good airy position, to ripen the wood, and be well trained out as soon as they require it. *Kalosanthes coccinea* and *K. jasminæ* are beautiful sweet-scented flowers of brilliant colours, and are most useful decorative and exhibition plants. The present is a suitable time to take cuttings of shoots that have not flowered; place them singly in small pots in loam, leaf-mould, and sand. They will soon strike in a little heat, when they may be kept in a cool-house during the winter with very little water; they are best kept rather dry during the dark days. Old specimen plants that require potting should have a good portion of broken-brick rubbish mixed with the soil, and the pots must be clean and well drained. Give plenty of air and light to plants that are growing on for flowering next spring. The shoots are heavy, and they require strong light canes to support them; they flower well in 6 or 8-inch pots, and when they have completed their growth in the autumn they may be stood in a cool greenhouse or pit, and should be kept rather dry until the spring.

ROCHEA FALCATA, is a useful scarlet-flowering greenhouse evergreen plant, very useful for vases or rockwork; it flowers during the summer, and it likes rough soil, and to be kept dry in the winter.

CACTUS.—Most of this tribe of plants will have completed their growths, but judicious waterings must still be given, and it should not be withheld until cold weather has commenced. Manure in some form should be given, to keep the foliage a good colour. Scale and red-spider must be kept from them by good syringings of clean water. See that the drainage is efficient; plants growing in small pots are best placed on a shelf or board during the autumn and winter months; they like abundance of air and a temperature of from 50° to 60° in winter.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

ODONTOGLOSSUM VEXILLARIUM.—Any requiring potting or top-dressing should be seen to during the present month. I do not believe in potting *Odontoglossums* every year, but only as often as they require it. Under some circumstances it may happen that a plant may require repotting within a month, but this would be owing to the soil having become sour. When this is the case, it is well to wash the roots of the plant, and start afresh with it. The important point in growing these *Odontoglossums* well is cleanliness, for if the plants become at all infested with thrips or any other insect, they very soon begin to look sickly, and the only way to keep them clean is by continual watchfulness. The mode of cultivation which we have practised for a number of years with success is as follows:—The compost for potting is prepared well beforehand, the sphagnum moss having been picked over, and all the leaves and weeds, &c., taken out; it is then placed in a tub of water, and allowed to remain twenty-four hours. In newly-gathered moss there are always a large number of snails and snails' eggs, and by this soaking in the water, and by the sousing it gets in washing, a large percentage of these are destroyed. Another point in favour of this practice is, that the moss freshens up, and grows much better. It is rinsed through clean water, and we then chop the moss up to suit the purpose for which we require it; we then mix equal parts of sphagnum and good fibrous peat, with a fair sprinkling of finely-broken crocks. Sufficient plants for a day's work, according to the hands at the potting-bench, are then fetched, and a tub of warm soft water is got ready; half a pint of Fir-tree oil which has been dissolved in boiling soft-water is added, and we then take the plants and hold them in the solution with one hand and wash every leaf through the thumb and fingers. If there are any thrips in the new growths, they are killed during the washing, and the plants are then rinsed through clean water. Any requiring potting are turned out, and every particle of compost washed from the roots, after which they are laid to dry; those only requiring top-dressing are laid on their sides to dry before the new compost is added. The stages are washed down with soft-soap and water, so that everything about them is made clean, and so treated, our plants require but one dipping in

twelve months. Frequent dippings as some growers recommend kill a great many more plants than the insects, but constant damping and syringing will do some good. We use a little fire-heat as possible, just keeping the pipes warm. Of course, in the winter time a little more will be required. The temperature of this house for the next few months should reach from 60° to 65° at night; but the day temperature, according to weather, during the winter months, should be as near 55° to 60° as possible, with a rise of a few degrees during day. Give all air possible on favourable occasions, and always keep the bottom ventilators open a little at night. Nothing will take any harm if the temperature falls to 50° in early morning. This house will be found to suit *Odontoglossum Phalænopsis* for the next two months, when it may be removed into the cool end of stove when the temperature runs about 60°. *Odontoglossum cirrosum*, *O. nævium majus*, *O. blandum*, and *O. maxillare*, all require similar conditions.

THE COOL ODONTOGLOSSUM-HOUSE.—*Odontoglossum crispum*, *O. Andersonianum*, *O. Ruckeri*, *O. gloriosum*, *O. Halli*, *O. hystrix*, *O. nebulosum*, *O. polyanthum*, *O. tripudians*, *O. triumphans*, or any others growing in this house should be taken in hand at once. This is the best time for potting, and if they are not finished by the middle of September, the remainder are best left over until February. By potting during August and September, the plants commence new root-action before the short dull days set in, and if any be left until February the days are beginning to lengthen, and the plants very soon start again into new growth. The same treatment in regard to the operation of potting, recommended for *O. vexillarium*, is again necessary when doing this section. I make a practice of potting as many only as require it each year, and the others where the potting-material is sweet, and the sphagnum fresh, receive a little new peat, and the moss again put on, which soon grows and becomes green. When potting the *Odontoglossums*, never use pots of too large a size, but rather err on the other side. Use clean pots and clean crocks. Half fill the pots with the latter, and after potting do not overwater them, but give sufficient only to keep the sphagnum green until root action has well commenced. The syringe may be used daily amongst the pots and overhead. For the first few weeks after potting keep the plants fairly shaded, and rather closer than usual. After the tropical weather we have had, our plants of *Odontoglossum crispum* look better than they have ever done. Some of the plants grown in a lean-to house, under a north wall, do not look nearly so well as those grown in small span-roofed houses. It is a mistake to build *Odontoglossum*-houses under a north wall.

THE FLOWER GARDEN.

By T. H. CRASP.

VIOLETS.—The late drought has been very prejudicial to the growth of these, and unless red-spider is checked, and the growth encouraged as much as possible, the crowns will be very weak for flowering this season. The surface of the soil should be stirred, and good manurial waterings given, and this supplemented with a mulching of well-decayed manure.

VERBENAS.—These once-fashionable bedding plants seem to be regaining favour, and where such is the case no time should now be lost in taking off the cuttings for next year's display, and they will root much easier now than late in the autumn. If struck early, far better established plants are obtained to stand the winter, and they are not so subject to attacks of mildew. The usual preparation of the cuttings should be made, selecting the non-flowering growths which issue from the base of the stem. It is advisable to propagate from cuttings annually; a more even growth is obtained, and a greater profusion of bloom than from plants raised from seed. Since the showery weather, all spring-bedding plants that were divided and transplanted a few weeks ago, will be growing freely. The surface of the soil should be frequently moved between the plants; it will kill all seedling weeds, and further assist the growth of the plant. An occasional watering of liquid manure would also prove very beneficial. *Silene pendula* and its varieties should be sown in an open border, but in the case of other spring-flowering annuals, about the middle of the month will be quite soon enough. This applies to such things as *Alyssum maritimum*, *Collinsias*, *Saponaria calabrica*, *Limnanthes Douglasi*, *Virginian Stock*, *Lasthenia californica*, *Nemophila insignis*, &c. *Onosma tauricum*, and a beautiful and comparatively new variety, *albo-roseum*, are choice gems

among alpine plants, and are the two most beautiful of the Borageworts; they flower in May and June, and delight in a moist, loamy soil, with perfect drainage. The present is a good time for its propagation, although it may be safely propagated at any other season of the year when cuttings are obtainable. At this period, however, cuttings of the right stamp are more plentiful than they are at any other. They should be taken off with a heel when 3 or 4 inches in length, and inserted in pots containing very sandy soil, afterwards placing them in a cool, shady frame or hand-light, which may be kept close for a time. The cuttings will be rooted in about three or four weeks, when the lights should be raised, and ultimately removed altogether. Its beautiful drooping golden flowers, in long cymes, render it a favourite whenever seen in good condition. The chief work with bedding plants now is picking off decaying flowers and cutting in growths within bounds. The continued use of the shears, scythe, and hoe is also necessary to good keeping. A highly-kept flower garden should have no signs of work about it, but it is few places that can be kept so. It is always the best policy, however, to keep a portion of the ground thoroughly, than a large area only half-done. If plants have been placed in beds thickly to fill up at once, they should be thinned out; and where there are choice varieties of bedding plants, a few cuttings may now be put in to ensure a good stock for next year.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

PEARS.—Finish gathering Bon Chrétien, Beurré de l'Assomption, Souvenir du Congrès, and Clapp's Favourite, all of which, if left on the trees too long, and especially if growing on walls, eat mealy and without their proper flavour. Make small gatherings of Beurré d'Amanlis, Jersey Gratioli, Brockworth Park, Fondante d'Automne, and any other sorts of same season, gathering in each case the finest fruits, and the crop, having been thus lightened, the remaining fruit will continue to grow, which, if gathered at intervals of about a week, will keep up the supply for a considerable season. As the time is now approaching when birds, the tits in particular, begin to peck the fruit, all trees growing on walls should have netting put over them as early as possible, and also bush and pyramid trees where it is practicable. In some gardens, unless protected, the greater portion of the crop will be rendered worthless by being thus pecked, and as prevention is better than cure, it is policy to protect, ere the birds commence their work of destruction. Previous to netting the wall trees, give them a few good washings with the syringe or garden engine to militate against red-spider. Most wall trees which have come under my notice this season are more or less infested with this pest.

APPLES.—The forcing character of the weather, at least in the southern part of the country, is causing many of the earlier sorts to exhibit signs of ripening. These include such sorts as Lord Suffield, Frogmore Prolific, Ecklinville Seedling, Stirling Castle, Keswick, Manks', and Dutch Codlins, &c. These should be gone over somewhat frequently, and any fruits which do not part from the tree when raised to a horizontal position, should be left, for, as in the case of Pears, when the crop is lightened, what are left may continue to grow; and the longer the fruit will remain on the trees the greater will be its keeping qualities.

PEACHES AND NECTARINES.—Very careful watching must be exercised that the trees do not want for water, which should be given very liberally until the fruit shows signs of ripening. The dropping of fruits before they are quite ripe often arises from this want. With shorter days and heavier dews at night, unless the trees are badly infested with red-spider, syringing should no longer be necessary, and if it is continued too long there is risk of the water lodging about the fruits, which will cause them to rot.

PACKING PEACHES.—I can never understand why so many should have the impression that Peaches are difficult to pack to ensure their travelling safely. The points to be observed in packing Peaches, are, that they be gathered before they become quite ripe, have proper material to pack them with, and boxes of a suitable size. Lawn mowings, where the same are free from leaves and other rubbish, and have been properly dried by being frequently turned in the sun, before being stored away in hampers, form the best material, and one available by every gardener. The mowings used here

are got from the cricket-grounds, which being in the open park, and also free from weeds, &c., the mowings are much cleaner than it is possible to obtain from the lawn, where trees and shrubs abound. As regards boxes, the following should be the inside measurement. For twelve fruits, medium size, length 14 inches; width, 10 inches; depth, 3½ inches; allowing 3 inches in length or width for every row of fruit over that number. Wrap each fruit in tissue-paper, packing between the fruit with the dried grass as the work proceeds, and filling up the box with the same substance.

THE APIARY.

By EXPERT.

ROBBING.—This evil should be guarded against in every possible way, for if it is once commenced it is very difficult to eradicate. Bees are now very easily excited, and hives should not be opened unless it is positively necessary, and then only in the evening. No comb, honey, or sweets of any kind should be left about, either in or out-of-doors, as it is astonishing how quickly the bees will find it, and become a terrible nuisance in their pertinacity to acquire it. Should robbing by any inadvertence have commenced, the best thing to check it is a free use of the carbolic solution (1½ oz. Calvert's No. 5 to 1 quart warm water). If this is sprinkled with a feather on the alighting boards, it soon has a salutary effect; but in bad cases it may be found necessary to hang cloths saturated with it over the front of the hives. Entrances should now in all cases be contracted to 1 inch or less.

STIMULATING.—With the object of keeping bees on breeding, and obtaining plenty of late-hatched workers to commence next season's labours, slow feeding may now be resorted to, and nothing is better for the purpose than dry sugar. This should be given in a hollow dummy-feeder hung at the side of the frame. These feeders can be easily made with bar frames by providing a piece of one-quarter board for each side. One side is nailed on to the frame, the other being removable for the convenience of putting in the sugar, and kept in place with little right-angled wire staples at top and bottom. A quarter-inch opening must be left at the top of the movable side for the bees to get in and out. Porto Rica is the best sugar to use, as it is free from beet, and is also moist, and fine in grain. This feeding is also to be recommended by the fact of its keeping the bees employed at a season when they would otherwise have nothing to do but to embark on pilfering expeditions.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

PEACHES.—Peach trees which fruited early in the season are ripening their wood very early, and the leaves should be kept hanging as long as possible. An examination of the soil must be made, and where there are signs of dryness in the border a thorough soaking of water should be given. Keep the foliage well syringed, to prevent red-spider. If black-aphis is troublesome, syringe with an insecticide several evenings in succession, and fumigate also if necessary. If the wood is not ripening well in early houses, this indicates defective root action, and the absence of fibrous roots will keep up the circulation of sap when the trees should be at rest, resulting afterwards in bad setting of fruit in January or February. In such cases all succulent growth should be removed from the bearing wood. Gross shoots, which are to take the place of the current season's bearing wood, should be stopped and kept pinched as soon as a few leaves are formed; and before the end of the present month a portion of the roots at one side of the tree, and any that are descending far below the surface, should be lifted and shortened, placing a firm layer of brick and lime-rubbish under the tree to prevent further trouble from tap-roots. The side-shoots should be laid-out evenly on firmly-beaten loam, mixed with a fourth-part of lime-rubbish, to which may be added about a quart of soot in each barrow-load of soil. This covered with good loam, and afterwards watered, will induce fresh fibres to grow, and the tree thus treated will be in good bearing order when the coming season arrives. A Stanwick Nectarine we treated thus some weeks ago is doing as well as could be desired. Keep foliage clear of ripening fruit, and air freely night and day. Latest crops may require abundance of water, and some good liquid manure if the crops are heavy, and the trees are showing signs of distress.

FIGS.—Some gardeners enquire why their Figs drop the first crop of fruits? Where such is the case

we would direct attention to the roots, as in most cases the mishap occurs where the border is shallow, or the active roots are not getting the proper amount of water when they require it most. Too copious supplies of liquid-manure, cold undrained borders, position of the roots in dry subsoil, are sure to cause fruit dropping. Figs will stand a deal of dryness when they are resting, but the reverse is the case when the fruits are swelling; trees which supplied fruit in April and onwards, may be allowed to rest as soon as the second crop of fruits is gathered; those which are to ripen fruit as late as November, must be liberally dealt with if the roots are in healthy condition.

ORCHARD HOUSES.—The orchard-houses will be losing much of their furnished appearance by the removal of early-fruited trees (in pots) to resting quarters; but the same attention to watering, airing, and to the destruction of insect life must be in force as heretofore. When Plums, Peaches, and other stone fruits show signs of ripening, they must be kept dry overhead, and growing shoots should be pinched back, in order to facilitate a free circulation of air, and allow the full action of the sun upon the fruits. If wasps are destructive, it may be well to remove ripening fruits, and lay them in a dry airy room to finish. Pears may be gathered in small quantities, and placed in heat to ripen early, or in a cool shady room to prolong the season. Let no liquid manure be supplied when the fruits are fully swelled.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Burted Park, Uckfield.

CABBAGES.—Owing to the hot and dry weather of the last week, plants have made but little progress, and seeds recently sown have not yet germinated. They must be well supplied with water, or the plants will not be strong enough at planting time. Watering is becoming a serious question in some places, for springs are very low, and every drop of water consequently must be brought some distance before being used. It will, however, pay the cultivator to look well after these small seedlings, for the time will soon be round when they must be ready for their permanent quarters. Colewort may still be planted, but showery weather should be chosen for the work, if possible.

AUTUMN ONIONS.—These, like Cabbage, demand special attention, that the little seedlings do not get dried up for want of moisture. If growth be checked when the plants are young, it is rare that fine bulbs are obtained from them. Some of the early kinds commence to bulb while small, and if growth is not encouraged, they form picklers in dry seasons instead of strong plants for transplanting.

LETTUCES.—Seed of the brown Cos that was sown according to previous instructions will be large enough for transplanting. Seize the first opportunity, should there be showery or dull weather, to get the plants into their permanent positions. We find an exposed place in the open the most suitable, for there they grow sturdily if afforded sufficient room. Plant in rows 15 inches apart, and 1 foot between the plants. Make another sowing of hardy kinds to succeed those now ready for transplanting.

CAULIFLOWERS.—The last sowing should now be made in most districts, unless it be in the extreme south. Cover the ground, to prevent evaporation when the seed is sown, for nothing tends to weaken the plants so much as a lack of moisture at the period of germination. Dust the ground over with lime, for the larvæ of the Cabbage-weevil are troublesome in dry weather, and soon spoil a batch of healthy plants.

CELERY.—It cannot be too deeply impressed on the cultivator how necessary it is to pay particular attention to Celery at the present season. Growth should be made as quickly as possible if the Celery is to be crisp and sweet. Abundance of moisture must be given to the roots, for little progress will be made where watering is neglected. That intended for early use should now be earthed up, but blanching should be deferred as long as possible, as growth is checked by the process.

PEAS.—The hot dry weather in the South is causing much trouble to the grower, the ground having become so parched. Water must be given regularly at the roots. If mildew makes its appearance, dust the foliage with sulphur early in the morning while damp. In districts where there is more moisture in the soil, a freer growth is made, and it will not be necessary to give the plants such strict attention.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

SATURDAY, AUG. 19 { Great Co-operative and Industrial Exhibition at the Crystal Palace.

WEDNESDAY, AUG. 23 { Shrewsbury Horticultural Fête.
Show of Gladioli, &c., at the Gardening and Forestry Exhibition, Earl's Court.

THURSDAY, AUG. 24 { Basingstoke Horticultural.
Weymouth Horticultural (two days).

SALES.

MONDAY, AUG. 21 { First Special Trade Sale of Dutch Bulbs, also 56,630 Liliun Harrisii, in grand condition, at Protheroe & Morris' Rooms.

THURSDAY, AUG. 24 { Special Trade Sale of Dutch Bulbs at Protheroe & Morris' Rooms.

FRIDAY, AUG. 25 { Orchids at Protheroe & Morris Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—61°·3.

*. * The temperature at Ealing, Middlesex, on August 16, was 92° (F.) in the shade.

Mushroom Culture.

EVERY gardener is familiar with the process of growing Mushrooms from spawn, but general as the practice is, no sanitarian—especially in these days of bacteria—could for a moment sanction it as free from risk. Fortunately, the Mushrooms are cooked before being eaten, or doubtless we should hear of more serious consequences resulting from their employment. In botanical laboratories it is an object to isolate and cultivate particular fungi from the spores. By this means the whole life-history of the fungus can be watched, and any one fungus kept free from its neighbours. Messrs. COSTANTIN and MATRUCHOT have lately laid before the French Academy of Sciences of Paris a note relating to their method of growing Mushrooms from the spore. Fancy a paper on Mushroom-growing presented to our Royal Society!

The French experimentalists do not give the details of their procedure, but they tell us the principles on which it is founded. Pure spores are obtained, how is not stated, and these are sown in a manner which secures the absence of any spores of other fungi. The spores are cultivated on some nutrient medium previously sterilised to insure the absence of any foreign spore. In this way a pure spawn is produced which can be indefinitely increased, and which can be grown-on on sterilised dung or in ordinary Mushroom-beds.

Mushroom spawn, as we know, is subject to various diseases and deformities, which may be avoided by the culture of pure healthy spawn. Again, some varieties are preferred to others, but in the present nasty system of cultivation there is no certainty what form may arise, and no means of eliminating it. By the new system any particular form can be cultivated free from admixture with others. The production of spawn can ordinarily only be depended

on at the end of autumn and in winter, but by the new process spawn can be had at any time.

It is very satisfactory to find the processes of the laboratory thus turned to practical account. As we have said, Messrs. COSTANTIN and MATRUCHOT do not precisely indicate the details of their procedures, but anyone familiar with the means which botanists and students of bacteria employ, will have no difficulty in understanding the principle on which it is based, or in devising similar methods for themselves.

It remains to be seen whether the new process can be carried out with success commercially. If it can—and the probabilities, we should say, are, that the cost of production would eventually be less than by the old method—then we may hope, but certainly not expect, that the new process, with its cleanliness, certainty, and security from disease-germs, will oust the nasty methods at present in use. It seems likely that some of the gardeners of the future will receive a laboratory training, and when this is the case, we may hope for a further development of fungus-culture to practical ends. In the meantime, it is something to have got even to the experimental stage.

CRIMSON RAMBLER ROSE.—We are pleased to be able to lay before our readers an illustration, from a photograph, of this very attractive Rose (fig. 39). It was shown at the great Horticultural Exhibition at Paris this year, as well as at the Temple Show, and other meetings of the Royal Horticultural Society, at all of which its merits were suitably recognised. Many have had the opportunity of seeing it, and they will not question our opinion that it is the most beautiful hardy Rose of its kind introduced for many years. It is of Japanese extraction, and is a form of *R. polyantha* or *multiflora*. As a pillar Rose, as shown in our illustration, its glowing clusters of crimson flowers are seen to great advantage; but pegged down for bedding purposes it is equally attractive. We have before us photographs of a border of these Roses, with the trees growing as pillar Roses at the back, and in the foreground a broad belt of the same Roses pegged down. The effect must have been magnificent. We congratulate Mr. CHARLES TURNER, of Slough, on the introduction of this charming novelty, which adds another to the many triumphs scored by the firm.

THE ROYAL SCOTTISH ARBORICULTURAL SOCIETY.—The members of the above Society, during the past week, visited Windsor, the New Forest, Burnham Beeches, and Kew, and were present at the Earl's Court Exhibition on Saturday, when they were entertained at luncheon. Mr. H. E. MILNER, the Chairman of the Exhibition, presided, and proposed "Prosperity to the Royal Scottish Arboricultural Society." In reply, Mr. DUNN, a member of the Council of the Society, said that the members in their visit to England had been able to store their minds with knowledge which they could not have acquired at home. He urged that those in authority should give more encouragement to forestry. In concluding, he proposed the toast of "The Gardening and Forestry Exhibition," to which Mr. MILNER responded. The toast of "The Chairman," proposed by Mr. CHARLES BUCHANAN, of Penicuik, closed the proceedings. The members then examined the forestry exhibits under the guidance of Professor CURTIS. A detailed account of the proceedings of the Society will be found in another column, and will be continued in our next.

ROYAL BOTANICAL SOCIETY OF LONDON.—The fifty-fourth anniversary meeting was held at the Gardens, Regent's Park. The Duke of TECK was re-elected President, and Mr. H. LINDSAY ANTHOBS Treasurer for the ensuing year. From the annual report it appeared that the number of new Fellows elected was nearly the same as last year. The various exhibitions and fêtes had been success-

fully carried out, the exhibits, both in number and quality, being above the average; that of the evening fête especially had been the largest since it was instituted twenty-two years ago. The scientific work of the Society had rather increased than otherwise; nearly 700 students of science, art, and medicine had received free orders of admission of from one to three months during the year; and the facilities offered to schools, classes, and scientific societies generally had been largely taken advantage of. Among new clients in this branch were many of the students studying botany in the London Board Schools. The special plants successfully cultivated for the first time included specimens of the Mangrove (*Rhizophora*), and an ant-habitation plant, from Torres Straits. Within the tuberous root of this plant numbers of the common red garden ant had made a home, to the apparent benefit of both. The meeting closed with a unanimous vote of thanks to the chairman. *Morning Advertiser*.

THE LATE MR. THOS. LAXTON.—We have received several letters showing the general esteem in which the late Mr. THOS. LAXTON was held by horticulturists with whom he had dealings. In our notice last week we inadvertently included the variety *Jno. Ruskin* amongst the Strawberries Mr. LAXTON had raised, but this was sent out by Messrs. LITTLE & BALLANTYNE, of Carlisle.

EALING GARDENERS' ASSOCIATION.—The members of this Association journeyed on Tuesday last to Park Place, Henley, the delightfully-situated residence of Mrs. NOBLE. The visit was much appreciated, as the gardens and grounds attached to this fine place were in first-class condition.

AUGUST HORTICULTURAL MEETING AT GHENT.

—Certificates of Merit were awarded to M. L. DESMET DUVIVIER, for *Carludovica palmæfolia*, a very ornamental plant; for *Poinsettia pulcherrima variegata*, a pretty novelty with ornamental foliage, green, bordered broadly and irregularly with yellow; both from the above-named exhibitor. To *Anguloa eburnea*, an excellent and rare variety; *Lælia elegans Turneri*; *Cattleya Eldorado* var. *Wallisi* and *Phajus Humbloti* (the two latter magnificent Orchids), all from M. Van Imshoot. To Mme. Henri de Wadrin de Rouselle for *Vanda cœrulea* var., a large and fine flower of brilliant azure blue. To M. Sczewicz for *Begonia fulgens*, a species much to be recommended for the open ground. It lasts well till late in the year; the flowers exhale an agreeable perfume in the mornings. To M. F. Desbois for *Adiantum cuneatum*, a charming novelty, sure to find favour in the future. To the same exhibitor for *Philecia buxifolia*, an old plant which should be widely cultivated. To M. J. Hye for *Cypripedium Youngi*, a capital novelty already described in the *Gardeners' Chronicle*. To the same exhibitor (*à l'unanimité*) for *Odontoglossum Schroderae*, a novelty of much value. To M. J. Moens of Lede for *Cypripedium Haynaldianum* Mille. Clotilde, a remarkable hybrid raised by the exhibitor from *C. Leeanum superbum* × *C. Haynaldianum*; the flowers are very large, wide open, resembling both parents equally; dorsal sepal clear green, dotted transversely with ashy-brown at the base, clear rosy-yellow, also spotted and shaded with lilac-rose below the centre, the upper two-thirds being pure white, the midrib violet-rose. Inferior sepal pure white in the centre and base, and bordered with cream colour. Petals very open, curved, olive-yellow in the basal half, and dotted all over with brown, the upper half clear violet-red. Staminate horseshoe shaped, dull white, marked in the bend with two violet-magenta coloured teeth, and with pretty amethyst-green (!) hieroglyphics in the centre. Lip large, nearly square, in colour clear green, shaded with chestnut-brown. Scape dark shining brown. Bract green, dotted all over with black; flowers three to five. Certificates for cultivation and blooming were awarded to MM. EDM. VERVAET ET CIE, for *Dendrobium thysiflorum*, with five excellent clusters; to the same firm for *Saccolabium guttatum*, with a very long raceme, an exceedingly pretty variety; and to

M. JULES HYE for *Odontoglossum Harryanum*, with excellent flowers, dark in colour; and for a well-flowered specimen of *O. tentaculatum*. *Ch. de B.*

TORQUAY DISTRICT GARDENERS' ASSOCIATION.—The first annual outing of the above Society

THE CONTINENTAL SEED CROPS.—As far as the seed-growing districts of Holland are concerned, the Cauliflower crop promises to be a very good one. Cabbage, Savoy, Brussels Sprouts, and Borecoles not so promising; though they looked remarkably well at the close of the winter. They subsequently

a good crop. Onion very good. Carrot only a small one.

TUNBRIDGE WELLS GARDENERS' ASSOCIATION.—A very successful meeting was held at the Society's Institute on Tuesday, the 8th inst., the exhibits being both numerous and interesting. It was announced that at the next meeting, to be held on the 22nd inst., a paper would be read by Dr POLLEN, of Tonbridge, on the "Flora of India." On the following day a large party of members, together with friends from the Tonbridge Society, made an excursion to Swanley, and inspected the establishment of Messrs. H. CANNELL & SONS, and Messrs. LADDS & SONS, after which the company paid a visit to Lullington Park, the seat of Sir WILLIAM HART DYKE, Bart.

THE BRITISH PTERIDOLOGICAL SOCIETY.—

On Monday, August 7, the usual annual meeting was held at the Phoenix Rooms, Lancaster, and was very well attended by the leading Fern connoisseurs and Fern-finders of the Lake and other congenial districts, mainly, however, of the vicinity; since, singularly enough, though the south-western counties of England must be accounted not only richer in species than the northern, but also even more fertile in those curious and beautiful varieties which excite so much attention, there are few enthusiasts; while taking Kendal as a centre, ardent Fern-hunters and growers, and splendid collections are liberally dotted about the country—while, too, throughout the south a choice British Fern in a cottage window is a rarity. In the northern districts in question it is impossible to go far without seeing beautiful and rare specimens. It is due to this fact that the only Society existing in this special direction has originated in the north, and though many of the prominent Fern-lovers of other and distant localities figure among its members, its meetings are perforce held in the midst of the majority. Dr. F. W. STANSFIELD having, during the ordinary business, been re-elected President, received a very cordial reception, it being felt by all present that a man representing the third generation of a renowned Fern-loving family, was peculiarly fitted for the post. The formal business over, which included the re-election *en masse* of all the officials, Dr. STANSFIELD gave a very interesting address. In the first place he laid special stress upon the value of such natural hobbies as sovereign specifics for mental worry. The President then proceeded to review some of the discoveries for which science was indebted to amateurs in connection with our British Ferns, pointing out that phenomena of peculiar biological interest had been remarked and recorded in the direction of their reproduction which had awakened world-wide interest, and which, if abnormal forms had continued to be treated as simple monstrosities unworthy of attention, would never have been observed; and exhorted those present not merely to observe carefully anything which struck them as new and strange, but also to record it, and get their record confirmed and chronicled in proper channels. A paper was then read by Mr. EADON, of Sheffield, on hybridisation, which he contended was not proved, but the subsequent discussion showed him to be in the minority in such belief, since one almost universally accepted case was quoted, together with several instances of cross-fertilisation between varieties which showed in the resulting offspring the joint-parental characters far too clearly to permit of any reasonable doubt. Mr. STEWARDSON of Lancaster followed with a most amusing account of Fern-hunting adventures, and how he caught the Fern fever. One of the chief objects of the society, besides that of bringing widely-scattered Fern-lovers together from time to time, is that of obviating the confusion in nomenclature, which often results from unauthorised names being given to varieties of Ferns, widely different types often appearing with identical names, or *vice versa*. As a result of members being invited to bring plants or fronds to this centre (decidedly the fittest to deal with such a matter), a number of very fine forms were exhibited, discussed, and named. Amongst these was a recently-dis-



FIG. 39.—MR. C. TURNER'S NEW POLYANTHA ROSE, CRIMSON RAMBLER: HEIGHT 6 FEET. (SEE P. 214)

took the form of an excursion to Taunton, on the occasion of the show held there on Thursday the 10th inst. About eighty members journeyed from Torquay by special train. Besides visiting the show, several also inspected the Castle, and some journeyed as far as Claremont, where Mr. W. H. FOWLER'S *Chrysanthemums* interested and delighted the visitors.

suffered very much from the continual drought, and many of the plants perished. The remainder stood well and matured their seeds. Swede Turnips are a very poor crop. White Turnips and garden varieties only a middling one. Mangels and Beets of all kinds a medium crop, the plants having been affected in some parts more than in others. Spinach, Peas, and Radishes are mostly

covered *Athyrium filix-fœmina*, for which the name of *Clarissima* (Bolton) was suggested, its likeness to that beautiful and hitherto unique form known as *Clarissima* (Jones) being accentuated by its obviously bearing the same "aposporous" soral excrescences in lieu of spores proper. The name was, however, left in abeyance pending the testing of these curious growths. Mr. C. T. Druery following the presidential address, referred especially to this new acquisition as illustrating the wisdom of Dr. STANSFIELD's remarks, the first-found type of this class being held for twenty years as a perfectly barren plant, though when once the curious growths were understood, an inch or two off one of the pinnae yielded a host of youngsters. Messrs. JNO. WILSON, STEWARDSON, EADON, WHITWELL, and others participated in the animated discussion which followed the papers, and Mr. WHITWELL as the indefatigable secretary received a unanimous vote of thanks, in which the Treasurer, Mr. WIFE, was included, as it transpired that the expenditure, low as the subscription is, was well within the income, a very appreciable balance being carried over. Finally it was resolved that the annual meeting of 1894 should be held on the first Monday in August, at Bowness, near Windermere, when, weather permitting, it will be combined with an excursion to some of the ferny haunts in the vicinity. Fern lovers of all parts are cordially invited to communicate with the Secretary, Mr. WHITWELL, Serpentine Cottage, Kendal, or with the writer, with a view to becoming members. *Chas. T. Druery, Fernholme, Forest Gate.*

HYBRID ANTHURIUM.—Mr. WRIGLEY obligingly sends us a photograph of a hybrid plant raised by him, together with the following letter:—"I forward a photograph of a hybrid that has lately flowered here; it is a cross between *Anthurium Scherzerianum* var. *Wardei* and *Richardia æthiopica*, the former being the seed-parent. There is not the slightest doubt about my plant being a hybrid, for I possess only a single plant of *Anthurium*, and this is the plant that I fertilised with the pollen of the *Richardia*. The double spathes are both white, spotted with scarlet, and the spadix is a brilliant orange. The larger spathe measured about 1½ inch, and the smaller one three-quarters of an inch. As far as I can make out, I have five hybrids with white and scarlet flowers, all of which produce green young leaves and roots, while the bulk of the other seedlings have produced scarlet spathes, and their young leaves and roots have a red colour when they appear at first. *O. O. Wrigley, Bridge Hall, Bury.*" [The photograph shows that the foliage is that of *Anthurium*; the inflorescence has two spathes. To be quite freed from doubt we ought to have the assurance that the *Anthurium* was not fertilised with its own pollen prior to the imposition of that of the *Richardia*. Ed.]

GRAND YORKSHIRE GALA.—A general meeting of the guarantors and life members was held last Friday evening, Alderman Sir JOSEPH TERRY in the chair. The recommendation of the Council that the sum of £251 be handed over to the York charities was approved. The sum of £175 was added to the reserve fund, bringing it up to £2000, and the remaining balance carried forward to next year's account. Mr. Alderman MILWARD congratulated the committee on the sum which had been devoted this year to charitable purposes, pointing out that the reserve fund of £2000 being now completed, the profits of future years would be handed over direct to charity. The chairman moved a vote of thanks to the Lord Mayor for accepting the office of President of the Council, and for his donation of special prizes, the resolution being cordially carried. Votes of thanks were also given to Sir JOSEPH TERRY, Chairman of the Council, the Vice-Chairman, and the officers of the Society, including Mr. Jos. WILKINSON, Hon. Treasurer, and Mr. C. W. SIMMONS, Secretary. The dates of the gala were fixed for next year as June 13, 14, and 15.

STOCK-TAKING: JULY.—The month just ended will long be remembered for two remarkable events—the French "intervention" in the affairs of Siam, and the war of tariffs between Germany and Russia. As to Siam, owing to the firm attitude assumed by our Foreign Secretary, assisted by our ambassador in Paris, all chance of an entanglement of this country in this latest "Eastern question" has departed, and British commerce in that part of the world is unaffected. Very nearly all the export and import trade of Siam is carried on in British ships; 0.03 per cent. represents the French interest in the cargo value of the foreign trade. As to the tariff war in Europe, for the sake of both empires it is to be hoped that better feeling may soon be established, and common-sense prevail. Meanwhile, our commercial relations with the two peoples cannot suffer—they may improve. But with all this, and other matters presently to be noted, the imports for the month of July show a comparatively trifling falling-off in value—£205,312—spread over some half-a-dozen departments. The figures in the following excerpts from the "Summary" table are those deemed of most interest to the readers of this journal:—

IMPORTS.	1892.	1893.	Difference.
	£.	£.	£.
Total value for month	£33,497,585	£33,292,273	—205,312
§II.—(A.) Articles of food and drink—duty free ...	13,182,895	13,499,803	+316,908
(B.)—do., dutiable	2,033,056	2,039,211	+6,155
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	3,694,482	3,385,030	—509,452
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,311,399	4,282,287	—29,112
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	851,901	1,115,996	+264,095
(B.)—Parcel Post ...	49,725	38,506	—11,220

In the general figures relating to fruits and vegetables, there are some possessing extra interest for the producer in this country; they are as follows:—

IMPORTS.	1892.	1893.	Difference.
Fruits, raw:—			
Apples ... bush.	83,914	114,579	+30,665
Cherries	60,948	52,928	—8,020
Plums	70,721	337,755	+267,034
Pears	58,559	221,884	+163,325
Grapes	7,406	34,054	+26,648
Unenumerated ...	205,873	245,797	+39,924
Onions	301,026	297,253	—3,773
Potatoes ... cwt.	769,406	253,309	—516,097
Vegetables, unenumerated, raw, ... value	£149,116	£146,549	—£2,567

Of course, the lesson taught in these few lines has been under process of learning for at least half the month, and will be certain to bear fruit.

THE EXPORTS

for the past month foot up the respectable total of £19,651,347, or an increase of £187,777 as compared with the same period last year. This, it must be remembered, has been achieved in the face of bad news from some colonies, from the United States, and from South America—coupled with the growing knowledge that once more the coal trade was to be utterly disorganised. The effect of the last obstacle to prosperity may possibly be more felt in the current month. No manufactures can fail to be affected. Considering that this is the year of grace 1893, we cannot but think the "strike" method of settling differences seems far removed from the pitch of civilization at which we are supposed to have arrived. By the way, we are doing better business with Canada, which has seen its way to profiting con-

siderably by the mistakes of the McKinlay Tariff—vide the last issued financial statement. It may not be out of place to draw attention to the strides being made in Persia by the Russian trader. He is everywhere nearly in that country, working his way south, chiefly by consulting the tastes of the country folks, selling them what they ask for, not trying to force upon them what to the trader may seem best; our manufacturers and shippers may take warning by this and sell the Persian just what he thinks is the best for his money, and accommodating his system of weights and measures to that used in that country.

MISSOURI BOTANICAL GARDEN.—We have before us the fourth annual report of this Institution, founded, it may be remembered, by an Englishman, HENRY SHAW, naturalised in America. SHAW realised a fortune in business, and left a large sum for the maintenance of a garden and Botanic Institute, where all branches of botany and horticulture may be prosecuted. Americans claim him, and are proud of him; but, however this may be, SHAW showed that his English habits had not forsaken him, for among other provisions in his will, he arranged for the annual delivery of a flower-sermon, and the annual consumption of a banquet by botanists and gardeners. In the volume before us is given the report of the fourth sermon, and of the fourth banquet, as well as an interesting account of the course of study followed by the garden pupils. Two scientific papers are appended to these business-publications, one on the "Flora of the Bahamas, Jamaica, and Grand Cayman," by A. S. HITCHCOCK; and one entitled, "Further Studies on *Yuccas* and their Pollination," by Dr. TRELEASE, the Director. Three hundred and eighty species are enumerated as natives of the Bahamas, of which only thirteen are peculiar to the island, the greater part being found also in Cuba and Central America. The *Yuccas* are divided into three sets, according as the fruit is fleshy, dry, [and indehiscent, or dry and dehiscent. The flowers are in all cases fertilised by Tineid moths, species of *Pronuba*. All the Eastern species are pollinated by *P. yuccasella*; the Californian *Y. brevifolia* is pollinated by *P. synthetica*, and *Y. Whipplei* by *P. maculata*. Professor TRELEASE's paper is illustrated by photographic representations of *Y. guatemalensis*, Schottii, australis, brevifolia, elata, filamentosa, Whipplei (*Hespero-yucca*), aloifolia, *Treculeana*, and *baccata*.

CATALPA SPECIOSA.—Mr. JOHN BOOTH, of Berlin, calls our attention to the circumstance that this tree has flowered for the last five or six years in the grounds of a friend in the neighbourhood of Berlin, thus anticipating the flowering at Baden-Baden previously chronicled. In the *Revue Horticole* it is stated that this species has flowered recently and for the second time in M. ANDRÉ's garden in Touraine.

OAKLEY COURT, WINDSOR.—This beautiful estate, situated on the bank of the Thames midway between Windsor and Maidenhead, and for some years the summer residence of the late Lord and Lady OTHO-FITZGERALD, has been purchased by J. L. PHIPPS, Esq., of Brightwell Park, Oxfordshire. We are informed that Mr. PHIPPS will retain the services of Mr. LOCKIE, the well-known gardener and champion Cucumber grower, and who has been head gardener and bailiff here during the last twenty-one years.

MADRESFIELD COURT HORTICULTURAL SHOW.—This old-established show, having been in abeyance for the past two years, owing to the untimely death of its founder, was reinstated on August 10 by the young Earl BEAUCHAMP. The show itself is the model of what a cottager's show should be, and if further evidence was required of the amount of good such institutions do in the improved cultivation of fruit and vegetables, one has only to look over the hedge of the cottage gardens upon this estate to see demonstrated the results of healthy rivalry, and the other benefits obtained by the distribution of high-class seeds, in the shape of additional prizes to the

cottager. The show is confined to tenants and certain parishes, and there were upwards of 900 entries for 200 prizes. The quality of the produce was equal to anything seen at shows of greater pretensions, and would have done credit to any professional gardeners. 114 dishes of Plums, 182 of Potatoes, and nearly as many of excellent samples of Apples were staged, with other things in proportion, whereby the judges' duties were no sinecure ones. The judges were Messrs. THOMAS, WINDSOR, and COLEMAN, Eastnor. Another interesting class was that for the greatest number of wasps' nests, exhibited as entire as possible, a 1st prize of 10s. being offered, and an additional 3d. for each nest beyond twenty nests; one competitor in this class staged 193, part of which were hornets', at double price, which brought the prize to nearly £3—a matter worthy of imitation by all show managers. The flower garden, pleasure-grounds, and rocks were thrown open, and looked at their best, being visited by nearly 4000 visitors.

THE SEED EXHIBITS IN THE AGRICULTURAL BUILDING.—Unquestionably the best seedsmen's display, says Professor BAILEY in *Garden and Forest*, referring to the Columbian Exposition at Chicago, from an educational standpoint, is that of VILMORIN-ANDRIEUX & Co., of Paris, in the French section of the Agricultural Building. It is different in character from all other seed exhibits in the fact that it makes no great display of mere bulk, but looks more like a section in a well-ordered botanical museum. The space devoted to this exhibit is something like 25 by 70 feet, enclosed by a wall or partition about 10 feet high, lined with deep red cloth. These walls are hung with panels of Wheat, illustrations of the farms and buildings of the firm, specimen charts showing the sugar yield of Beets, and the starch yield of Potatoes, and other features calculated to fasten the attention of intelligent visitors. One side or corner of the apartment is occupied by fourteen glass cases, which contain models or casts of many representative types of vegetables and Strawberries. Disposed at intervals upon the floor are swing-frames and albums of lithographs of various plants, and the centre is occupied by a modest table of vegetable and flower seeds. Everything is labelled with scrupulous neatness and accuracy, and one feels that the exhibit will bear careful study. The name of VILMORIN has long been connected with experiments in the crossing of Wheats, and some of the graphic results are here shown in small sheaves mounted upon tastefully framed green felt. The casts, of which there are several hundred, represent the average or normal forms of vegetables rather than unusual or gigantic specimens, and they are the best models of garden vegetables to be seen in the Exposition. They are made of a hard composition, and will bear handling. It is evident, in the character of the models and their arrangements in the cases, that their first value is a scientific one, in showing the variation of plants and fixing upon a conventional standard or type for the chief lines of development, rather than a mere display of what the firm may have to sell. A couple of the specimen charts are unique. One comprises six glass tubes about 1 inch in diameter and 5 feet long, containing proportionate amounts of "sugar in the juice," and refined sugar in the six leading Sugar-Beets. The greatest yield of refined sugar is something over 60 cwt. per acre in the French, while the lowest is only 54 cwt. in the Gray-top. A similar method of exhibition shows the starch-yield from ten varieties of Potatoes, the figures running, per acre, as follows: Giant Blue, 76·7 cwt.; Imperator, 63·2; Giant Nonpareil, 48·6; Reading Giant, 42·6; Juno, 41·9; Aspasia, 37·5; American Wonder, 36·9; Red-skinned Flour-ball, 30·4; White Elephant, 28·2; Reading Russet, 26·7. Altogether, the exhibit is just such an one as a teacher of economic botany or horticulture might be supposed to collect for museum purposes. This style of exhibit is what one expects if he knows the history of the firm which has made it. VILMORIN-ANDRIEUX & Co. is probably the best example of a firm which combines in successful proportions the scientific and commercial impulses. It has been identified with

botany from its inception. The exact foundation of the firm is unknown, but it is certain that in 1745 PIERRE ANDRIEUX was botanist and seedsman to LOUIS XV., and was in business on the Quai de la Mégièserie, in Paris, the same thoroughfare upon which the present firm is located. PHILIPPE VICTOIRE LEVÊQUE DE VILMORIN, the youngest son of a nobleman who was reduced in circumstances through the wars, came to Paris to seek his fortune, intending to practice medicine. He fell in with the botanist DUCHESNE, however, and became acquainted with ANDRIEUX, and he gave up medicine for botany. In 1774 he married the daughter of ANDRIEUX, and upon the death of the latter, in 1781, the firm became known as VILMORIN-ANDRIEUX. It acquired a national reputation under this first VILMORIN, and its influence and business relations have increased from that day to this. The elder VILMORIN died in 1804, previous to which time his son, PIERRE PHILIPPE ANDRÉ, became a partner in the business. This son established comparative field tests of plants, and he introduced many of the trees and shrubs collected in North America by his friend, the eminent botanist MICHAUX. He established an arboretum, rich in American Oaks, which, after his death in



FIG. 40.—VINE DISEASE—"BROWNING"—THE EFFECT OF A SLIME FUNGUS.

1862, the French Government made the foundation of a national school of forestry. He retired from business as early as 1845, and left the house in the hands of his eldest son, LOUIS LEVÊQUE DE VILMORIN. LOUIS gave much attention to the subject of heredity in plants, and his writings in this direction are still well known to scientists. His name is also identified with the amelioration of the Sugar-Beet. He died in 1860, at the age of forty-four, and his widow assumed a great part of the management of the business. The house is now in the hands of the two sons of LOUIS, HENRI L. and MAURICE L. DE VILMORIN, the latter of whom is secretary of the French horticultural division of the Columbian Exposition. A young son of HENRI has lately appeared before the public in the excellent little book, entitled *The Flowers of Paris*.

PUBLICATIONS RECEIVED.—*Report of the Chief of the Division of Vegetable Pathology*, by B. T. GALLOWAY.—*Experiments with Fertilisers for the Prevention and Cure of Peach-yellow*, by ERWIN F. SMITH (Washington).—*The Flora of South-West Surrey*, by S. T. DUNN, B.A. (WEST, NEWMAN & Co.)—*Icones Orchidearum Austro-Africanarum, &c.*; *South-African Orchids (Extra tropical)*, by HARRY BOLUS, F.L.S., vol. i., part i. (WESLEY & SON, 28, Essex Street).

VINE DISEASES.

(Brunisure, Browning.)

IN his humorously-pathetic paper on the enemies of the Vine, read at the Grape Conference at Chiswick on September 24, 1890, Mr. R. D. Blackmore called attention, among other things, to two diseases, the one Anthracnose, the other unnamed. Here is Mr. Blackmore's description of the last-named disease, which for some reason he did not like to be called Blackmore's disease, "*Morbus Blackmoreanus*."—"The tip of the shoot is first attacked, and the crinkle of the unexpanded leaf, which becomes of a dirty wash-leather colour, and loses its pellucidity. Then the leaves that are expanded further down the shoot become cupped and concave on the lower side, convex on the upper, and lose their graining. All the shoot becomes dull, and its crispness is gone; and if pinched, it indents without breaking. The disease, unless checked at the outset, descends the stem very quickly, runs into the older wood, and destroys the Vine. Mr. Blackmore went on to narrate how, after having tried various fungicides, he stopped the plague by dipping the shoots into the strongest liquid-manure. Specimens of this disease were sent to us from numerous sources, as well as from Chiswick, and they were submitted to several specialists, but it was not until last year that any definite conclusion was arrived at. Mr. Massee of Kew then told us he was on the track, and this year he reports with confidence that the disease is caused by one of the slime-fungi (*Plasmidiophora vitis*), closely allied to that which produces fingers-and-toes in Turnips, and clubbing in Cabbages and Wallflowers. This fungus, if fungus it be (for there has been much dispute whether the myxomycete to which group our enemy belongs), is now known to be the cause of the disease called "*Brunisure*" in France. This pest was first noticed in that country in 1882, by M. Pastre, who thought it due to a coccus or scale insect, which attacks the leaves. Its true nature, however, is fully described, with numerous illustrations, in M. Pierre Viala's *Les Maladies de la Vigne*, Paris, on, pp. 400, t. xii. At fig. 40, we give an illustration of the outward appearance of the tip of a young shoot affected with this disease. All diseased parts should be cut away and burnt, or Mr. Blackmore's experiment be repeated. At first sight it would seem as if the treatment he recommended was more likely to be propitious to the development of the fungus than otherwise; but possibly there may be too much of a good thing, and excess may produce evil consequences on slime fungi as on other things.

ANTHRACNOSE, a disease mentioned in Barron's *Vines and Vine Culture*, was at one time considered as identical with that just mentioned. The two are, however, different. As this most destructive disease has again appeared in a virulent form in this country, we shall refer to it more fully on another occasion. It is fully described in M. Viala's treatise, already cited, and specimens were submitted to the Scientific Committee at its last meeting, and will be reported on in due course by Mr. Massee.

HOME CORRESPONDENCE.

GILBERT WHITE CENTENARY.—I have received the following communication from F. Read, Esq., the present owner and occupier of Gilbert White's house, where he lived and died, viz., The Wakes, Selborne. Mr. Read writes, "May I appeal to any of your readers who are lovers of Gilbert White for their support to the following scheme:—In hot summers, Selborne always suffers severely from scarcity of water; the wells, which are all surface ones, run dry, and the villagers have to fetch all their water from the celebrated well-head, which is more than a mile distant from some of them." We propose, if money enough can be raised to place a ram at the well-head, which will pump the water up to four stand-pipes placed at convenient spots in the village. The engineer's estimate for this work is £300, of which we have collected £35, and had promised £10 or £15 more. It is impossible to do the work ourselves, as beyond the vicar and myself there are no residents. Subscriptions would be gratefully

acknowledged by the vicar, Rev. W. O. Peile, Selborne Vicarage, Alton, Hants, or by F. Read, Esq., The Wakes, Selborne. I most heartily support this appeal; I have lately remained nearly three days at Selborne, and had a long and interesting conversation with the vicar and the squire, Mr. Read, upon the absolute necessity which exists for a good water supply for the poor. It seemed to me a happy thought to celebrate the Gilbert White centenary, in memory of one whose letters on natural history will survive to the end of time. *John Colebrook.*

ITALIAN MULLEINS.—I have found at Viareggio, a sea-bathing place, a very pretty and sweet-smelling Mullein, of which I enclose a couple of flowers, as well as of the more common species. The larger and sweet-smelling kinds are comparatively rare here, whereas the smaller are innumerable. Both seem to love the sandy soil, for all the space between the sea and the hills, a belt of some 2 or 3 miles, was in Roman times the sea. A firm belt runs along the sea-shore, created by the great main road, and later by the railway, inside of which is a curiously marshy area, partly composed of the Lake of Montecuccoli, and partly of narrow strips of land divided into exact parallels by ditches, with here and there broad navigable canals—a veritable southern Netherlands. In this I saw lively Hollyhocks of brilliant rose, but separated from me by impassable ditches. The whole of this country is a profuse collection of aquatic plants, and very beautiful they are. *H. J. R.* [The flowers enclosed were those of a *Verbascum* and of a *Celsia*, probably *C. cretica*, which is described as “odoroso,” and as being found in “Sicilia ed in Sardegna.” *Althæa rosea* is said to occur on hills and in woody places in central Italy and the Basilicata, and to be “coltivata comunemente per ornamento.” Ed.]

THE WASP PEST.—I have never known such a number of wasps in my experience before; they really swarm around the walls and in the fruit-houses, particularly the Fig-house and the Muscat-vinery. Gooseberries and Currants that we usually keep far away into the autumn, are nearly all gone, through the wasps that get into the nets. I have tried several preparations, but none seem really effectual. We are gathering the Plums as fast as they ripen, and the others we protect with tiffany and coarse linen by entirely covering them; the same has been afforded to Morello Cherries. We have also nailed the same material over all the ventilators of the vineries, top and bottom, and even then we have to be exceedingly cautious, or they shoot in when the door is open. A man from the kitchen garden goes out at night to destroy the nests, and we pay him 6d. each nest. His operations do not commence till dusk, when the wasps have retired. He places a squib in the hole leading to their nest, and then a spadeful of earth to fill the hole up till they are suffocated. Afterwards he digs the nest out, and with the spade smashes up the comb and brood. Just round about the gardens and lawns he has destroyed 186 nests this season, and apparently he will destroy as many more. We also catch a good many by large bottles, in which is placed some sweet beer; we catch hundreds of them daily by this process. There have been cases in this district where they have attacked sheep and horses with such venom as to kill the animals. *W. A. Cook.*

LUISIA AMESIANA.—Having read in the *Gardeners' Chronicle* of July 8 an account of *Luisia Amesiana*, also Messrs. Hugh Low & Co.'s letter of July 15 on the same subject, I write to say that I received two plants of this Orchid in 1888, sent direct from Burmah by a relative who was quartered with his regiment there. The plants were obtained with some *Vanda Kimballiana* and other things from an Orchid collector, and sent direct to me, where they flowered every year, and sometimes twice in a year, until I exchanged them with Messrs. Sander & Co., in the autumn of 1891 for other Orchids which suited me better. I was under the impression that they were *Luisia Psyche* until I saw the drawings in your issue of July 8, which clearly showed them to be *Amesiana*. As my plants passed into the hands of Messrs. Sander & Co., very likely the plant exhibited by Sir Trevor Lawrence may be one of them. *Alfred E. W. Darby, Little Ness, Shrewsbury.*

THE APPLE AND PEAR CROP.—These are all ripening, even some of the late kinds are very much advanced. I think we shall be obliged to get the greater crop of Apples in toward the end of the present month. We have some Court Pendu Plat,

an Apple in great favour here, and which we usually store about the first week in October. These are already ripe. Blenheim and Ribstons are likewise ripe in the open, and a great many are destroyed by the wasps; in fact, it is extremely difficult to gather them, the wasps are so numerous. Williams' Bon Chrétien, which, as a rule, carries us along till the end of September, will soon be all gone; this Pear is unusually fine this season. Louise Bonne of Jersey is also ripening, and has a splendid colour; in fact, a great many varieties of both Apples and Pears must be harvested this month. *W. A. Cook, Compton Bassett.*

MELON INGESTRE HYBRID.—Last week, in looking through the gardens at Ingestre, where fruits of all kinds are so well grown, I was much impressed with the new Melon Mr. Gilman has raised by crossing Hero of Lockinge with Countess, the result being a hybrid of great excellence; the constitution of the plant is strong, it is a good grower, and a free setter. Fruit beautifully netted, of a bright golden-yellow colour, thin skin, and shows no tendency to crack. The flesh is greenish-white, of great thickness and flavour. Several houses are planted with this variety. Fruits were seen in various stages of growth. One house, containing eight plants, had from thirty to forty ripe fruits, averaging from 3 lb. to 5 lb. each. Ingestre Hybrid promises to be one of the best Melons ever sent out. It will prove a boon to the grower for market, for the exhibition-table, and indeed wherever Melons are grown this should find a place. It was awarded a Certificate of Merit at the meeting of the Royal Horticultural Society on May 9. The stock is in the hands of Messrs. Veitch & Sons, Chelsea, for distribution. *Robert Cook, F.R.H.S., Horticultural Lecturer, Staffordshire County Council.*

—Through a slip of the pen the above Melon was last week called The Countess, a variety sent out, I am told, by that excellent fruit grower, Mr. Goodacre. Ingestre Hybrid is the result of crossing The Countess and Hero of Lockinge, and it was the hybrid that I described in last week's issue. *J. Udall.*

ROOT-PRUNING.—The letters which have so far appeared in the *Gardeners' Chronicle* in reply to Mr. Crowley's note on the above subject, to a certain extent agree that root-pruning should be practised to bring about fruitfulness in trees which, owing to gross growth, have borne no fruit. This intention I take as being universal with all fruit-growers who possess a practical knowledge of the cultivation of fruits. It is, I think, to be wondered who would go to the labour and expense of root-pruning trees that bear good and regular crops of fruit. What would the object be for doing so? Then again what practical man would root-prune his orchard trees at six years old and every alternate year afterwards. Such practice, I think, was never advocated by the old school of gardeners. Mr. Molyneux, at the beginning of his article, says, “I am sure root-pruning is too much resorted to, I allude to those persons who may be called the older school of gardeners, and that there is certainly less root-pruning done now-a-days;” and again, Mr. Goddard says, “I fear that because the old school of gardeners practised severe root-pruning the younger men may follow suit.” Now, I think, that in reference to these remarks, there has been, or is, at the present time a class of gardeners who pride themselves in hacking at the roots of their trees regardless of what they are doing, but surely it does not follow that the younger gardeners are as unwise. I take it to be that at the present time never was root-pruning more practised with unfruitful trees, and never was the art better understood; and further, I think it would be well for any novice, before he commences to hack at the roots of his young, healthy, and promising standard trees, to consult some good nurseryman, practical gardener, or fruit-grower. In Kent, the soil and climate generally are good for fruit-growing. This being so, it is very seldom that an orchard tree requires root-pruning after it has been properly planted; but there are, however, cases similar to that mentioned by Mr. Molyneux where the roots must be cut; but it will be quickly observed by any practical fruit-grower whether the trees will soon reach a fruiting condition or not. Some trees from the very first incline to grossness, while others begin to fruit the second or third year after they are planted. Where grossness repeats itself year after year, I say by all means root-prune, but do this with care. A standard from six to eight years of age should be operated upon only on one side during the one year; and this is best done by opening a trench 2 feet wide half-way

round, and at a distance of from 3 to 4 feet from the stem. Dig deep enough to get under some of the main roots, remove the soil as the work proceeds, gradually working to the tree; preserve all the roots possible, and sever any strong descending root which may have got down in the cold subsoil; this having been done, break up the subsoil, cut off all the tips of damaged and broken roots, and relay them evenly at various depths, using the same soil, or a little fine soil may be scattered over and amongst the roots, should the staple be wet and heavy. This should be done in early autumn, and the following year the other half should be treated. Though I have said that the soil and climate of Kent is good for fruit-growing, and that it is rarely root-pruning of orchard trees is required, yet these remarks apply to many parts in the south. And what of the north and the more unfavourable parts? I feel sure it would be very interesting to readers generally if some of our northern friends were to give us their experience of root-pruning standard fruit trees. *H. Markham, Mere-worth Castle, Kent.*

RICHARDIA LUTWYCHEI.—I am sorry not to have replied to “Inquirer's” question concerning the distinctness of this plant, published in the issue of June 17, but in some way I overlooked it. I have seen but the one plant of *R. Lutwychei*, from which I described, and on comparing it with the material in the Kew Herbarium, I found it readily distinguishable from all by the characters given. But I was in error in stating by implication that *R. hastata* has no bristles on its petioles; none being observable on the dried specimen I did not think of comparing it with the living plant, which I had not seen for some time, and had forgotten that it had any setæ on the petioles. Having now done so, I still think that *R. Lutwychei* and *R. hastata* are distinct, although closely allied species; this opinion, however, is based on a very meagre knowledge of *R. Lutwychei*, and I must leave it for those who have the two plants in quantity to definitely dispose of the question as to their distinctness. The difference which appears to me the most pronounced is, that the leaf of *R. Lutwychei* is rather larger than that of *R. hastata*, and different in shape, on account of the basal lobes overlapping one another, which (I am informed from two sources) is always the case in adult leaves of *R. Lutwychei*, but I do not find it so in *R. hastata*. There is also the very wide separation of the two localities from which the plants come, and this alone would make one suspect that they are two species, although in this case it may not in reality be so. This point I leave for others to decide. As to *R. melanoleuca*, that is at once distinguished by its white-spotted leaves, besides other differences. *N. E. Brown.*

A MONSTER PEACH TREE.—It is my good fortune to have the privilege of visiting many of the principal estates and nurseries in the counties of Durham and Northumberland, and amongst my many calls, none I think afford me more real pleasure than my occasional visit to the residence of F. Stobart, Esq., principal agent to the Earl of Durham's mining and other estates. Situate within a stone's-throw of the beautiful country seat of the Lambtons, Beddick Hall is peculiarly pleasantly located, and is delightfully picturesque in its appearance from the front terrace, with its winding walks and handsome clumps of Rhododendrons, of leviathan size and proportions, lifting themselves, as it were, majestically above a well-trimmed velvety-green carpet, surrounded by huge lofty trees as a background. Mr. Archibald Scott, the head gardener, generally has something unusual for the visitor's eye, and the great Peach tree is a sight seldom, if in fact ever, to be seen here in the North of England. Proceeding alongside the vineries, which is one long terrace of glass divided into sections, everything is in perfect order. At the extreme end of this is to be seen the Peach tree, which is the principal reason of my troubling you with this article. The tree is fully 23 feet long by 17 feet deep, and is of the Royal George variety. Its foliage is beautifully green, and presents a most healthy and perfectly clean appearance. Suspended from its branches are no less than 420 good-shaped Peaches, of inviting colour; the average weight of this fruit is from 6 to 8 oz. The age of the tree is about fourteen years, and it continues to make great growth. On each side of this tree are two smaller ones—another Royal George and a Princess of Teck. These two trees, I noticed with regret, are being mutilated annually to make room for the expansion and growth of the larger one. Of the Princess of Teck I wish to say a few words: the fruit hanging

on the tree here grown is very fine, the heaviest samples weighing from 9½ to 10½ oz. The colour of the fruit and the flavour are all that can be desired. These Peaches are certainly a great credit to Mr. Scott. *X. Y. Z.*

NOTES FROM KEW.

THERE are some noteworthy plants in flower at Kew now, both indoors and out, where, notwithstanding the dryness of the season, the plants generally are looking well. The exception is the annuals, which, both in the herbaceous ground and the borders, are generally a failure this year.

Aristolochia gigas Sturtevantii is flowering freely again, both in the Palm-house and the Water-lily-house. The latter house is now at its best, the Gourds being in fruit, and the other roof-climbers in flower, *Solanums*, *Passion-flowers*, *Allamanda*,

with the most graceful effect from the under-side of the branches. *Pueraria Thunbergiana* is in fine condition there. The species of *Fuchsia*, too, are worth looking at, as are also several species of *Echium* from Teneriffe, and some well-flowered little plants of *Tecoma radicans*.

Victoria regia is strong and floriferous this year; so too is *Euryale ferox* in the same tank. That grand foliage plant, *Macaranga* or *Mappa Porteana*, is in fine health, and is coming into flower. This deserves to rank with the handsomest of large-leaved plants for cultivation in big stoves. *Ixora macrothyrsa* (Duffii), *Thunbergia grandiflora*, and *Adenocalymna nitidum* are conspicuous for their flowers in the same house. The double Cocoa-nut is growing and flourishing, and there is a fine crop of pods on a *Vanilla* plant trained over the tank.

Orchids are busy growing now, but there are a few choice species in flower, viz., *Lælia monophylla*,

noticed the pruners at work on the trees in the arboretum, and that the work they are doing in good gardening is apparent enough in the improved appearance of the trees operated upon last year. There are two big specimens of *Dasylium acrotrichum* in flower, one in the temperate-house, the other in the succulent-house.

WILLIAM THOMSON.

WE have now the opportunity of reproducing a photograph of the late Mr. William Thomson, of the Tweed Nurseries, Clovenfords, Galashiels, N.B., whose obituary notice was published in our issue for August 5, p. 167. Mr. Thomson was very highly respected by all who knew him, and very great sympathy has been expressed towards Mr. W. Thomson, senior, who has met with so sad a bereavement in his 80th year, and towards the widow and family of the deceased gentleman.

NOTICES OF BOOKS.

LA FUMURE DES CHAMPS ET DES JARDINS, &C.
Par L. Grandean.

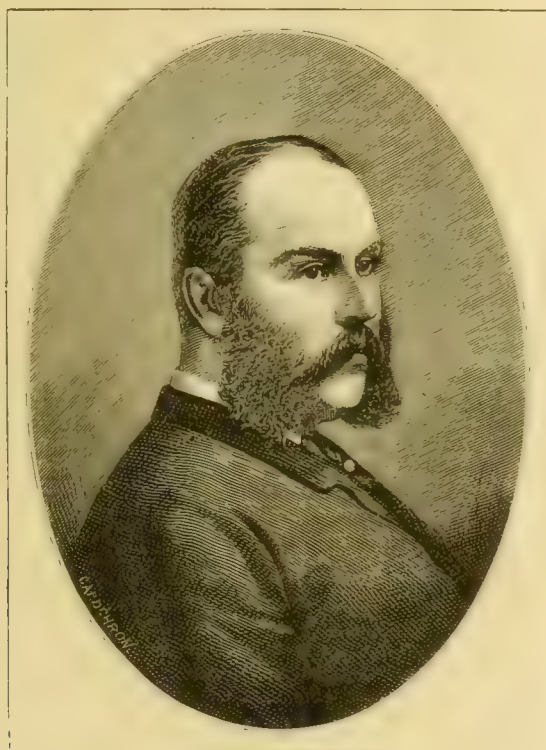
THIS is a little treatise on the principles and practice of manuring, whether with natural or artificial means. It is largely based on the chemical and experimental researches of Lawes and Gilbert, Wagner, and others. The application of nitrogen, phosphoric acid, and potash in quantities, and in manners suitable to different conditions and different objects, is treated of with skill and lucidity. The general principles of manuring, in fact, are well explained, and this is all that can be expected in a book, their application can only be properly appreciated by direct experiment. In this connection, M. Grandean lays great stress on "Champs de démonstration," or illustrative examples. Whilst commending experimental plots for the purpose of acquiring information, and the results of which may be good, bad, or indifferent, according to circumstances, M. Grandean strongly advocates the establishment of illustrative plots whereon the gardener or the farmer may see for himself the advantage accruing from the use of a particular manure or a certain method of treatment. The ordinary gardener cares nothing for experiments, often derides them, generally misapprehends their object, but if you can show him the outcome of many experiments in the shape of successful result which appeals to his financial interests, rather to his intelligence only, the case is different. So soon, therefore, as by trial and experiment, a good result has been surely arrived at, that result should be demonstrated in the trial grounds, so that everyone concerned may see for himself. Of course, for purposes of demonstration, the demonstration plot should be side by side with one treated in the ordinary way, and with one to which, at any rate, no manure at all has been applied.

Some day we may hope for a properly equipped and adequately manned school of horticulture, when these requirements could be easily met and effectively controlled.

Chiswick is the proper place for a beginning, but failing this, the various County Councils in the rural districts could readily carry out a scheme of this kind.

SEMER ET PLANTER, ETC.

A second edition of this useful book more than confirms our good opinion of the first. It may be well to remind the reader that this is a treatise on the rearing and planting of timber trees, and that it is based on the practical experience of Mr. D. Cannon, an Englishman settled in Sologne, near Orleans, in a district spoken of as one of the most impoverished in France (deshérité is the word used), but which by judicious planting is rapidly increasing in value, and in spite of many disasters has attained a condition of relative prosperity, which is continually increasing. Forestry is thus a precious resource for agriculture, as a means of turning to profitable account lands



THE LATE WILLIAM THOMSON, OF CLOVENFORDS.

Clitorea, *Dipladenia*, as well as the *Aristolochias*, being conspicuous for their wealth of bloom. The *Nymphæas* also are good this year. *Nelumbiums* have not flowered well. The male plant of the Ivory-nut Palm, *Phytelephas macrocarpa*, flowered in the Palm-house a few days ago, the inflorescence a curved spike 18 inches long, produced near the ground, and clothed with closely-packed filaments as thickly matted as a door-mat. It was yellow, and powerfully fragrant. There is a new *Crinum* in flower in one of the beds, a stately plant, 5 feet high, with three spikes, bearing each a large umbel of white flowers, with long, narrow, curling segments. *Lonchocarpus Barteri* on the rail surrounding the gallery, *Aristolochia brasiliensis* in the same position, and the black-flowered, Grape-like *Mucuna imbricata*, are also in flower in this house. *Bignonia purpurea* and *B. rugosa*, the former purple, the latter pale yellow-flowered, are two species worth including among select summer-flowering stove climbers. In the temperate-house there is a splendid specimen of *Cyphomandra fragrans*, a superb plant for large conservatories, as it grows rapidly, and is every year clothed with racemes of flowers, some purple, some yellow, all hanging

Sobralia xantholeuca, *Aërides Sanderianum*, *Vanda cœrulea*, *Cypripediums*, &c.

In the stove, *Ataccia cristata* is in flower, the *Myrmecodias* and *Hydnophytums* are growing vigorously, and the creepers on the roof are worth looking at. *Begonias* are represented by a large collection of healthy specimens, some of which, such as the *B. Haageana*, *B. Scharffii*, *B. coccinea* (corallina), *B. Kewensis*, and *B. semperflorens* vars. are now gay with flowers. The *Belladonna Lilies*, *Lilium Henryi*, *L. tigrinum*, *L. speciosum*, and *L. auratum* are now worth seeing, and the *Campanula pyramidalis* and *Lilies* are specially good in the conservatory. *Hibiscus syriacus* in the arboretum is showing the effects of a tropical summer by flowering freely, and the *Tea* and *Noisette Roses* were never finer. The blue Himalayan Poppy has been a feature in the rock garden for several weeks, and the pretty *Zauschneria californica* is flowering freely still.

In conclusion, a special line must be given to the Bamboo garden, where the Bamboos have made wonderful growth, and astonish everyone, gardeners included, by their variety, free growth, and elegance. Clearly this collection of hardy Bamboos at Kew is a most valuable horticultural object-lesson. We

which otherwise would be unfitted for cultivation. We cordially commend this volume to all planters as a practical treatise based on large experience. It may be had from J. Rothschild, 13, Rue des Saints Pères, Paris, or through any foreign bookseller.

SOCIETIES.

LEICESTER HORTICULTURAL SHOW.

AUGUST 8.—This show is always well patronised by the public if the weather is fine, and this year it was estimated that nearly 30,000 people attended. Many attractions are provided in the way of music, aquatic sports, gymnastics, &c., and the gardens are well worth a visit at any time; and although the season has not been a favourable one, Mr. Burn has succeeded in making a good show with the flower-beds, and the recent rains have helped the grass to regain its usual appearance.

The groups of plants were arranged in a new show-house, lately erected from the profits of the Society, and costing £700. This will be a grand place for flowering Chrysanthemums in the winter. The 1st prize was awarded to Mr. J. Smith, gr. to Mr. S. Bennett, for a pretty arrangement, brightened with *Eulalia japonica*; Mr. Barry, gr. to Mr. H. Snow, won the 2nd prize; and Mr. Calvert, gr. to Mr. G. Olliver, 3rd. The zonal Pelargoniums and Begonias were arranged down the sides of this house, and the whole looked very tasteful.

For the fruit prizes there was a strong competition in most of the classes. The 1st prize for a collection of eight dishes was easily won by Mr. J. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, who showed Black Hamburgh Grapes (fine in bunch and berry), good Muscat of Alexandria, and nice clean bunches of Madresfield Court; Melon Best of All, a Queen Pine, some good Lord Napier Nectarines, Peaches, and Apricots. 2nd, Mr. Jas. McIndoe, gr. to Sir J. W. Pease, Hutton Hall, Guisborough, Yorkshire, who showed fine large bunches of Grapes, a large bunch of Bananas, very fine Pitmaston Duchess Pears, &c.

In the collection of four dishes, Mr. J. Goodacre was again 1st, showing some fine Muscat Hamburgh Grapes, a Melon, Nectarines, and Peaches; 2nd, Mr. W. H. Divers, gr. to J. T. Hopwood, Esq., Ketton Hall, Stamford, who was a few points behind with Grapes, but had Peaches and Nectarines very fine.

For Black Hamburgh Grapes, Mr. McVinish was 1st, showing in grand style; 2nd, Mr. J. Goodacre. And for any other black variety, Mr. W. Messenger was easily 1st, with Gros Maroc, grand in berry and colour; 2nd, Mr. W. G. Adams, with Gros Colmar, fine berries.

For Muscat of Alexandria, Mr. McVinish was 1st; and for any other white variety, 1st, Mr. J. Read, gr. to the Earl of Carnarvon, with Cannon Hall, having fine large berries; 2nd, Mr. J. Goodacre.

Mr. W. H. Divers was 1st for Peaches, showing Crimson Galande—fine fruit, highly coloured.

Nectarines.—1st, Mr. W. H. Divers, with Dryden, large, well-coloured fruit; 2nd, Mr. J. H. Goodacre, with Lord Napier; 3rd, Mr. J. McIndoe, with Spencer, Cherries, Currants, Plums, and Apples were largely represented.

Some grand vegetables were shown. For a collection of twelve kinds, Mr. Garraway, of Bath, was 1st, with a very fine collection, nicely arranged with leaves of Carrot, coloured, and Parsley. The single dishes also brought some very fine specimens, especially in Potatoes, Carrots, Onions, &c.

A large number of Roses was staged. For thirty-six kinds, Messrs. Cocker & Sons, of Aberdeen, were 1st, showing well for the season; Messrs. Croll, of Dundee, 2nd; Messrs. Harkness & Son, Bedale, Yorks, 3rd. For twenty-four kinds, the same exhibitors won, and in the order given for the larger class.

A large number of hardy herbaceous flowers was staged. Messrs. Cuthbertson, of Rothessay, were awarded a Silver Medal for an exhibit of these, not for competition.

Messrs. B. S. Williams & Son, of Holloway, staged a fine group of new and rare plants, not for competition. These were deservedly awarded a Gold Medal, and consisted of *Nepenthes*, *Caladiums*, *Crotons*, *Sarracenias*, &c., with some choice Orchids.

Messrs. J. Laing, of Forest Hill, also contributed

a very interesting group of *Bertolonias*, *Begonias*, *Gloxinias*, *Palms*, &c., a box of very fine *Begonia* flowers and a new *Carnation*, *Stansted Beauty* (Gold Medal).

Mr. Forbes, of Hawick, sent a fine collection of border *Carnations*, arranged in bunches, which were very pretty and fresh. A Silver Medal was awarded to them.

The cottagers showed a creditable lot of vegetables, many of which would have fared well if exhibited among professional growers.

TAUNTON DEAN HORTICULTURAL.

AUGUST 10.—The Taunton Dean Horticultural and Floricultural Society held its 26th annual exhibition of plants, fruits, flowers, and vegetables in Vivary Park, Taunton, on the above date, under most favourable circumstances. The management of the show reflected great credit upon the courteous hon. secretaries, Messrs. Howard Maynard and Alex. Hammett. Plants were shown in fine condition by Mr. James Cypher, Mr. W. Brock, and Mr. Peel, gr. to Miss Todd, Lidford Lodge, Shirley.

Prizes of £20, £15, and £6 were offered for twelve stove and greenhouse plants in flower. Out of three lots shown, Mr. Cypher was a good 1st, staging, among others, grandly-flowered plants of *Erica Everiana*, *E. Altoniana*, *E. Austriana*, *Dipladenia amabilis*, *Allamanda Hendersoni*, *A. nobilis*, *Anthurium Scherzerianum*, *Bougainvillea glabra*, *Ixora Pilgrimi*, *I. Williamsi*, and *Dasylirion acrotrichum*. Mr. J. W. Mould, of Pewsey, was 2nd, showing in his collection a grand plant of *Erica Everiana* superba, fresh, and profusely flowered. Mr. Cypher was 1st in the class for six stove and greenhouse plants in flower, staging similar exhibits to those mentioned above. In the class for eight fine foliage and variegated plants, Mr. Cypher was well ahead with large brightly-coloured *Croton Chelsoni*, *C. Thomsoni*, *C. Mortefontaineensis*, *Cycas circinalis*, &c. Mr. Brock was a creditable 2nd.

Orchids.—Mr. Cypher was 1st for four plants of *Orchids*, *Cattleya aurea* and *C. Gaskelliana*, having five and eleven flowers respectively, were his best. The same exhibitor was also 1st in the class for newly-introduced plants, staging nice pieces of *Dendrobium Phalaenopsis delicata*, and *Cattleya Victoria reginae*.

Ferns.—Mr. Brock was a good 1st for eight Exotic Ferns, showing good-sized fresh well-grown plants.

Groups of miscellaneous plants arranged for effect on a space of 100 square feet, made a fine show in themselves.

Mr. Brock was 1st for a light and tastefully-arranged group, edged with *Panicum variegatum*; *Palms*, and *Humea elegans* being used in the background with bright-coloured *Crotons*, *Celosias*, *Cyperus alternifolius* variegata, *Francoa ramosa* (Bridal Wreath), and other suitable plants, set in a ground-work of Maidenhair Fern, the arching spikes of the *Francoa* showing off to advantage in the arrangements; Mr. Peel was a good 2nd.

Cut Flowers.—These classes were well filled. The *Roses* and *Dahlias* staged by Messrs. Keynes, Williams & Co., Salisbury; Dr. Badd, Bath, and Mr. George Humphries, were very fine indeed. Lady Mary Fitzwilliam, Mrs. John Laing, John Hopper, and Niphetos, were exceptionally good in Messrs. Keynes's 1st prize stand of thirty-six *Roses*, distinct varieties. This firm was also awarded 1st prize for twelve blooms of *Fancy Dahlias*, and 1st for a stand of the *Cactus* varieties in six sorts.

Mr. Hawkins, gr. to W. H. Fowler, Esq., Claremont, Taunton, was a capital 1st for twenty-four spikes of *Gladioli*, in not less than twelve varieties.

Fruit.—All the fruit classes were well-contested, and the exhibits were very meritorious in size, quality, and finish.

Six collections of eight kinds (*Pine* excluded), were staged in exceptional quality. Four of these were very close to each other in point of merit. Mr. William Iggulden, gr. to the Earl of Cork, Marston House, Frome, was placed 1st, staging medium-sized, compact, well-coloured bunches of Muscat of Alexandria and Madresfield Court Grapes, Bellegarde Peaches, Jefferson's Plums, Pine-apple Nectarines, Moor Park Apricots, a Melon, and Williams' Bon Chrétien Pears. Mr. Lloyd, gr. to Vincent Stuke, Esq., Langport, was a dangerously close 2nd, and Mr. Crossman, gr. to J. Brutton, Esq., Yeovil, was a capital 3rd, both staging heavier produce than Mr. Iggulden. The same exhibitors were placed in the above position for collections of four kinds,

Mr. Iggulden showing well-finished Madresfield Court Grapes, Lockinge Hero Melon, Bellegarde Peaches, and Elruge Nectarines.

Out of six stands of three bunches of Black Hamburgh Grapes, Mr. Iggulden was 1st, with medium-sized, well-coloured bunches. Mr. H. W. Ward being 1st in a like competition for any other black variety, staging well-coloured bunches of Madresfield Court; Mr. Iggulden was a close 2nd with the same variety. Mr. Iggulden was 1st for three bunches of Muscat of Alexandria, Mr. Lloyd being a good 2nd; and Mr. T. Crossman was placed 1st for three bunches of Buckland Sweetwater shown in any other White Grape class.

Out of fourteen dishes of Peaches staged, Mr. John Reed, gr. to J. S. Parsons, Esq., was 1st. Mr. A. Crossman being accorded a like position for Nectarines, staging capital Pine-apple.

Mr. T. Every, Bath, was awarded premier position for six dessert Apples out of twenty-five lots, showing handsome fruits of Beauty of Bath. Mr. David Hobby, gr. to the Right Hon. Sir Ponsonby Fane, Brympton, Yeovil, was a capital 1st in the class for dessert Pears, showing handsome fruits of Williams Bon Chrétien. Mr. John Allen, gr. to the Rev. W. L. Cotton, West Coker, Yeovil, had the best-flavoured Melon. Mr. Iggulden had the 1st prize for yellow Plums, showing Jefferson's; and Mr. A. Crossman obtained a like honour for dark Plums, staging a capital dish of Grand Duke.

Vegetables made a grand display, the entries being numerous, and the quality of the several exhibits was of a high order. Out of six excellent collections of eight kinds, Mr. Wilkins, gr. to Lady Theodora Guest, Hensbridge, was 1st, staging fine specimens of Sutton's Satisfaction Potato, Ne Plus Ultra Runner Bean, Autocrat Pea, Giant White Celery, Autumn Giant Cauliflower, Ponderosa Tomato, Excelsior Onion, and Intermediate Carrot. Mr. Copp, gr. to W. S. Earle Drax, Esq., Hildnest, Sherborne, was a close 2nd. The positions of the exhibitors just mentioned were reversed in Messrs. Jarman's prizes offered for collections of twelve kinds. Mr. Copp was also 1st for Messrs. Sutton's prizes given for collections of six kinds, staging excellent examples of Sutton's A1 Onion, Satisfaction Potato, Autumn Mammoth Cauliflower, Perfection Tomato, Giant White Celery, and Intermediate Carrot.

Mr. H. W. Ward was an easy winner of 1st prize for a quarter-peck of Peas, with fine fresh pods of Veitch's Autocrat.

Messrs. Robert Veitch & Son, Exeter, showed their climbing French Bean growing in a pot. This variety attains to a height of 6 or 7 feet, and produces with great freedom long straight handsome pods from the bottom to the top of the bine.

Miscellaneous.—Mr. B. R. Davis, Yeovil, staged an excellent lot of Begonias in pots, and also some cut blooms, the latter being of great size, fine form, and of a variety of pleasing and distinct shades of colour. Messrs. Kelway & Sons, Langport, contributed *Gladioli* and herbaceous plants in variety. Messrs. Robert Veitch & Son showed a collection of *Liliums* and herbaceous and alpine plants in great variety, their exhibits making a grand show on the centre stage at the end of one of the several large tents.

MAIDENHEAD HORTICULTURAL.

AUGUST 10.—This show was well worthy of the district in which it was held.

Plants.—In some classes the competition was not so keen as usual, but the quality left nothing to be desired in any case. For twelve foliage plants in 8-inch pots, Mr. Lockie, Windsor, was 1st, with well-grown healthy examples, *Palms*, *Crotons*, and *Pandanus* predominating.

With six stove and greenhouse plants, three to be in flower, Mr. Aitken, gr. to Major Meeking, Riching's Park, was 1st, all the flowering plants being white ones; these were a *Stephanotis*, a *Eacharis*, and *Schubertia grandiflora*.

With six Ferns, Mr. Aitken occupied the same position, with grand plants of *Davallia Mooreana*, *D. filix-plumosa*, and *Microlepia hirta cristata*, with others. Mr. Jakeman, Riverdene, Cookham, followed, with a rather uneven lot.

Mr. Aitken was 1st for both a flowering and a foliage specimen, showing in the first instance a good *Dipladenia amabilis*, and in the latter a grand example of *Croton Queen Victoria*.

With table plants, Mr. Johnson, gr. to A. Gilliatt, Esq., was 1st, with excellent examples, well-furnished. Finely-flowered *Fuchsias* were shown by Mr. G. Hopkins, gr. to J. W. Burrows, Esq., which gained him the 1st prize.

Tuberous Begonias were shown in grand style in three classes, the best lot coming from Mr. A. Deadman, Intheray, Maidenhead; these were all large specimens of fine varieties. The finest six Cockscombs were from Mr. Lockie; these were extremely dwarf and sturdy, with large combs. A very fine exhibit was the half-dozen zonal Pelargo-

Fruit.—The best collection of six dishes was that staged by Mr. E. Johnson, who was strong in Madresfield Court and White Muscat Grapes, Crawford's Early Peach, and Balgown Nectarines. Mr. Goodman, gr. to Miss Hammersley, coming a close 2nd, the best dishes here being the Muscat Grapes and Lord Napier Nectarines.

Peach. The best Nectarines those of Elruge from Mr. Paxton.

Mr. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, was the most successful exhibitor in the Grape classes, being 1st for Black Hamburgh, with large bunches, finely coloured, the same for any other black, with splendid Black Alicantes, and for



FIG. 42.—LÆLIA TENEBROSA, WALTON GRANGE VARIETY.

Fully described at p. 179, *ante*. Sepals and petals citron-yellow, lip white, veined with crimson, and with a central blotch of the same colour.

iums from Mr. Aitkin; these were large, but dwarf, and in dense bloom. Well-grown Coleus came from Mr. Jakeman and Mr. Hopkins respectively, the prizes going in the order named.

In the large group class, Mr. Aitkin was easily 1st with a most effective arrangement, light flowers and foliage being carefully blended. For a smaller group, Mr. John Smith, St. Leonard's Road, was 1st, the plants extremely healthy.

For four dishes, Mr. D. Paxton, gr. to Hon. C. Irby, was 1st, all being good of their kinds.

Hardy fruits in collections of four dishes always produce a keen competition; Mr. Johnson was 1st on this occasion, his choice being Williams' Bon Chrétien Pears, extra fine; good Humboldt Nectarines, Kirke's Plums, and Crawford's Early Peaches.

The finest dish of Peaches was that from Mr. McPhun, extra good examples of the Nectarine

any other white with Foster's Seedling. The finest Muscats were those from Mr. G. Goodman.

Apples, both dessert and culinary, were shown well, Mr. John Davis, gr. to General Davies, and Mr. Aitkin, taking the 1st in each class.

Vegetables.—These are always an important feature. In two special classes for Messrs. Suttons' and Messrs. Webbs' prizes, Mr. Lockie scored two splendid 1sts, the competition in the former class

being the more keen of the two. Autocrat Pea, Perfection Tomatoes, and Satisfaction Potatoes, were the finest in that class by Mr. Lockie; Mr. McPhun followed an excellent 2nd.

The classes for amateurs, garden-labourers, and cottagers, were all well filled, in spite of the dry season.

Cut Flowers.—Mr. J. R. Tranter, Henley-on-Thames, was 1st for Roses, and Mr. Such 2nd, both showing capital blooms. Mr. Walker, Thame, was a fine 1st in Dahlias, the blooms large and fresh. Mr. Walker was also 1st for Zinnias, a very fine exhibit, and Mr. Tranter for Asters. In the classes open to private growers, only Mr. B. Campbell was 1st for Roses, and Mr. Mott for Show Dahlias. The best Cactus kinds coming from Mr. Butler, gr. to Mrs. Pocock, Curtisfield. Mrs. King, Maidenhead, was easily 1st for table decorations, with a very tasteful exhibit, not overdone.

Miscellaneous Exhibits.—Of plants, the most important of these was that from Messrs. B. S. Williams & Son, of Upper Holloway. This consisted of some choice Orchids, Cattleya Dowiana being conspicuous; also of *Sarracenia*s, select *Croton*s and Palms making in all a very pleasing exhibit. Messrs. J. Veitch & Sons Chelsea, sent a large and fine assortment of fruit (hardy kinds), the Plums and Apples being particularly good; with these were a splendid lot of Herbaceous Phloxes and Hardy Annuals and other hardy border flowers. Mr. Such had a large display of plants and also of hardy flowers, the latter being of unusual excellence. Mr. Phippen, Reading, had floral arrangements in his usual good style; and Mr. Owen, Maidenhead, a small and tasteful exhibit of small decorative plants. Mr. Will Tayler showed Roses in very fresh condition, and Messrs. Laing & Sons had a fine lot of cut Begonia blooms, &c. Mr. Charles Turner also exhibited Roses in his usual good style. These and other miscellaneous exhibits forming most important features in the show.

ROYAL SCOTTISH ARBORICULTURAL.

THE ambitious scheme of the Council for a week's excursion in the far south had been most thoroughly endorsed by the Society, and nearly 150 Scottish arboriculturists assembled at the ancient White Hart Inn at Windsor, including Colonel Bailey, Lecturer on Forestry to the University of Edinburgh; Mr. Methven of Edinburgh, Mr. Watt of Carlisle, Mr. Dunn of Dalkeith, Mr. Rutherford of Kirkleatham, Mr. Michie of Balmoral, Mr. Lindsay of the Edinburgh Botanical Garden, and the indefatigable Secretary, Mr. Moffat, but unfortunately not the President, Professor Balfour, who was detained in Edinburgh by a course of lectures.

Though late to bed, the foresters were early to rise, and soon after eight on Tuesday morning were streaming through the royal stables and the state apartments of the Castle and up the round tower, where the "pride of the morning" still obscured the horizon. Under the guidance of Mr. Collmann, inspector of the palace, they then visited the north terrace and the formal gardens on the east side of the building, where a fine specimen of *Kolreuteria paniculata* and a *Paulownia*, some 2½ feet in diameter, attracted some attention. Strolling through the garden to Queen Adelaide's cottage, and noting by the way a fine *Fraxinus ornus*, the fine Beech, differing from the ordinary variety, and now 3½ feet in diameter, which was an offshoot taken from the Luther tree at Altenstein, and transplanted here in 1850, next attracted attention.

After a visit to Her Majesty's pet dogs, a short walk brought the party to the largest Oak in the Home Park, which proved 30 feet 5 inches in girth at 5 feet up. Herne's Oak blown down in 1863 is now represented by a sapling planted by Her Majesty in that year in the neighbourhood of several fine old trees of the same species from 800 to 1000 years old. The pedunculate and scarlet Oaks here suffered severely this year from the ravages of the Oak leaf-roller moth (*Tortrix viridiana*); but Mr. Simmonds, the deputy surveyor, who had prepared a guide-book for the party, and to whose personal guidance much of the success of the visit was due, stated his experience to be that the Durmast Oak (*Q. sessiliflora*), was not attacked, an experience which we found to be, to a modified extent, endorsed by Mr. Lascelles, Deputy Ranger of the New Forest, where the sessile-flowered Oak is more abundant. Mr. Simmonds also told us of his failure in an attempt to cope with the plague by putting, as suggested by Miss Ormerod, tarred hay-bands round the trees when the moths are crawling up them to deposit their eggs.

Approaching the Royal Mausoleum at Frogmore,

we were attracted by a fine deciduous Cypress, 8 feet at girth at 5 feet up, and 35 feet to its lowest branch; but several holes drilled by the green woodpecker probably indicated its unsound condition. On emerging on to the lawn of Frogmore House, another fine specimen of the same tree was noticed with branches feathering to the ground, together with grand specimens of *Ginkgo biloba*, *Libocedrus decurrens*, and *Robinia*, the latter 13 feet 3 in. in girth. There are several fine holm Oaks near the cottage which are believed to be about 400 years old, this species having, according to tradition, been introduced yet earlier by the Crusaders. One of these trees, beneath which Her Majesty often takes her breakfast, proved to be 16 feet 2 inches in girth.

After inspecting the aviary of poultry and pigeons, the coolness of the Prince Consort's model dairy, built in 1858, was, considering the heat of the day, most acceptable, and, after walking through the dairy farm, with its interesting variety of cattle, from the North American bison to the quieter and more beautiful Jersey cows, we noticed, on our way to the gardens a beautiful specimen of *Cedrus atlantica* var. *glauca*, planted in 1858, in very fine condition. The extensive vineries and conservatories, bright with *Gloriosa superba*, and *Nepenthes* next occupied our attention, under the guidance of Mr. Owen Thomas and his foreman. We sampled the fine display of Peaches as we filed through the fruit-room, and then walked through a part of the 50 acres of kitchen garden. Considering that daily supplies have to be sent from here to the royal households at Osborne and Balmoral, cultivation is necessarily on a market-garden scale. The well-loaded espalier Pear trees, the Asparagus forcing beds with light frames and under-ground pipes, and the Strawberry plants, put out after having been once forced, were among the chief objects of interest.

A few minutes' walk brought us to the Prince Consort's Shaw Farm, where Her Majesty had graciously provided luncheon. Carriages were then taken for a drive through the Great Park, the first halt being at the Flemish Farm, for a glimpse at the Devon and Hereford cattle that the skill of Mr. Tait has rendered so famous in the show-yard. Passing the Prince Consort's Memorial Oak, attention was directed to the plantation of maiden Oaks in Cranbourne Chase, extending over 13 acres, planted under Lord Burleigh's direction in 1580, after the Armada had threatened the destruction of our naval forest of Dean. These fine trees were found to average from 15 to 15½ feet in girth. Dismounting at Cranbourne Tower, under the surveillance of a fine herd of white-red deer, we next examined the so-called William the Conqueror's Oak, supposed to be one thousand years old. Though now a mere wreck with but one live limb, it girthed 36 feet 9 inches, and twenty-three of our party were able to stand at once in its hollow interior. Remounting the vehicles the party then entered the forest, and passing the fine young Beech named after Queen Adelaide, reached the largest tree at Windsor, outside the park, an Oak girthing 35 ft. and in a far less decrepit state than the Conqueror's Oak which had just been seen. Re-entering the park, after traversing some interesting plantations of Oak and Beech dating from 1820, some more ancient pollard Oaks were seen near Forest Gate, some in very fair condition considering their eight centuries of age, and a Jubilee Oak of 1887, and then with much interest the Prince Consort's estate workshops were visited. The travelling saw-bench for heavy timber and the smaller bench, both worked alternatively by a turbine wheel or by a 14 horse-power engine, were seen at work, and their efficiency especially admired, some of the party recalling the economical engine seen by them some years ago in their excursion to Balmoral. Driving to Cumberland Lodge, the residence of the Ranger, H.R.H. Prince Christian, the royal Vine, believed to be the largest in the world, was visited. It is a cutting from that at Hampton Court, and at the time of this visit bore 1750 bunches. The carriages then crossed Smith's lawn, where the statue of the Prince Consort presented to the Queen by the women of Her empire is situated, and entered on the most beautiful portion of the drive, that skirting the shores of Virginia Water. We naturally regretted that we could not see the Rhododendrons in blossom; but alighting near the ruins brought from Tripoli in 1817 we thought, as we saw the self-sown Firs, Elders and Sycamores springing from the granite capitals and friezes, as two days later we thought at Beaulieu, that our landscape gardeners might well substitute ruined walls for many of the atrocities supposed to be

rockeries. Close to the ruins are some fine old Yews and Cedars. At Belvidere Fort a welcome cup of tea awaited the party, and here we loyally celebrated our visit by planting a young specimen tree of *Abies Albertiana*, brought specially from Edinburgh for the purpose. The most notable part of the return drive to Windsor was the Long Walk with its 2½ miles of avenue, formed by 1,652 Elms in two rows, 30 feet apart, planted in 1680. Part of this avenue is being gradually replaced by Oak; but the trees are at present hardly visible among the coniferous nurseries.

The annual dinner of the society was held at the White Hart Hotel, Windsor, under the presidency of Mr. John Methven.

(To be continued.)

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

AGE OF THE TULIP TREE.—Will some of our readers kindly inform "J. C." at what age the Tulip tree (*Liriodendron tulipa*) usually commences to blossom under the most favourable circumstances?



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	Above (+) or below (—) the Mean for the week ending August 12.	ACCUMULATED.			More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.						Below 42° difference from Mean since January 1, 1893.
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.					
0	4 + 116	0	+ 478	— 57	3	138	23.6	20	25	
1	4 + 130	0	+ 288	— 21	4	113	14.6	28	32	
2	4 + 147	0	+ 320	— 62	2	98	12.5	38	36	
3	4 + 162	0	+ 410	— 37	2	97	12.0	50	43	
4	6 + 163	0	+ 537	— 47	1	96	12.1	48	41	
5	4 + 165	0	+ 456	— 43	4	90	11.9	56	45	
6	4 + 137	0	+ 426	— 63	1	111	20.8	23	36	
7	6 + 160	0	+ 573	— 91	0 aver	101	15.6	36	37	
8	5 + 157	0	+ 602	— 70	3	94	17.9	36	48	
9	5 + 144	0	+ 477	— 104	8	120	18.9	33	32	
10	6 + 160	0	+ 533	— 100	6	108	18.0	32	35	
"	4 + 169	0	+ 684	— 52	2	99	13.5	72	56	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 12, is furnished from the Meteorological Office:—

"The weather was almost continuously fine on our extreme southern and south-eastern coasts, but in all other parts of the kingdom it was less settled—showers falling rather frequently over England, a great deal of rain in the extreme western and northern districts. Sharp thunderstorms occurred at nearly all stations late on the 9th or early on the 10th; those experienced in the north of Ireland being exceptionally severe. During the latter part of the week the atmosphere was very close and oppressive.

"The temperature was above the mean in all districts, the excess ranging from 6° in the 'Midland Counties,' 'England, N.W.,' and 'Ireland, S.,' to 4° in most other parts of the kingdom. The highest of the maxima were recorded either on the 8th or 9th, when they ranged from 85° to 86° in most parts of 'England,' to 80° in 'Scotland, E.' and 'Ireland, N.,' and 78° in 'Ireland, S.' The lowest of the minima were registered during the early morning of the 6th, when the thermometer fell to between 35° and 37° in Scotland, to 39° in the Midland Counties, and to between 40° and 43° in most other districts. In the Channel Islands, however, the lowest reading was 50°, and in 'Ireland, S.,' 53°. During the greater part of the week the nightly minima were high; those recorded during the last few days being 60° and upwards.

"The rainfall exceeded the mean in 'England, E.,' 'Scotland, W.,' and both the Irish districts, and just equalled it in 'England, N.W.,' in all other districts there was a deficit. The rainfall experienced during the thunderstorms was very heavy in places, notably at some stations in the north of Ireland and England, and at Cambridge—the latter fall seems to have been very local.

"The bright sunshine exceeded the mean in nearly all districts, the percentage of the possible duration ranging from 23 to 28 in Scotland, from 31 to 33 in Ireland, and 35 to 36 over England. In the Channel Islands the percentage was as high as 72°."

STATE HONOURS.—The public recognition of the services of several men distinguished in science, art, and literature, brings into prominence the fact that exactly similar honours are conferred upon successful men of business, municipal dignitaries, and upon unsuccessful party politicians. We do not question the fact that some recognition is due to the latter classes, but it is absurd to put them on the same level with men who have achieved distinction on intellectual grounds. If discrimination is not to be exercised, it would be better to be without State honours.

SIR JOSEPH GILBERT.—We are glad to be able to announce that the Queen has conferred the honour of Knighthood on this distinguished chemist and experimentalist.

MARKETS.

COVENT GARDEN, August 17.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, &c.]

MARKET heavily supplied with all classes of goods, prices being practically ruled by buyers. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Oranges, per case ... 20 0-30 0
Cobs, per 100 lb. ... 25 0- ...	Peaches, per doz. ... 1 0-6 0
Filberts, per 100 lb. ... 25 0- ...	Pine-apples, St. Michael ... 2 0-5 0
Grapes, per lb. ... 0 9-1 6	Plums, p. half-sieve, 1 6-2 6
Lemons, per case ... 18 0-30 0	

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Orchids:—
Aster, dozen bun. ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Aster (French), bun. 0 9-1 3	Odontoglossum
Bouvardia, per bun. 0 6-1 0	crispum, 12 blms. 2 0-8 0
Calceolaria, doz. bun. 4 0-6 0	Pelargoniums, scar-
Carnation, doz. bun. 4 0-9 0	let, p. 12 bun. 3 0-6 0
dozen blooms 1 0-3 0	— 12 sprays ... 0 6-0 9
Cornflower, 12 bun. 1 0-2 0	Poppy, doz. bunches 1 6-4 0
Eucharis, per dozen 3 0-4 0	Primula, dble. p. bun. 0 6-1 0
Gardenia, per dozen 2 0-4 0	Pyrethrum, 12 bun. 2 0-4 0
Heliotrope, 12 sprays 0 3-0 4	Roses, doz. bunches 3 0-8 0
Lilium lancifolium,	— Tea, per dozen 0 6-2 0
p. doz. blooms 2 0-4 0	— coloured, dozen 2 0-4 0
— Harrisii, p. doz. 2 0-5 0	— yellow (Maré-
Maiden Hair Fern,	chale), per doz. 1 6-6 0
12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-1 6
Marguerite, 12 bun. 1 6-3 0	Stocks, per bunch ... 0 4-0 6
Mignonette, 12 bun. 2 0-4 0	Sunflower, various,
Myosotis, 12 bunches 2 0-3 0	dozen bunches ... 2 0-6 0
Peas, Sweet, various,	Sweet Sultan, 12 bun. 2 0-4 0
doz. bunches ... 3 0-6 0	Tuberose, 12 blms. 0 4-0 6
Pansy, per doz. bun. 1 0-2 0	

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 6- ...	Mushrooms, punnet 2 0-
Beet, red, per dozen 2 0-3 0	Mustard and Cress,
Carrots, per bunch ... 0 4-0 6	punnet ... 0 4- ...
Cauliflowers, each ... 0 3-0 6	Parsley, per bunch ... 0 3-0 6
Cucumbers, each ... 0 2-0 6	Shallots, per lb. ... 0 6- ...
Endive, per dozen ... 2 0-3 0	Tomatoes, per lb. ... 0 6-0 9
Herbs, per bunch ... 0 9-1 0	Turnips, per bunch ... 0 4-0 6
Lettuces, per doz. ... 1 6-2 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Heliotrope, per doz. 4 0-6 0
Aspidistra, per doz. 15 0-30 0	Hydrangea, per doz. 12 0-24 0
— specimen, each 7 6-21 0	Ivy Geranium, doz. 4 0-8 0
Asters, dozen pots ... 4 0-8 0	Lilium Harrisii ... 18 0-24 0
Balsams, per doz. ... 4 0-6 0	— lancifolium, doz. 12 0-18 0
Campanula, per doz. 6 0-12 0	Lobelia, per doz. ... 3 0-6 0
Cockscombs, per doz. 4 0-6 0	Marguerite, per doz. 6 0-12 0
Cyperus, per dozen 4 0-10 0	Mignonette, per doz.
Dracena, each ... 1 0-5 0	pots 4 0-6 0
Ferns, various, doz. 4 0-9 0	Nasturtium, p. doz. 4 0-6 0
Ferns, small, per	Palma, various, each 10 6-84 0
100 ... 4 0-6 0	— specimens, each 10 6-84 0
Ficus elastica, each 1 6-7 6	Pelargonium, p. doz. 6 0-12 0
Foliage plants, doz. 12 0-42 0	— scarlet, p. doz. 3 0-6 0
Fuchsia, per doz. ... 6 0-9 0	

POTATOS.

Arrivals are still very heavy and demand limited, except for finest samples, which realise 5s. 6d. to 6s. 6d. Ordinary samples hard to clear, except at very low prices. *J. B. Thomas.*

SEEDS.

LONDON: August 16.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that there is a strong demand for seeds for present use. French Trifolium remains unchanged, but English seed, both early and late, commands higher prices. For imported Italian Rye-grass, which is much dearer, there is a good enquiry. The trade for winter Tares, which show good quality, is good. Rye is good and cheap. Mustard is in strong demand, but very scarce and dear. Sowing Rape seed meets a steady inquiry. The trade for Canary seed during the past week has been meagre, prices unchanged. Hemp seed firm. Linseed neglected. Other articles show no quotable variation.

FRUITS AND VEGETABLES.

BOROUGH: August 15.—Quotations:—Cabbages, 3s. to 4s. per tally; Parsley, 1s. 6d.; Carrots, 2s. to 4s.; Turnips, 2s. 6d. to 4s. per dozen bunches; Onions, Egyptian, 5s. to 5s. 6d. per cwt.; Plums, 2s. to 3s. per half-sieve; Apples, 1s. 6d. to 3s. 6d. per bushel.

SPITALFIELDS: August 15.—Quotations:—Cabbages, 3s. to 4s. per tally; Turnips, 2s. 6d. to 4s.; Carrots, 2s. to 4s. per dozen bunches; Onions, Egyptian, 5s. to 5s. 6d. per cwt.; Plums, 2s. to 2s. 6d. per half-sieve; Apples, 1s. 6d. to 3s. 6d. per bushel.

FARRINGDON: Aug. 16.—Quotations:—Parsley, 1s. 6d.; Carrots, 2s. to 4s.; Turnips, 2s. 6d. to 4s. per dozen bunches; Cabbages, 3s. to 4s. per tally; pickling do., 2s. per dozen; Egyptian Onions, 5s. to 5s. 6d. per cwt.; Cucumbers, outdoor, 4d. to 6d. per dozen; do., frame, 1s. 9d. to 2s. 3d. do.; Marrows, 9d. to 1s. per dozen.

FARRINGDON: Aug. 17.—Quotations:—Apples, Manx Codlins, 2s. 6d. per bushel; Pears, William, 4s. to 5s. do.; Grapes, 5d. per pound; Tomatoes, 2d. do.; Plums, 2s. to 2s. 6d. per 28 lb.; Nuts, Kent, 4d. per lb.; Melons, 6s. per case.

POTATOS.

BOROUGH: August 15.—Quotations are from 4s. 8d. to 7s. per cwt.

SPITALFIELDS: August 15.—Quotations are from 4s. 6d. to 7s. per cwt.

FARRINGDON: August 17.—Quotations:—Hebrons, white, 90s. to 110s.; do., red, 90s. to 95s.; Cole's Favourite, 90s. to 100s. per ton.

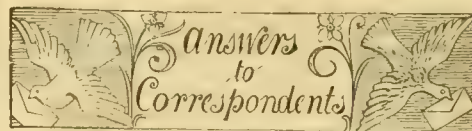
LONDON AVERAGES: August 16.—Hebrons, 90s. to 120s.; Magnums, 80s. to 100s.; Snowdrops, 95s. to 110s.; Regents, 75s. to 85s. per ton; other kinds, 4s. 6d. to 5s. 6d. per cwt.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending August 12, and for the corresponding period last year:—1893: Wheat, 26s. 3d.; Barley, 21s. 11d.; Oats, 20s. 6d. 1892: Wheat, 29s. 11d.; Barley, 23s. 9d.; Oats, 21s. 5d.

HAY.

Averages.—The following are the averages of prices at the principal metropolitan markets during the past week:—Clover, prime, 130s. to 167s.; new, do., 115s. to 130s.; inferior, do., 100s. to 120s.; hay, best, 145s. to 165s.; inferior, do., 90s. to 100s.; new, mixture, 115s. to 130s.; and straw, 80s. to 50s. per load.



AMYGDALUS NANA: M. F.—We are greatly obliged, and shall probably figure the specimen, which we have rarely if ever seen before.

APPLE MAGGOT OR CODLIN MOTH: P. G. Scrape off all the old bark in winter, burn the scrapings. Wash the scraped tree with petroleum emulsion. Paris Green is too dangerous for general use.

CATTLEYA ROOTS THICKENING: W. W. We may be in a better position to advise you if you send us a specimen of the roots affected.

DAHLIA: M. A. S. The union, Siamese-twin fashion, of two Dahlia stalks is not very uncommon. We thank you for your excellent sketch.

EXAMINATIONS AT THE ROYAL HORTICULTURAL SOCIETY: Interested. Your questions would have been better addressed to the Secretary of the Royal Horticultural Society. (1) The questions that were set were published in several, if not in all, the gardening journals. See *Gardeners' Chronicle*, March 18 last, p. 33. (2) The candidates got their instruction where and how they could. Some had advantages in this respect, others had none beyond their own energy and intelligence—the best of all advantages.

FRUIT TREES: Richmond. A heavy application of weak manure-water will certainly do good to the old Apple trees; more especially if they are bearing heavily. Being on turf, the latter should be stabbed with a digging-fork all over as far as the branches extend, and more as approach is made to the circumference, the best roots being thereabouts. If the soil is found to be very dry, a watering may be afforded with clean water first. Too much stimulus to growth at this season would result in late growth, which might not get matured. In the winter, two or three manurial waterings should be afforded the trees.

INSECTS: J. B., Marseilles. The "Cattleya-fly," *Isosoma orchidearum*, a small Hymenopterous insect.—*Loadstone.* Your loam is infested with wireworms. The best thing would be to discard the soil and get fresh, but the worms can be killed with salt if well mixed with the soil, or by gas lime; or the turf could be baked before it is used.

LEAF: J. O. The shrivelling of the leaf arises, perhaps, from frost, or from excessive radiation.

MEALY-BUG: J. R. H. Mealy-bug is often troublesome, but we can hardly imagine it being allowed to "completely spoil two Orchid-houses and kill a Tacsonia." Bug upon Orchids may be eradicated by constant sponging with soft-soap and water, which for the more tender species will be quite strong enough to use; but upon others and the more robust kinds a weak solution of Fir-tree oil or other insecticide will be safe if used in no stronger solution than the directions issued therewith warrant. If there are other climbers in such bad condition as the Tacsonia was, they should be taken down and syringed with a solution of paraffin at the rate of a quarter of a pint to 4 gallons of water, with plenty of soap added. Keep the whole well mixed whilst the liquid is being used, and in the winter cut hard back to the old wood, and make a clean start. The plant you sent is *Nicotiana rustica*.

NAMES OF FRUITS: A. B. The Pear you sent was too far decayed to be recognisable.—*X.* Your box was broken in the post, and so you can best imagine the condition of the Peaches.—Other correspondents must please to consult our next issue.

NAMES OF PLANTS: Many correspondents must wait till next week.—*A. M. D. 1.* *Cymbidium giganteum*; 2, *Cypripedium Sedeni*; 3, *Oncidium Lanceanum*.—*T. S.* *Atriplex hortensis*, or Orache, the red variety. The leaves are used as Spinach.—*J. R. H.* *Nicotiana rustica*.—*E. R. 1.* Siberian Crab; 2, *Nicandra physaloides*; 3, *Chenopodium polyspermum*; 4, *Epimedium sp.*; 5, *Campanula speculum*, Venus' Looking-glass.—*J. C. 1.* Pent-

stemon gentianoides; 2, Solidago virga aurea; 3, Sidalcea candida; 4, Achillea Ptarmica, double; 5, Echinops Retro; 6, Gnaphalium sp.—J. C. Gypsophila paniculata.—J. H. Polygonum Sachalinense.—W. R. C. Linaria vulgaris.—J. E. 1, Stenactis speciosa; 2, Chrysanthemum lacustre; 3, Veronica spicata; 4, Helianthus rigidus; 5, Hemerocallis fulva.—B. W. L. 1, Polygonum Fagopyrum (Buckwheat); 2, Saxifraga aizoides; 3, Arundo Phragmites (common Reed); 4, Erigeron canadense; 5, Oxalis corniculata; 6, Hieracium aurantiacum.—G. T. It is impossible to speak with certainty, but we think it may be Cupressus funebris.—B. & Sons. Statice sinuata.—Miss A. N. Melilotus officinalis, a weed if you like, but a very handsome one, and a very useful one for forage. There used to be plenty of it on the railway banks near Forest Hill.—G. H. S. 1, Cuphea platycentra; 2, Hedychium Gardnerianum; 3, Bomarea, next week; 4, next week; 5, Bignonia grandiflora; 6, Abelia floribunda; 7, Eryngium; 8, Euphorbia Lathyris caper spurge.—Herb. Helleborus viridis, very poisonous.

PEACH LEAVES: J. G. The appearances are probably due to the sun shining on the leaves when sprinkled with dew drops or water from the hose.

RATING: E. B. In the Worthing Appeal Case it was decided by Mr. Justice Day, and approved by Mr. Justice Wills, that the houses there referred to were market gardens in the meaning of the Act, notwithstanding that they had walls and a roof. They were therefore only liable to be rated at one-fourth of the rateable value, but this does not refer to the poor-rate. For further particulars we would refer you to the Nursery and Seed Trade Association.

ROSE MARÉCHAL NIEL: R. F. Your Rose has certainly behaved very well; but, such persistent blooming will not tend to longevity. Seeing that you have to use your house for different purposes, the Rose will accommodate itself to continual forcing; but, the bud will come, though possibly not for a few years.

SWEDES: G. H. The swellings on the root are due to a slime fungus (Plasmodiophora Brassicae). Do not grow the Turnips on the same land for several years. Burn all the affected plants.

TOMATOS: Enquirer. There is no disease in the leaves sent, and they are damping off from too much moisture and too little ventilation. A very common mistake. M. C. C.—J. S. Too common, the result of the growth of a fungus, Cladosporium fulvum, often figured and described in the *Gardeners' Chronicle*. Spray with Bordeaux Mixture early in the season. Burn the affected fruits.

WIREWORMS: H. F. E.—About 10 cwt. of gas lime would be sufficient for each acre. The ground must be clear of crops at the time of dressing, and for six weeks afterwards. Use fresh lime, and you can have nothing better.

COMMUNICATIONS RECEIVED.—Shropshire Horticultural Society.—W. W.—A. E. S.—A. F. W.—Loadstone.—Riviera.—W. L. and C. Waters should address the Publisher another time.—Maidenhead Hort. Soc.—W. W.—A. & N.—Riviera.—W. M. D.—C. T. D.—J. J. W.—J. U.—E. B.—J. D.—F. V. D.

PHOTOGRAPHS RECEIVED WITH THANKS.—T. F. (next week).

SPECIMENS RECEIVED.—W. B. V.—T. C.—H. W. S.—A. B. B.—A. McDonald.—W. H.—C. L.—Ancient.—W. B. & Sons.—G. H. S.—C. M. R.—Anxious.

LARGELY INCREASED CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are also reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and is preserved for reference in all the principal Libraries.

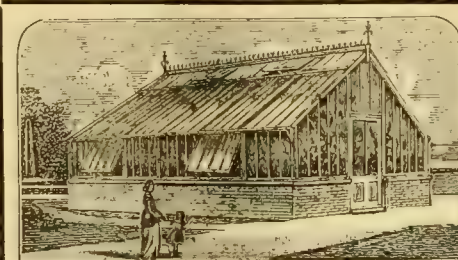


21oz. and 15oz. FOREIGN, of above sizes, in boxes of 100 feet & 200 feet super ENGLISH GLASS, cut to buyers' sizes, at lowest prices delivered free & sound in the country, in quantity.

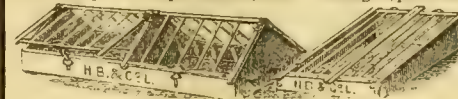
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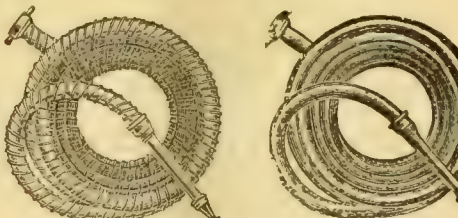


THIS GREENHOUSE erected and heated complete, in any part of the country, best materials only, workmanship guaranteed, 25 ft. by 12 ft., £50; 30 ft. by 15 ft., £70. Brickwork excepted. For particulars, see our Catalogue, post-free.



Superior Portable Frames, large stock ready for immediate use, well made, painted four coats, glazed with 21-oz. glass, carriage paid:—1-light frame, 4 x 6, 36s. 6d.; 2-light frame, 6 x 8, 58s.; 3-light frame, 12 x 6, 85s. 6d. Span-roof Frames, 9 x 5, £3 15s.; 12 x 6, £5; 16 x 6, £7 10s. Can send off same day as ordered.

HARDY BRUIN & CO., Street, LEICESTER



POTTER'S WIRE-ARMOURED HOSE.
Prices of 60-foot lengths (fitted with Brass Nozzle, Branch Pipe, Rose, and Jet).

ARMOURED.		PLAIN.	
The Excelsior Wire-armoured Hose secures a PERFECT grip, will not uncoil when cut at any part, stands enormous pressure, and wears for years.		Unkinkable smooth surface Hose, will not crack, is made of pure rubber and canvas. Quality guaranteed.	
Diam.	PRICES. s. d.	Diam.	PRICES. s. d.
1-in. best quality	36 3	1-in. specially cheap	19 3
1-in. extra stout quality	43 7	1-in. best quality	21 5
1-in. best quality	45 0	1-in. extra stout quality	27 5
1-in. extra stout quality	52 0	1-in. best quality	23 0
1-in. best quality	52 0	1-in. extra stout quality	33 0
1-in. extra stout quality	60 7	1-in. best quality	33 0
		1-in. extra stout quality	40 10

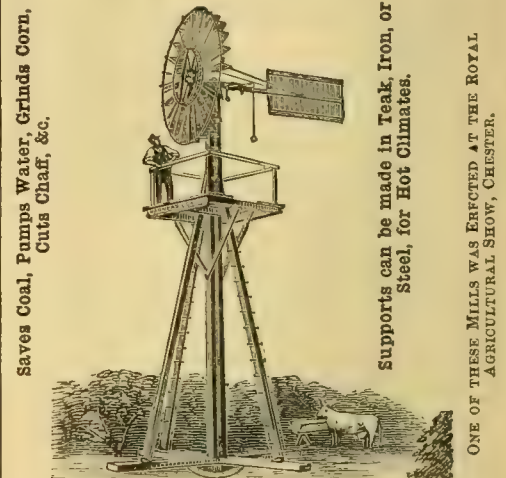
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ROBERT WARNER & CO.'S
WINDMILLS.

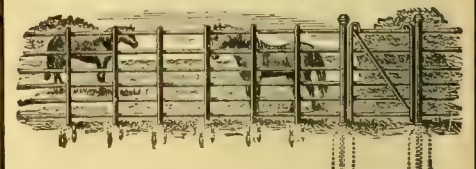


Prices from £25, including Pump and Timber Supports.
May 27, 1893, The Dell, Englefield Green, Surrey.
ROBERT WARNER & CO., Engineers, 27, Jewin Crescent, E.C.
Dear Sirs,—It affords me much pleasure to inform you the 25 ft. Annular Sail Windmill, on 40 feet timbers, working a set of 3 in. x 9 in. stroke treble pumps, that you fixed here for Baron Schröder, is giving very great satisfaction, pumping the water through 4,224 feet of pipe, to a vertical height of about 80 feet. I must also express my thorough appreciation of the manner in which the whole of the work has been so successfully carried out.—Yours faithfully,
H. BALLANTINE, Head Gardener to Baron Schröder.
NUMEROUS OTHER TESTIMONIALS ON APPLICATION TO
27, JEWIN CRESCENT, CRIPPLEGATE, LONDON, E.C.
Engineering Works, WALTON-ON-THE-NAZE, ESSEX.

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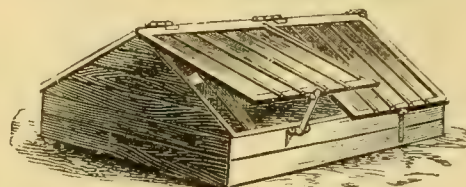
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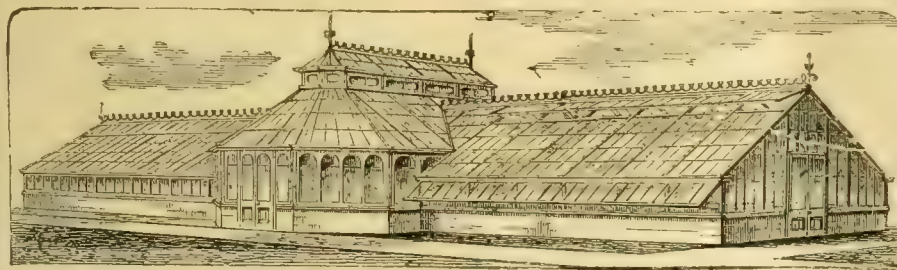
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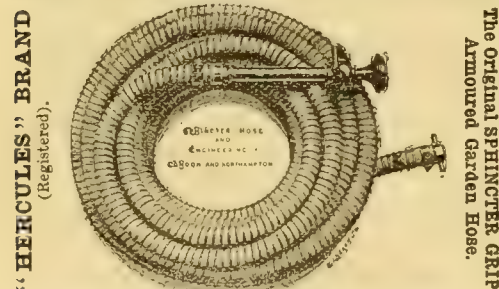
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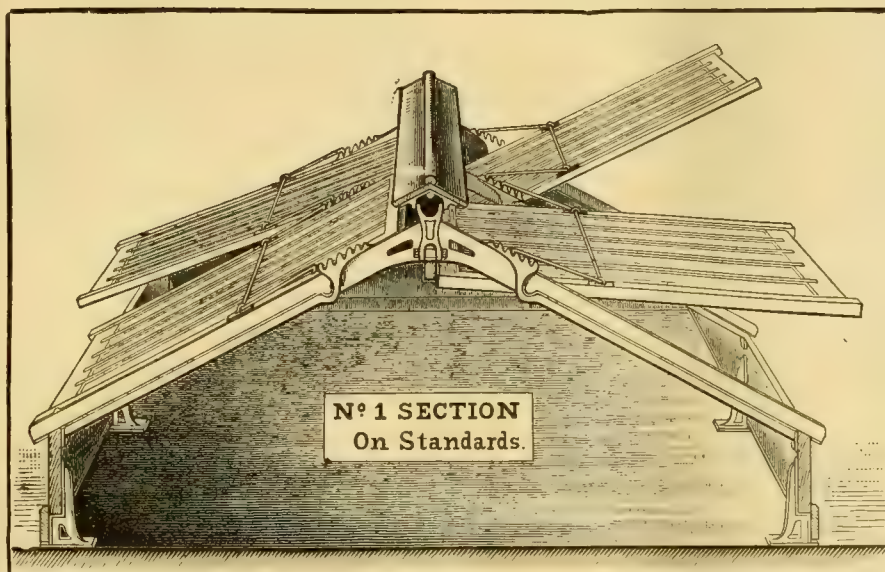
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ESTABLISHED 1841. No. 2748.

No. 348.—VOL. XIV. {THIRD SERIES.}

SATURDAY, AUGUST 26, 1893.

{Regt. as a Newspaper.} PRICE 3d. POST-FREE, 3½d

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15,000 Erica hyemalis	5,000 Solanum capsicastrum,
2,000 " graecis	well berried
1,000 " Cavendishii	1,000 Adiantum cuneatum
1,000 " coccinea minor	1,000 Lomaria gibba
600 " Caffra	800 Tea Roses, in pots
All well set with bloom-buds.	2,000 Bouvardias, of sorts
2,000 Ampelopsis Veitchii	1,000 Palms, of sorts
1,500 Epacris to name	1,000 Cyclamen persicum
1,000 Boronia megastigma,	600 Crotons, beautifully
and others	coloured
1,000 Grevillea robusta	500 Aralia Sieboldii
4,000 Genistas	

With a large quantity of young Erica Cavendishii, Aralia Sieboldii, Ferns, and Genistas, all in 60-pots for growing on.

The Stock is now on view. Catalogues may be had on the Premises; at the Seed Warehouse, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on FRIDAY NEXT, September 1, at half-past 12 o'clock, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., by order of Messrs. F. Sander & Co., St. Albans—

IMPORTED and ESTABLISHED ORCHIDS,

Among which will be found the following:—

DENDROBIUM NOBILE,

Sander's grand type, the finest in cultivation.

ONCIDIUM GRAVESIANUM. CYMBIDIUM EBURNEUM.

Two grand Orchids for market.

ONCIDIUM JONESIANUM, in superb condition.

VANDA CERULEA, the Blue Vanda.

SACCOLABUM GIGANTEUM LONGISSIMA.

EPIDENDRUM GOSSEFFIANUM.

CYPRIPEDIUM NICHOLSONIANUM.

VICTORIA MARLE.

DENDROBIUM DENSIFLORUM.

CATTLEYA LABIATA, in the finest condition.

DENDROBIUM FIMBRIATUM OCULATUM.

CYMBIDIUM PENDULUM.

DENDROBIUM FORMOSUM GIGANTEUM.

CATASETUM SPECIES, probably new.

DENDROBIUM MOSCHATUM.

CALANTHE OCULATA, Sander's variety.

CYPRIPEDIUM CHAMBERLANIANUM.

CATTLEYA GRANULOSA.

AERIDES SAVAGEANUM.

CYPRIPEDIUM CONCOLOR.

DENDROBIUM DRACONIS.

ODONTOGLOSSUM PULCHELLUM GRANDIFLORUM.

CELOGYNE ELATA.

" ASPERATA.

DATYNA GRANDIS.

DENDROBIUM O'BRIENIANUM.

PLATYCLINUS SPECIES, &c.

On view morning of Sale, and Catalogues had.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G.E.R.
TWENTY-FIFTH ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller, to SELL by AUCTION, on the Premises, the Brimsdown Nurseries, Green Street, Enfield Highway, N., on THURSDAY, September 14, at 11 o'clock punctually, there being upwards of 1300 lots to sell in one day. About

50,000 STOVE and GREENHOUSE PLANTS, remarkably well-grown, mostly in 48-pots, and fit for immediate sale, consisting of

20,000 WINTER-FLOWERING HEATHS, including Hyemalis graecis, Cavendishii, hybrida, &c.

2000 Tree and other Carnations, Duke of Fife, Duke of Clarence, Winter Cheer, &c.

1500 Tea Roses, in pots, The Brie, Niphotos, C. Mermet, Climbing Niphotos, Marechal Niel, Gloire de Dijon, Perle des Jardins, W. A. Richardson, &c.

1000 Ampelopsis Veitchii, Clematis Jackmannii, &c.

600 Epacris, to name

500 Crotons, beautifully coloured

3000 Ferns, Adiantums, Polypodiums, Pteris, Lomarias, &c.

3000 Bouvardias, leading sorts

5000 Genistas fragrans

6000 Palms, in variety

1000 Zonal Geraniums, new and leading varieties

2000 Cyprus distans

1000 Passifloras

1000 Grevillea robusta

Large quantities of Ficus, Aspidistras, Anthuriums, Poinsettias, Plumbagos, Callas, Avarias, Abutilons, New Hybrid Crasulads, Stove Climbers, Dipladenias of sorts, Bougainvilleas, Allamandas, Stephanotis, &c.

May be viewed any day prior to the sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 & 68, Cheapside, London, E.C.

N.B.—The whole of the stock is in first-rate condition. The Ericas are specially well set for flower, and the Solanums unusually well-berried, and are undoubtedly the finest lot offered at this nursery for many years.

Lea Bridge Road Nurseries, Leyton, E.

GREAT ANNUAL TRADE SALE of WINTER-FLOWERING HEATHS and GREENHOUSE PLANTS, by order of Mr. J. Fraser.

MESSRS. PROTHEROE AND MORRIS respectfully give notice that the above ANNUAL SALE will take place on WEDNESDAY, September 13.

Longlands Park Nursery, Sidcup, Kent.

GREAT ANNUAL TRADE SALE, by order of Messrs. Gregory & Evans.

MESSRS. PROTHEROE AND MORRIS beg to announce that the above ANNUAL SALE will take place on FRIDAY, September 15.

WANTED TO RENT, a NURSERY, not less than 500 feet of Glass.

H. H. C. FULLER, High Street, North Finchley, N.

To Nurserymen, Florists, and Gentlemen Gardeners.

FOR SALE, a LARGE NURSERY, in the

North of London, covering over 3 Acres of Land, comprising 21 Greenhouses, ranging in length from 40 to 160 feet, seven of which are planted with Vines now bearing a splendid crop of Grapes; all heated with the best system of hot-water engineering. Some hundreds of casts of pots, from 60 to 16; splendid ranges of pits; size of light, 6 feet by 4 feet, of which there are about 300. Water laid on so that a 60-feet hose will reach any part of the land. A fine Stock of Belding and Decorative Plants, Ferns, &c. Stable and Coach-house; splendid Market Van, nearly new, to carry 2 tons. A good substantial DWELLING-HOUSE, in thorough repair, with Bath-room and hot-water throughout. Potting-shed, Tools, and all the necessary appliances appertaining to a first-class Nursery. The whole to be sold as a going concern.

For further information, apply to Mr. READ, Vine Nursery, Down's Road, Clapton.

TO BE SOLD, a NURSERY, containing Ten Houses, all heated and well-stocked, at a Ground-rent of £10 per annum.

W. J., Silver Hall Nursery, Isleworth.

FOR SALE, a SMALL NURSERY, 5 Green-houses, &c. Fitted by Hot Water. Stock and Trade, &c.—Apply, W. H., The Nursery, Park Row, Greenwich, S.E.

FREEHOLD VILLA for SALE, with four large Greenhouses and two Conservatories. New property. Close to three Railway Stations.

Apply to Owner, Durant's Road, Ponders End, Middlesex.

LONDON, S.E.—FOR SALE, a compact NURSERY, FLORIST, and JOBBING BUSINESS, Five Greenhouses, and half an acre of Land. Rent, £10 per annum. Full particulars of H., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

NURSERY and FLORIST BUSINESS for SALE, in one of the best Suburbs in the South of London, comprising 500-feet run of Houses, all well Heated; and Pits. Lease, 90 years to run, at £15 10s. Ground-rent. Good business done in Plants and Jobbing. Price for the whole, £800.—CITO, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

OLD-ESTABLISHED NURSERY

BUSINESS for SALE, same hands over forty years. Nine Acres of Stock, several Greenhouses, good Dwelling-house. Capital required to include Stock, Horses, Carts, Lease, Goodwill, &c. about £3000. Exceptional opportunity for purchasing. A thoroughly genuine concern.

Further particulars of Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.

TO LET, a SMALL NURSERY, with 6 Green-houses, all heated with Hot Water. Stock at valuation. Good connection of Jobbing Work. Low rents.—Apply, Shakspeare Nursery, Shakspeare Road, Herne Hill, S.E.

TO FLORISTS.—TO LET, large GARDEN, 3 Glasshouses, largest 67 by 18 feet. Stocked. Rent £8. Close to Market Town.—PATTISON, Bower Lane, Kilpin Hill, Dewsbury Moor, Dewsbury.

Datchet, Bucks.

GARDEN GROUND to be LET, from Michaelmas next, about 2½ Acres, walled in with Greenhouses, Lights, Potting Sheds, Stable and Coachhouse, Fruit-room, and small Yard.—Messrs. BUCKLAND and SONS, Land Agents, 4, Bloomsbury Square, London, W.C.; and Windsor.

Important to Market Gardeners.

GARDENS to be LET WITHOUT RENT.

—The Kitchen Gardens and Glass belonging to a Gentleman's Mansion, 11 miles from London, and one minute from station on the L. & N.W.R., to be let without rent, in return for the Pleasure Grounds being kept in order. Can be seen at any time by appointment.

Address, X. M., 41, Wellington Street, Strand, W.C.

City of Peterborough.

To NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS.

TO BE LET, with Immediate or Michaelmas

Possession, the well-known, old-established Peterborough BUSINESS, comprising a NURSERY FARM of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the town. Also, a superior SEED SHOP and STORE, in a first class central position; and a FLOWER-STAND on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, FOX and VERGETTE, Estate Agents, Peterborough.

OLD CRIMSON CLOVE CARNATIONS.

—Strong-rooted layers. Germania, the best yellow, well-rooted, in large 60's.

JOHNSON and CO., The Nurseries, Hampton.

STRAWBERRY RUNNERS!—The best,

ready for delivery! John Ruskin, Competitor, Noble, Margaret, and Sir Joseph Paxton, 2s. 6d. per 100, or 22s. 6d. per 1000. Orders sent in rotation by—

R. CHURCHMAN, The Vineries, Wokingham, Berks.

Clematis Stanley, Hook.

W. THOMPSON, SEEDSMAN, Ipswich, begs

to offer fresh Seed of this handsome and remarkable non-climbing species, with large purple flowers. Very showy, both in flower and fruit, and should be sown at once.

Price 1s. 6d. and 2s. 6d. per packet.

CARNATIONS for WINTER-BLOOMING.

—Mrs. R. Hole, 25s.; Gloire de Nancy, 25s.; Raby, 18s.; Crimson Clove, 14s. per 100, all strong plants, ready now. Cuttings of good named sorts, 2s. 6d. per 100. HEUCHERA SANGUINEA CLUMPS, 3s. 6d. per dozen, 25s. per 100; STATICE LATIFOLIA, 4s. per dozen, 25s. per 100; COREOPSIS GRANDIFLORA (true), 4s. per dozen, 25s. per 100.

CAVAYE and CO., 33, Western Street, Brighton.

WANTED.

PEA, Cannell's Wonder	English	EUPHORBIA JACQUINE-FLORA
STRAWBERRY, Queen, and others	British	CARNATION, John Barnett
VIOLET's, Victoria Regina		HOVEA CELINII
" Welliana		FUCHSIA, Minnie Banks
" Rawson's White		" Enoch Arden
" Neapolitan		" Mrs. Mein
		TROPEOLUM VESUVIUS

H. CANNELL and SONS, Swanley, Kent.

EXHIBITION.

NATIONAL CHRYSANTHEMUM SOCIETY.—EXHIBITION OF EARLY CHRYSANTHEMUMS, with DAHLIAS, GLADIOLI, &c., at the Royal Aquarium, Westminster, September 8, 7, and 8. Schedules of Prizes on application to—
RICHARD DEAN, Hon. Secretary and Superintendent, Ranelagh Road, Ealing, W.

FOR ORCHIDS AND GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

A COLLECTION of PALMS to be Disposed of; height from 2 to 5 feet. Inspection invited.
G. GROVES, Temple House Gardens, Great Marlow, Bucks.

DOUBLE WHITE NARCISSUS.—Splendid strain, 17s. 6d. per 1000, on rail. Sample 50 free by post for 1s. 9d.; 100 for 3s. Cash in all cases with order.
J. J. CLARK, Goldstone, Brighton.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown Stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, of sorts; ADIANTUM CUNEATUM and other FERNS; PALMS, in variety; GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES, in pots; BORONIAS megastigma and heterophylla. VINES in pots, &c., &c. An inspection is invited.

Trade CATALOGUES forwarded on application.
The ANNUAL SALE by AUCTION will be held on TUESDAY, September 12.
Burnt Ash Road Nurseries, Lee, S. E.

ALL GOODS DELIVERED FREE on board, London, Antwerp, Rotterdam. £ s. d.
LILUM HARRISII, 5—7 in. circ., per 1000 bulbs. 6 5 0
" " 7—9 in. " " " 11 10 0
" " 9—11 in. " " " 22 10 0
" AURATUM, 7—9 in. " " " 8 7 6
" " 9—11 in. " " " 11 10 0
TUBEROSES, Pearl, select 4—6½ in. " " 1 10 0
" " seconde, 3—4 in. " " 1 2 6
Prices for GLADIOLUS, &c., on application.
F. W. O. SCHMITZ AND CO., Jersey City, N.J., U.S.A.

ROMNEYA COULTERI.

We have a large stock of this rare and beautiful hardy flowering plant. Commendatory notices have appeared in the Horticultural Journals, and its effectiveness in the Shrubbery is very marked.

Prices, 3s. 6d. and 5s. each; extra strong, 7s. 6d.
DICKSONS, Ltd., The Nurseries, Chester.

FRENCH AND DUTCH BULBS.

ROMAN HYACINTHS,
PAPER WHITE NARCISSUS,
LILUM CANDIDUM, &c.

NAMED and BEDDING HYACINTHS,
TULIPS, CROCUS, SNOWDROPS,
DAFFODILS, &c.

ALL ORDERS CARRIAGE PAID.
CATALOGUES now ready, Post Free on application.

LITTLE & BALLANTYNE,
Queen's Seedsmen, CARLISLE.

NO MORE

LONG PRICES
FOR
BULBS
ONLY
FINEST QUALITY,
J.R. PEARSON & SONS
CHILWELL NURSERIES,
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CATALOGUES
FREE

WEBBS' EARLY BULBS.

THE FINEST ROOTS OF THE SEASON.

ROMAN HYACINTHS:

Early White, extra large bulbs ... 2s. 0d. per doz.
Ditto ditto ... 16s. 0d. per 100.
Ditto fine bulbs ... 1s. 9d. per doz.
Ditto ditto ... 12s. 6d. per 100.
Ditto smaller bulbs ... 1s. 6d. per doz.
Ditto ditto ... 10s. 6d. per 100.

POLYANTHUS NARCISSUS:

Double Roman ... 3d. each, 1s. 6d. per doz.
Paper White ... 3d. each, 1s. 6d. per doz.

DUC VAN THOL TULIPS:

SINGLE, scarlet ... 1s. per doz., 6s. per 100.
DOUBLE, scarlet and yellow 9d. per doz., 5s. per 100.

WEBBS' BULB CATALOGUE,
Beautifully Illustrated, Gratis and Post-free.

Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales,

WORDSLEY, STOURBRIDGE.

SPECIALITY—
FOLIAGE PLANTS
ICETON'S
LARGE PALMS.
PUTNEY, S.W.

NEW IMPORTATION OF ORCHIDS

From BRAZIL and BORNEO.

PARTICULARS POST-FREE ON APPLICATION.
INSPECTION INVITED.

A. H. GRIMSDITCH, Importer,
5, CLAYTON SQUARE, LIVERPOOL.

CARNATIONS.

Our extensive collections embrace all the best and newest varieties in the various sections of BORDER, CLOVE, and YELLOW GROUND CARNATIONS and PICOTEES, SHOW CARNATIONS and PICOTEES, LACED and SELF PINKS, TREE and WINTER-FLOWERING CARNATIONS, including the now famous "DEEP PINK" and other Malmesons.

Our Handbook, "Carnations and their Culture," with full Descriptive CATALOGUE, can be had free on application.

LAING & MATHER, Nurserymen,
KELSO-ON-TWEED.

FERNS! FERNS!!—Trade.—Greenhouse and

Stove, 25 saleable sorts, in 2½-in. pots, 12s. per 100; 10 best market sorts, in 4½s. 6s. per doz.; stores, 6s. per 100. Large Adiantum cuneatum, value in fronds, 6s. and 8s. per doz. Cyperus, Aralias, Grevilleas, in 4½s. good value, 6s. per dozen. Palms, Ficus, & Dracenas, 1s. each. Hydrangeas, Pelargoniums, Marguerites, 9d. each; in 4½s. 1s. each. P. tremula and A. cuneatum, for making large plants quickly, 16s. and 20s. per 100, well packed, put on rail free for cash with order.—J. SMITH, London Fern Nurseries, Loughboro' Junction, London, S.W.

VIOLA CUTTINGS.—We are now supplying excellent Cuttings from our unrivalled Collection of Named Varieties at the following very moderate rates. These Cuttings will root readily in a cold frame, and make fine plants for October or Spring planting:—1000 Cuttings, in 100 very fine varieties, for Bedding or Exhibition purposes, £2 10s.; 500 Cuttings, in 50 varieties, £1 10s.; 100 Cuttings, in 25 varieties, 6s. 6d.; 50 Cuttings, in 25 varieties, 4s.; 25 Cuttings, in 12 varieties, 2s. 6d. All Carriage Free. Each variety separately named.—DOBBIE AND CO., Florists, Rothesay.

STRAWBERRIES, strong, well-rooted Plants. —Noble, 4s. per 100; President, 3s. per 100. Price per 1000 on application.

WALLFLOWERS.—Belvoir Castle, best yellow, strong plants, 2s. 6d. per 100; Covent Garden Red, 2s. 6d. per 100; Double German, 3s. 6d. per 100.

SAXIFRAGA PYRAMIDALIS, very fine, 8s. per 100. Many other varieties to offer.

MYOSOTIS ALPESTRIS, 1s. per 100.

W. KERSHAW, The Nurseries, Bingley, Yorks.

EARL'S COURT EXHIBITION.

Exhibition of
GARDENING and FORESTRY

THE GARDEN of LONDON.

SEPTEMBER 13 and 14.

GREAT SHOW OF DAHLIAS, AUTUMN FLOWERS, AND FRUIT.

Classes (Open and Amateur) for Collections of Stove and Greenhouse Flowers, Dahlias, Chrysanthemums, &c.; and Peaches, Nectarines, Apples, and Plums.

Meritorious Exhibits not named in the Schedule will be recognised.

Prizes, Medals, and Certificates awarded for every Show. All applications for entries, schedules, regulations, and further information should be addressed to Mr. H. E. MILNER, the Chairman, at the Offices of the Exhibition, Earl's Court, S.W.

ADMISSION to the Exhibition Building, Flower Show, and the Central and Western Gardens, and to one of 2000 free seats at Captain Boyton's World's Water Show, 1s.

OPEN DAILY, from 11 A.M. to 11 P.M.

NOTHING NOTHING

is too small.

is too much trouble.

THE TRADE SUPPLIED.

E. D. SHUTTLEWORTH & CO., Ltd.,
(Albert Nurseries)

PECKHAM RYE, LONDON, S.E.,
and FLEET, HANTS.

CHEAP OFFER.

100,000 KENTIAS, all sizes.
50,000 ARECAS, all sizes.
2,000 ASPARAGUS PLUMOSA NANA.
1,000 TENUISSIMA.

Dracenas, Crotons, Pandanus Veitchii, and Ficus elastica. Prices on application.
G. BETHELL, Whiteley's Nurseries, Hillingdon Heath, Uxbridge.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem,
Holland. Wholesale CATALOGUE now ready, and may be had free on application to—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

THE BEST
BULBS

AT CHEAPEST RATES.

EXTENSIVE COLLECTIONS OF
Hyacinths, Tulips,
Narcissi, Snowdrops,
Lillies, Crocuses, Scillas,
ETC., ETC.

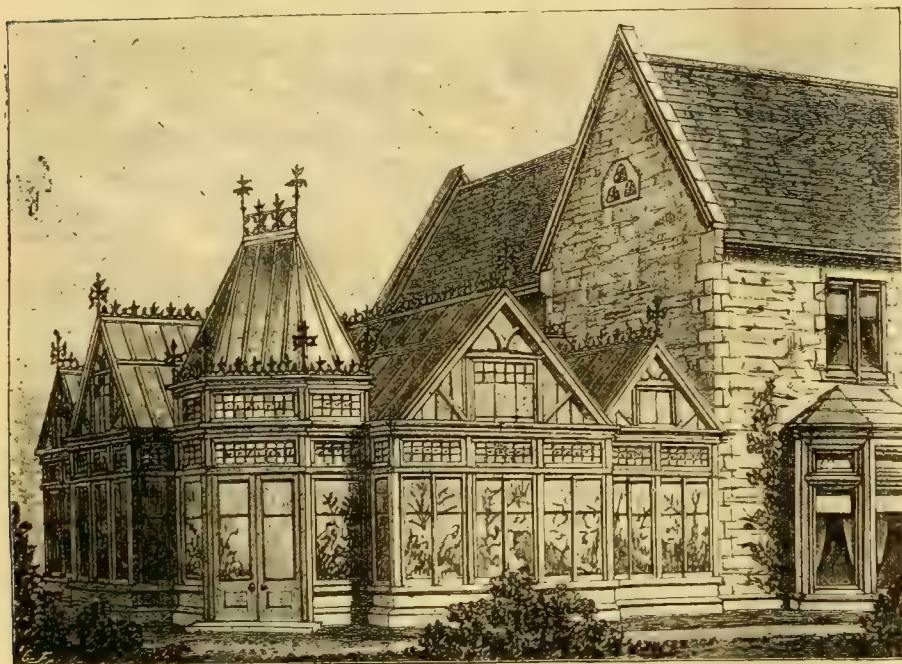
ALL THOROUGHLY RIPENED.
Descriptive Catalogue, No. 428, Post Free on Application.

Delivered Free by Rail or Parcel Post.

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J. WEEKS AND CO., F.R.H.S.,

CHELSEA, LONDON, S.W.



CONSERVATORIES DESIGNED and BUILT to
SUIT ADJACENT BUILDINGS.

ORCHID HOUSES WITH ALL LATEST
IMPROVEMENTS.

PLANT AND FRUIT HOUSES FOR ALL
PURPOSES.

*All Materials and Workmanship of the
Best Quality.*

ALL KINDS of BOILERS, our Improved and
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The Patent "DUPLEX" Upright
Tubular Boilers of all Sizes, conditionally
GUARANTEED FOR TEN YEARS.

J. WEEKS & CO., F.R.H.S.,

*Horticultural Builders and Hot-Water
Apparatus Manufacturers,*

CHELSEA, LONDON, S.W.

KENT—THE GARDEN OF ENGLAND.

VISITORS TO THE GRAND SHOW,

AGRICULTURAL HALL, AUGUST 29 TO SEPT. 1,

SHOULD EXAMINE

GEO. BUNYARD & CO.'S

KENTISH FRUIT AND TREES,

And the Nurseries at Maidstone are now most interesting with fine examples of
Fruit and Fruit Tree Culture.—An Inspection is invited.

TRAINS FROM LONDON BY SOUTH-EASTERN AND LONDON AND CHATHAM RAILS.

THE OLD NURSERIES, MAIDSTONE.

ESTABLISHED 1796.

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ALL WHO WANT
Really Good Bulbs at Moderate Prices
SHOULD SEND TO
MR. ROBERT SYDENHAM
BRISTOL ROAD,
BIRMINGHAM.

LIST, POST-FREE, ON APPLICATION.

Mr. S. feels sure the quality will maintain his high reputation for the past eight years, and the prices, when quality is considered, will be found to compare favourably with any English or Dutch house in the Trade.

NOW READY FOR DELIVERY.
GRAND ROMAN HYACINTHS, 15s. per 100; usual size, 11s. per 100.
FREESIA REFRACTA ALBA, extra size, 7s. per 100; usual size, 4s. per 100.
SCARLET DUC VAN THOL TULIPS, 2s. 9d. per 100; 25s. per 1000.
LILIUM HARRISII, 7 to 9 inches round, 6s. per dozen; 9 to 11 inches, 10s. per dozen.

Orders over £3, five per cent. discount; orders over £5, ten per cent. discount.

CARRIAGE AND PACKING FREE.
SPECIAL PRICES for LARGE QUANTITIES.
GARDENERS LIBERALLY DEALT WITH.



BULBS.

WM. PAUL & SON
WALTHAM CROSS, HERTS,

Respectfully invite attention to their large Stock of the above, which is unsurpassed in quality, and very moderate in price.

BULBS for FORCING
include White Roman, and early-flowering Named Hyacinths, Tulips in variety, large-flowered Paper-white and other Narcissus, Liliun Harrisii, and L. candidum; Gladiolus The Bride, Freesias, Lily of the Valley, Jonquils, Scillas, &c.

BULBS for PLANTING
comprise Hyacinths, Tulips, Narcissus and Daffodils, Crocus, Snowdrops, Jonquils, Lilies, Anemones, Iris, and many others in great variety.

Priced descriptive Catalogue post-free on application.

LECTURE ON THE HYACINTH,

Delivered by MR. WM. PAUL before the Royal Horticultural Society, price 6d., post free.
"The best and fullest account of this plant (the Hyacinth) which I have met with is by a famous horticulturist—Mr. PAUL, of Waltham Cross."—*Darwin's Animals and Plants under Domestication.*

ESTABLISHED 1832.

No Connection with any other Firm of the same name.

ANT. ROOZEN & SON'S CATALOGUE for 1893 OF DUTCH CAPE and EXOTIC BULBS

(WITH CULTURAL DIRECTIONS)

Is NOW READY, and will be sent, Post Free, on application to themselves direct at

OVERVEEN, near **HAARLEM**, **HOLLAND**,
OR TO THEIR GENERAL AGENTS,

Messrs. MERTENS & Co.,
3, CROSS LANE, LONDON, E.C.

DUTCH BULBS! FRENCH BULBS! AND ENGLISH BULBS!

See our Special Wholesale CATALOGUE of BULBS.
Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILIUMS, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,
SEED AND BULB MERCHANTS,
EXETER STREET, STRAND, LONDON, W.C.

INTENDING PLANTERS
Are invited to inspect the very extensive & Superior Stock of
**HARDILY-GROWN
FOREST, FRUIT,
AND ALL OTHER
TREES & PLANTS, ROSES,
EVERGREENS, &c.,**
Now growing in the **CHESTER NURSERIES**—
10 min. walk of either of the Chester Stations.
All Particulars on Application to
DICKSONS Nurseries
(Limited) 400 Acres, **CHESTER**



WM. CUTBUSH & SON, Nurserymen and Seed Merchants,
Highgate Nurseries, London, N., and Barnet, Herts.

**CUTBUSH'S MILL-
TRACK MUSHROOM SPAWN.**
—Everyone can readily grow Mushrooms, and by using this Spawn will ensure success. All growers speak in high praise of the quality. Numerous Testimonials. None genuine unless in sealed packages, and printed cultural directions enclosed with our signature attached.
Price, 6s. per bushel, 1s. extra for package; or, 1s. per cake, free per Parcel Post.



THE Gardeners' Chronicle.

SATURDAY, AUGUST 26, 1893.

INGLEBY MANOR.

LORD DE L'ISLE AND DUDLEY must indeed be considered a favourite of fortune, for in addition to historic Penshurst, with its associations of Sir Philip Sidney, he owns in Ingleby Manor an estate that can be traced back to Keltic times, for one or two of the hills near still bear Keltic-sounding names. Ingleby Manor is in the parish of Ingleby-Greenhow, near by the town of Stokesley in Cleveland. From old documents it appears that the parish was anciently called Ingleby-juxta-Greenhow, evidencing that Greenhow was the more important place of the two then. Now there are only a few scattered houses there; but, as our readers will see from what follows, it was important enough in its days of prosperity to have different owners to Ingleby and Battersby.

At the Conquest, Ingleby was attached to the Manor of Stokesley, which was held by a Norman Baron named Hanuud or Hanuart. In the twelfth century the Balliols were established at Stokesley, and leased Ingleby to Adam de Ingleby. He was such a devout adherent of the church, that he handed over Ingleby Church, and the Church of Kirby-in-Cleveland, to Whitby Abbey, in whose possession they remained till the dissolution.

In the thirteenth century, Ingleby and Battersby passed by marriage to the Eures, Ada, only daughter of Hugh de Balliol, marrying the third Baron Warkworth. In 1619, Sir David Foulis purchased the lands of Ingleby and Battersby. He was the third son of James Foulis, laird of Collingtoun, or Colinton, as it is now called, and was in such high favour with "King James the Sext," that he came in the king's train, and was created first knight and then baronet. He was cofferer or treasurer to Charles I. He seems to have early opposed the arbitrary measures of the king, for in 1633 for resisting the commission issued to compel gentlemen to compound for neglecting to receive the honour of knighthood, he was brought before the Star Chamber, deprived of his official positions, committed to the Fleet, and fined £8000. His son and heir was mulcted to the extent of £500, and likewise imprisoned.

Greenhow was not held by the Manor of Stokesley, but at an early date became the property of the Meynells. From the Meynells it passed to the D'Arcies. Thomas Lord Darcy was beheaded for taking part in the Pilgrimage of Grace. The estate was, of course, forfeited to the Crown. When Sir David Foulis purchased Ingleby and Battersby, James granted Greenhow at the same time, who thus became owner of the whole parish. So Ingleby-juxta-Greenhow became Ingleby-Greenhow. The succession of baronets continued to the present century. By the marriage of Mary, only daughter and sole-heiress of Sir William Foulis, the Ingleby estates became the property of Lord de L'Isle and Dudley.

A short walk from the station through the pretty Yorkshire village, leads to the church. The terrible effects of a recent severe lashing of hail were visible in the blackened drooping leaves of the Potatoes, and the clean holes cut in the Rhubarb leaves. The low Ivy-clad church of St. Andrew is very ancient. The architecture is early Norman, and some portions of the original church remain to the present day, including the chancel arch and the font. The carvings of the capitals of the Norman pillars are very grotesque, "comprising semi-human heads and busts, wild-beast and vegetable forms." Just opposite the church begins an avenue of sturdy old Elms, 200 years old, which leads to Ingleby Manor. It is fully a quarter of a mile long, and curves at the end. A stone pavement is laid the whole way on the left-hand side to the manor. It has evidently been laid down as a path to some abbey, for fragments of it are found in fields at some distance. The stones are quite worn in the middle by the tread of feet during so many centuries.

The first view of the manor gives the idea that it is an Elizabethan house. The original house was in the style of the present front, with a quadrangle in the centre. The additions to the old house erected in the previous century entirely altered its Elizabethan character, and made the house "respectable and commodious." It is the only part of the estate that does not savour of antiquity. It would appear that the entrance, to which the drive curves round a grass lawn with a clump of Rhododendrons in the middle, and then is continued round the corner of the house to a quadrangle, formed by the house, kitchen buildings, and stables, is the front one. It has been so till lately, but now the recently-erected porch entrance jutting out from the wall is used as the main entrance, more fitted for a church than a dwelling-house. The green sward had to be sacrificed, a broad gravel expanse had to be made, which ends suddenly at the hedge, for the carriages to turn round and drive past the old entrance.

The manor is built on a grassy plateau, now much reduced, which stands on the edge of a woody valley, with a trout-stream trickling at the bottom, now discovered, now hidden by the undergrowth. The opposite side is covered by a wood of massive wide-spreading trees, while the nearer side has an undergrowth of Rhododendrons and Foxgloves. On the east and south sides, the park comes close to the house. The park is open just near the house, owing to the trees being at considerable distances from one another, but they thicken in the distance. To the left is a clump of tall Oaks on a ridge. The flower-garden is between the house and the kitchen-garden, separated from it by an Ivy-clad wall. The garden is small, but very bright with old-fashioned flowers and the modern border Carnation.

The kitchen garden is not only useful but ornamental. The low wall that divides it from the flower-garden is covered with old-time Roses, like *centifolia rosea*, and the border on the valley side of the garden is planted with old Roses, chiefly York and Lancaster. The centre walk up to the sundial in the middle of the garden has by its sides a Yew hedge, about a foot high, into which are cut squares. On the other side of the dial, the path is lined with herbaceous borders; the bright colours of the flowers were seen to advantage, owing to the sunny day. Rose trees were frequent in the borders, and were producing some very shapely deep-coloured flowers. Mr. Harrison, the able

gardener, mentioned a number of varieties that succeeded best in the ironstone soil. Baronne de Maynard, Madame Louise Leveque, Fisher Holmes, Sénateur Vaisse, Annie Laxton, Maurice Bernardin, Countess of Oxford, Madame Victor Verdier, Etienne Levet, Lady Sheffield, Mabel Morrison, were sorts he mentioned particularly.

Mr. Harrison is also an adept at vegetable growing. Heavy crops of all kinds of culinary vegetable occupied the available space. The spring-sown Onions were a green mass, without a break. In addition to Mona's Pride, and the Ashleaf, Mr. Harrison has discovered an early Potato, White Beauty, which is ready for use nine weeks after planting, and is a tremendous cropper. Bush fruits were loaded with fruit, especially the Black Currants; and there was a good crop of Apples on the young trees.

In conclusion, I must express the great debt I owe to Rev. John Howell, Vicar of Ingleby, who has kindly placed at my disposal the result of his enquiries in the past history of his parish, and which has evidently been a labour of love. *Vagabond*.

NEW OR NOTEWORTHY PLANTS.

SACCOLABIUM MOOREANUM, Rolfe.

A SPECIES introduced with *Dendrobium Phalaenopsis* by Messrs. F. Sander & Co., of St. Albans, which flowered with Mr. F. W. Moore at Glasnevin, and shortly afterwards in the collections of Sir Trevor Lawrence, Burford, Dorking, and C. J. Lucas, Esq., Warnham Court, Horsham. It is allied to *S. minus*, Rchb. f., and bears dense racemes of small rose-coloured flowers tipped with green. *Kew Bulletin*, 1893, p. 64.

ANGELICUM BISTORTUM, Rolfe.

A West African species, collected in the interior of Lagos by H.E. Sir Alfred Moloney, K.C.M.G., which flowered at Kew in January, 1892. It is allied to *A. arcuatum*, Lindl., but has smaller flowers, whose spur is curiously curved into a loop, and its tip remains tightly clasped by the sheathing bract. *Kew Bulletin*, 1893, p. 65.

PLEUROTHALLIS FUBERULA, Rolfe.

A species of unknown origin, which flowered with Mr. F. W. Moore, of Glasnevin, in January last. It bears long racemes of small pubescent green hawthorn-scented flowers. It is allied to *P. univaginata*, Lindl., of the section *Spathaceæ*. *Kew Bulletin*, 1893, p. 169.

BULBOPHYLLUM SPATHACEUM, Rolfe.

Introduced from the Shan States, Burma, by Messrs. Hugh Low & Co., of Clapton, and flowered with Mr. J. O'Brien, of Harrow-on-the-Hill, in July, 1892. It is allied to *B. apodum*, Hook. f., and has a dense erect raceme of light yellow flowers with a darker lip. *Kew Bulletin*, 1893, p. 170.

BULBOPHYLLUM VIRIDE, Rolfe.

A small species from West Africa, sent to Kew by Philip Crowley, Esq., Waddon House, Croydon, in December, 1890. It is near *B. intertextum*, Lindl., and bears slender racemes of light green flowers with a pair of small eye-like spots at the base of the lip. *Kew Bulletin*, 1893, p. 170.

ERIA ALBIFLORA, Rolfe.

A small Nilghiri species which flowered both with Mr. J. O'Brien, of Harrow-on-the-Hill, and at Kew. It is allied to *E. articulata*, Lindl., of the section *Bryobium*, and bears a lax raceme of small white flowers. *Kew Bulletin*, 1893, p. 170.

COLOGYNE TENUIS, Rolfe.

A species belonging to the small section *Flexuosæ*, which was introduced from Borneo by Messrs. Linden, L'Horticulture Internationale, Brussels, and

flowered in their establishment in August, 1892. It has light buff-coloured flowers. *Kew Bulletin*, 1893, p. 171.

EPIDENDRUM PUMILUM, Rolfe.

A pretty little Costa Rican species, introduced by Messrs. F. Sander & Co., of St. Albans, and flowered in their establishment in January, 1890. It approaches *E. Endresii*, Rchb. f., in habit, but has light greenish-yellow flowers, with an orange-yellow crest on the lip. *Kew Bulletin*, 1893, p. 171.

POLYSTACHYA IMBRICATA, Rolfe.

An East African species, from the Zambesi district, which flowered with Mr. J. O'Brien, of Harrow-on-the-Hill, in August, 1891. It has light yellow flowers, with a pink pubescent lip, and is allied to *P. ensifolia*, Lindl. *Kew Bulletin*, 1893, p. 172.

ONCIDIUM LUTEUM, Rolfe.

A species of unknown origin, which flowered in the collection of Sir Trevor Lawrence, of Burford, Dorking, in June, 1892. It is allied to *O. chrysopyramis*, Rchb. f., of the section *Rostrata*, and bears a lax panicle of light yellow flowers. *Kew Bulletin*, 1893, p. 172.

LUSIA AMESIANA, Rolfe.

This is the species figured in our columns on July 8 last, p. 32, fig. 8. It is a native of the Southern Shan States, and was imported with *Vanda Kimballiana*, Rchb. f., by Messrs. Hugh Low & Co., of Clapton, with whom it flowered in June, 1891. It has also appeared with Messrs. F. Sander & Co., of St. Albans. *Kew Bulletin*, 1893, p. 172.

HABENARIA CINNABARINA, Rolfe.

A distinct little *Habenaria*, introduced from Madagascar together with *Disa incarnata*, Lindl., and *Cynorchis grandiflora*, Ridl., by Messrs. W. L. Lewis & Co., of Southgate. It has cinnabar-orange flowers, with a few red spots on the back of the sepals, and thus resemble those of the *Disa* just named in colour. *Kew Bulletin*, 1893, p. 173.

THE RESULTS OF PINCHING AND PRUNING.

WE take the following extracts from a paper contributed by M. Fernand Lequet fils to the *Revue Horticole* for August 1. We have omitted his physiological theories, which are open to question, but his practical deductions are interesting in relation to the discussion going on in our columns. Speaking of pruning, the author says: "This operation is termed (according to the season, during the time of growth at which it is performed), summer-pruning, and during the resting time winter-pruning. When a plant grows spontaneously and freely in the open air, there is no need to subject it to pruning, as the roots and branches grow in due proportions one to another. But under natural conditions, flowering does not occur until after a certain time, and not always regularly, nor at any fixed season.

"We will instance as examples unpruned Apple trees, which do not bloom until they are eight or ten years old, and only bloom well once in two years. As another illustration, we may mention soft-wooded plants, which, if not pinched, cannot be made to flower at any particular season that may be desired. Pruning has for special object the forwarding, retarding, and regulating of the time of blooming. Only it is of primary importance to know how each species develops its branches and its flower-buds, if these latter occur on the new or on last year's wood, and especially if, after the removal of the branch, the stock has the power of elongating and bearing flower in its season. The final object of pruning is to cause the premature development of certain branches, to hasten the development of the tree. Such is the theory, and in practice it is borne out in a most satisfactory manner.

"Referring now only to pinching. This operation should always be effected by nipping off the tip of the shoot between the nails of the thumb and index finger. This is why only the present year's branches

are pinched. Consequently, annuals or biennials are never pruned except with the fingers, while hardy woody plants can be pinched or cut, according as their soft or hard parts are treated. It must not be thought that the operation can be better done by cutting with a knife than by pinching with the nail, as this is not the case.

"With Melons, the male blooms are formed on the branches of the first and second generation, and it is on those of a more advanced generation that the female flowers appear. The pinching of the herbaceous parts having been accomplished early has resulted in the development of the branches of the third generation sooner than if the plant had been left to itself. In growing Melons, pruning or rather pinching (the word matters little), is considered essential to success. Fecundation is thus no longer a matter of chance. It is the same with Cucumbers. Consequent upon pinching, the roots become shorter and thicker, and grow closer together, forming a better ball. To the multiplication of branches there ensues a corresponding development of the underground parts.

"In the orchard the practice of pinching has the same effects as in the kitchen garden. Pears grafted on the free stock which give leaves without flowers, are much improved by long pruning in winter, and short pinching in summer. All the branches which are left unpinched on a Cherry tree, are so many fruit-bearing branches; this fact has become an aphorism since the careful experiments of the late M. Hardy. There ensues an immediate swelling of buds which become converted into flower-buds in the same year.

"In the Apricot, the pinched part flowers and fruits in the same or in the succeeding year. Repeated pinchings on the Peach gave identical results. This satisfactory plan was also inaugurated by M. Hardy. In the south the Lemon on espaliers, and subjected to pinching, becomes covered with buds. M. A. Constant, who recommended this method, has often counted on one flowering spray clusters of twenty-five to thirty flowers, or even more. By treating Oranges thus, we also achieved great success. A Pomegranate was induced to flower abundantly by pinching the tips of the new shoots in spring when they had attained a certain length. Repeated pinchings increase to a remarkable degree the fertility of Fig trees in pots, all the checked branches bore some, and several of them many fruits in the axils of their leaves in a manner unusual when these plants are left to themselves. Pinching the Vine-tendrils from the end of May to June 10 has often served to produce Grapes, and we have proved this again this year. Short (severe) or long (moderate) pinching allows light to be diffused freely among all the branches; this process hastens also the fertility of the trees, and tends to produce finer and better-flavoured fruit.

"Pinching may be recommended almost fearlessly to the florist, either in his houses or in the garden. See what horticulturists do who cultivate soft-wooded plants. They are always busy pinching their Petunias, Heliotropes, Verbenas, Cypheas, Anthemis, Pelargoniums, Calceolarias, Salvias, Malvas, Rubus rosæflorus, &c., and thus they obtain dwarf spreading plants of good habit flowering abundantly. They do not at all hesitate to use this process for tuberous Begonias, as by its use they induce a less straggling habit, and if the flowers are rather smaller, they are of better substance, more lasting, brighter in colouring, and the blossoming is more uninterrupted. But novices can scarcely make up their minds thus to cut these plants. They remain incredulous of what they have not themselves seen.

"By means of pinching, the time of flowering is altered, that is to say, the blooming is retarded on plants on which it naturally would occur much earlier; witness the Bouvardia, Stevia, Ageratum, Coronillas, and Genista floribunda, the blooming of which occurs in the beginning of summer, and which is profitably deferred until winter. Thus there is the enjoyment of a first and second season. For all these species pinching is an indispensable adjunct to

the spring-pruning. And, as all delay in Nature is not necessarily so much time lost, but a period of latent labour, the flowers, which are not obtained at once, are accumulating at compound interest. If Azaleas, Camellias, and Rhododendrons can, without loss of bloom, be thus treated, it will be easy to arrange the time of flowering without having recourse, as do the Belgians now, to the inconvenient plan of keeping the plants in ice-houses. On the contrary, plants which do not submit to pruning, either because they do not push well afterwards, or because the wood dies back, as in the case of Pleroma, Centradenia, and Rogiera, accommodate themselves well to pinching.

"Applied to New Holland plants, moderate pinching induces the development of axillary buds, and the plants grow into a rounded form, covered with flowers, thus combining beauty of detail with beauty of general effect. We may mention Corraea, Pimelia, Pultenaea, Leschenaultia, Boronia, Brachysema, Templetonia, Tremandra, Lithospermum, Prostanthera, &c. Whilst we cannot by pinching secure a globular-shape, we at least avoid lanky, drawn, and hideously-trained examples. How many good plants are spoiled by neglect by being left untended for some time. It is true that pinching is not altogether compatible with rapid cultivation. We will speak of that now. It is thus, not to cite always the same examples, that fine specimens of Libonia and Erica are trained, that Ligustrum Quihoui pinched, flowers twice in one season, and that Ligustrum sinense or Hoteia pinched, does not flower again in the year. Similarly Bengal Roses, if pinched, flower twice in the season, while Provins Roses pinched do not flower at all. In the garden similar results follow pinching. In April and May dwarf your Phlox, Aster, Pentstemon, Phygellus, Antirrhinums, Dahlias, and Dielytras, and the clumps will become dwarf, bushy, and very free-flowering. Chrysanthemums will even stand successive pinchings later on until the month of July, a time when the shoots can still form buds before the frosts come. In those Roses which, like Gloire de Dijon, develop long scrambling branches by the side of their stronger boughs, when the blossoming at the ends of the shoots is over, take away the terminal bud, and the best nourished branches will bear flowers. From this point of view it may be remarked that with florists who deal in cut flowers, the plants flower for a longer time or more continuously than amongst other nurserymen. This second flowering depends upon the fact that the ordinary grower who sells his plant only allows the inflorescence to wither and dry up, and that the florists who cut the flowers before these are fully expanded, economise the strength of their plants which produce a second crop on the old stems (Boutons d'argent), or on the root (Veronicas, Larkspurs). The plants are in this case like good milk cows, whose milk increases under the treatment to which they are subjected.

"Magnolias and Japanese Medlars, which do not bear pruning, bear somewhat sooner under the influence of pinching, as do also Epacris, Alonsoa, Chænostoma, Solanum, Iochroma, Mitraria, Diplacus, Euphorbia Jacquinæflora, Poinsettia pulcherrima, Siphonocarpa, Rondeletia, Heterocentron, Oxacanthus, Siphocampylus, and the gay Plumbago capensis. Further, careful pinching will never be regretted when all the young shoots are tipped with flower, and especially when the plants are arranged in a house at the approach of winter. At the same time, for certain shrubs, such as the Myoporum, which bears leafy pendent clusters studded with myriads of white florets, pinching, if done too late, robs the plants of their special charm. The same remark applies to the Æschynanthus, which like to wave their curious and beautiful flower-branches freely. Neither should such species be pinched as flower at the points, that is to say on one shoot springing from the root, as do notably Cinerarias, herbaceous Calceolarias, and Amaranths (Cockscombs), and whose habit is to form a single large and even cluster. But the difficulty is averted by frequently transplanting and re-potting. Also we must never reason by analogy, but ascertain facts by experiment; one species may

bear pinching well, and its kindred neighbour may give only miserable results.

"Finally, it would be easier to enumerate the species for which pinching is unsuitable, than the many for which it is admirably adapted. Besides causing multiplication of flowers on the branches, it consolidates these latter, renders them more independent, and also enhances their beauty by giving them strength and power, thus improving their habit.

"It seems further as if pinching had a monopoly of developing the beauties of plants, since we have sufficiently shown that without its assistance the blooming is poor. Again, without repeated pinchings Hibiscus Cooperi with variegated leaves, the variegated Fuchsia Darwin, Phyllanthus nivosus, variegated zonal Pelargoniums (Mrs. Pollock, Freak of Nature, &c.), and many others would not produce for our admiration their young shoots which are almost covered with flowers. In fact, so great are the improvements consequent upon this method, that to use a paradoxical expression to pinch is to increase by diminishing."

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM LEEANUM VAR. GIGANTEUM.

A HYBRID raised from C. Spicerianum by pollen of C. insigne. Considered to be the best of all the hybrid Cypripediums yet raised, taking into consideration its freedom of growth, time of flowering (early winter), and lasting qualities. *Reichenbachia*, t. 57.

CŒLOGYNE PANDURATA.

A noble Bornean species, with large flowers, 4 in. in diameter, of a green colour, but with the lip streaked and spotted with black. *Reichenbachia*, t. 58.

SCHOMBURGKIA SANDERIANA.

This handsome species is described by its author, Mr. Rolfe, as allied to S. Humboldtii, but has smaller flowers, with more prominent keels on the lip. The flowers are rosy-carmine. *Reichenbachia*, t. 59.

ONCIDIUM SUPERBIENS.

A species which thrives in a cool-house, a north lean-to being in all respects preferable. It is a species with loose scrambling racemes and large flat flowers, the prevailing colour of which is brown. *Reichenbachia*, t. 60.

DENDROBIUM JOHNSONIE.

A little-known species from New Guinea, sometimes known as D. Macfarlanei, and also as D. niveum, Rolfe, but the name here adopted, proposed by Baron Sir Ferd. von Mueller, has the priority. The flowers are pure white, with some slight purple stains on the side-lobes of the lip, but these are not constant. *Reichenbachia*, t. 61.

LELIO-CATTLEYA HYBRIDA BEHRENSIANA.

A cross between Lælia elegans Schilleriana and Cattleya Loddigesii, raised in Messrs. Sander & Co.'s establishment. It is stated to flower twice annually. *Reichenbachia*, t. 62.

CALANTHES, HYBRID VARIETIES.

1, C. Victoria, has rose-coloured flowers; 2, C. bella, is the offspring of Calanthe vestita Turneri, crossed with C. Veitchii; 3, C. burfordiensis, is the result of a cross between C. rosea or C. Veitchii, and C. vestita rubro-oculata. *Reichenbachia*, t. 63.

CATTLEYA MENDELII QUORNDON-HOUSE VARIETY.

A superb white form of C. labiata, bought for a few shillings as an unproved plant, but which was sold at the Quorndon-house sale for 220 guineas. *Reichenbachia*, t. 64.

NOTES FROM KEW.

BAMBOOS AT KEW.—Visitors who care for Bamboos should not overlook the garden of them near the Rhododendron Dell. This garden has been formed in a sheltered spot, and the collection has

succeeded remarkably well, showing that the Bamboos of hardier kinds may be planted without fear in the open. There are splendid masses of *Bambusa Metake*, the hardiest of the family, and very fine with its rich green broad leafage. *B. Fortunei* is succeeding well; it has deep green leaves, and dense, spreading growth. There are varieties of it: one named *aurea* has rich yellowish foliage, striped with green, an attractive and effective kind. A very good form is named *variegata*, the leaves being narrower than in the species, and boldly striped with creamy white on a green ground, whilst it has also a dense habit of growth. *B. gracilis*, *B. castillonis*, *B. aurea*, *B. plicata* and *B. viridi-glaucescens*, a very graceful and beautiful kind, are well worthy of note. *Arundinaria Simoni*, a Japanese kind, is represented by immense masses, the taller shoots rising fully twenty feet in height. The beautiful *Phyllostachys violacea*, *P. nigra*, and *P. Quiloi* are in vigorous health, whilst there is a noble clump of *P. bambusoides*. The dwarf Bamboos are of much interest, and the large clumps of them in this garden show that they are hardy, and very handsome. One of the best is *Bambusa tessellata*, which is synonymous with *B. Ragamowski*; the leaves are very broad, long, and rich green in colour, with a yellowish longitudinal stripe nearly the whole way down the centre—it is very dwarf and vigorous. *B. nana* and *B. pygmaea* are both very dwarf, the latter of exceptionally dense growth. *B. Veitchii* makes a fine spreading mass, and it is one of the best dwarf Bamboos; the growth is compact, and the leaves broad, whilst they are of a pale green colour.

LILIUM HENRYI.

This beautiful Lily is flowering exceptionally well at Kew. It is one of the finest introductions of recent years, and it is not inapt to call it the yellow-flowered *L. speciosum*. There is great similarity between the two kinds. *L. Henryi*, which is named after its discoverer, Dr. Henry, is a native of Western China, and first bloomed at Kew in 1890. This year the stems have reached quite eight feet in height, and the flowers are produced freely. They are orange yellow, spotted with a reddish colour, and are effective. A bed of it may be seen at the back of the Orchid-house, and it is certainly a Lily that should be in every garden, for it is vigorous, not difficult to grow, very free, and bears flowers of distinct and attractive colour. *V.*

NURSERY NOTES.

MESSRS. T. F. RIVERS AND SON,
SAWBRIDGEWORTH.

Fruit Trees in Pots.—This nursery differs from most in the fact that fruit is grown in the orchard-house. Occasionally some of this finds its way to the exhibitions, but the best place to see it is in its own home. The system of growing fruit for dessert purposes is very suitable for those who have only a small amount of glass, and for amateurs who have plenty of time at their disposal, as a great variety of fruit can be grown in a small house. Cherries, Plums, Pears, Figs, Peaches, and Nectarines may all be accommodated under one roof, and if space permits, the season of each fruit may be prolonged several weeks by choosing suitable varieties; but it has its disadvantages also, one of which is, that such constant attention is required with the water-pot. When, during the summer, the trees are in full growth, they must be examined every two hours, for if once they are allowed to flag, it is impossible to bring the crop to a state of perfection, and most likely some of it will drop off. I very much doubt if this system would pay the market grower so well as if the trees were planted out and trained to trellises in the usual way, although one point must be mentioned in its favour—the houses can easily be emptied after the crop is gathered by placing the trees outside (which is much better for them), and the space can be utilised for other crops until the following spring; on the other

hand, the trees will require renewing oftener than permanent trees do.

Another important matter connected with fruit trees in pots is, that they have only a very limited space in which to search for food, liberal supplies must therefore be given during the growing season. Mr. Rivers makes no secret of this, and in his book, *The Orchard House*, full particulars are given of the mixture he uses as a top-dressing, which consists of equal quantities of horse-droppings and kiln-dust from the malt-house saturated with liquid manure, and turned over a time or two before using, so as to thoroughly incorporate the ingredients. It should be used the next day after mixing, if possible, or it will heat, and a portion of the ammonia will be lost. It is put on as a top-dressing, by placing small pieces of slate round the rim of the pot inside, and leaving just enough room for the water. The greater portion of the manurial properties gets washed down to the roots, and the remainder quickly becomes full of young rootlets, but it is a very strong manure, requiring to be used with great caution, if the liquid manure it is moistened with is of any value; and for greater safety, it would be advisable for beginners to dilute the liquid with water before mixing, and to add some dry loam before turning the heap. In the hands of experienced men it does wonders, but with others it kills the plants. If for any reason this mixture cannot be got, I have found Thomson's Vine Manure very effectual, and easy of application. I have dealt rather fully with this subject of manuring, because much of the success which Messrs. Rivers have in growing such fine fruits on pot-trees is to be attributed to its use, to the unceasing and skilful attention the strong healthy trees receive.

The earliest batch of Peaches and Nectarines started with fire-heat were almost over; a very fine yellow-fleshed seedling Peach alone remained. Strictly speaking, this is a late variety, similar in colour to Salwey, but distinct from it in shape and flavour; the other varieties had been gathered, and the trees plunged outside ready for sale, or for another season's cropping, and a promising lot of young Vines occupied the house. Among them I noticed some half-dozen in fruit, trained to a flat surface by arching two sticks over at the top, and training the Vine up one side, and down the other. These would make fine side-board decorations for a large dining-room.

Another house near this had some large Pears coming on, including Louise Bonne of Jersey, Doyenné du Comice, Conference, Pitmaston Duchess, Souvenir du Congrès, Parrot, &c. I have found most Pears are better-flavoured if they are placed outside a few weeks before they get ripe, but growing them under glass increases their size immensely, and adds much to their appearance. Some nice trees of Plums in pots were growing in this house, the variety being Late Transparent Gage, a fine rich Plum for dessert.

In a house near this one were some pot Vines in fruit, one of which was Black Prince in a 13-inch pot, and the roots allowed to run into a bed of compost under the pot. This Vine was carrying seven very fine bunches, which would average 2 lb. each, and were coloured to perfection. We next entered a range of two long lean-to vineries, containing an enormous crop of Grapes, some of the bunches very large, and the berries swelling up well, with every prospect of a good finish, although I considered the crop on many of the Vines to be extraordinary. These Vines, however, have practically an unlimited root-run outside in a well-drained soil, and a fair sized border inside, where they are liberally fed with soot-water, &c. A new variety to me was growing here under the name of Prunella, and looked promising. The berries were after the style of Madresfield Court, but smaller in the bunch. Another variety seldom met with, called Saint Antony, was growing here. It is a reddish Grape when ripe, and has a peculiar shiny appearance, as if it had been rubbed, and for this cause many would object to it. Among other varieties doing well I noted Gros Maroc, Gros Colmar, Mrs. Pince, Black Hamburgh, Lady Downes, Golden Queen, Alicante, and Madres-

field Court. The somewhat shy-bearing Duke of Buccleuch had made two grand young rods, but was not carrying a heavy crop.

My guide next took me into the later Peach-houses, where some fine young trees were swelling-off good crops, Early Rivers' Nectarine being especially noticeable for its earliness and good colour, one tree in an 11-inch pot was carrying twenty-six fruits, all of which were first-rate specimens, and fit for exhibition. Lord Napier was growing in the same house, but was more than a fortnight behind the other. Dryden and Stanwick Elruge were also looking well, and were earlier than many other kinds, all of which looked well, and were carrying good crops. I was much interested in seeing the original tree of Lord Napier still in good health, and bearing well as a pot tree. Among the Peaches, Early Rivers was ripe, also Hale's Early, and Rivers' Early York, Crimson Galande, and many others were swelling-off good crops. A large number of later varieties were in these houses, and the collection will be well worth a visit in the autumn. In the Cherry-house, which is a low, cool, airy, span-roofed structure, I found the early varieties were over. Among the later kinds I noticed Emperor Francis, Bedford Prolific, Bigarreau Napoleon, Late Black Bigarreau, Monstrueuse de Mezel, Bigarreau Noir de Guben, Géant de Hedelfinger, and Guigne de Winkler, the latter variety had not reached half its size, and is not ripe until September, thus prolonging the season a great length; it is worthy of cultivation for that reason alone, as Cherries are always acceptable. The above, and several others were all growing in pots, sunk in the floor to keep their roots cool, and were carrying heavy crops of fine fruit.

Near this house I noticed some large fruits of Apples and Pears in variety on pot trees. These had been brought forward in the houses, and then plunged outside to make room for other things.

In the open quarters a fine lot of young trees were coming on. Fresh ground is taken in from the farm every year and planted up, so as to give the young stock the best chance. The older part of the nursery is being gradually converted into a fruit farm, and on the day of my visit (July 12), Plum gathering had commenced with Rivers' Early Prolific, of which kind I was informed over 100 tons were sent to the various markets last year. This season also the crop of this kind is very heavy, but owing to the prolonged drought the fruit is small. *W. H. Divers, Ketton Hall Gardens, Stamford, July 12.*

PLANT NOTES.

HABLITZIA TAMNOIDES.

ONE seldom sees a note upon this interesting climber. It makes a pleasant feature in the summer months, when covered with its multitude of small greenish flowers. It is quite hardy, and the best way to plant it is against an old tree stump, which it will mount up to a height of over 10 feet, and then the shoots hang down in graceful profusion, the greenish flowers, through their great abundance, having a charming effect. The growth is vigorous, and the plant continues in bloom for several weeks. There is such a repetition of climbing plants in gardens, that it is worth while to make a note of this *Hablitzia*. Provide at the commencement a well-drained soil, and bear in mind the importance of dryness at the root during the winter, but not in the summer. A mass of it, tumbling over the rougher parts of the rockery or rootery, is very pleasing. Its flowers, if not showy, are quaint. *V.*

PRESTON HALL.

BEING in the vicinity of Maidstone a week or two ago, we took the opportunity of visiting this fine residence, which until about two years ago was the seat of the late H. A. Brassey, Esq., father of the present owner. At that time it was feared that the place would largely share the misfortune that the family then sustained in the death of Mr. Brassey, but although there was a sale

of most of the plants in the green-houses, and indeed, of many other things beside, also attended with a considerable reduction in the working staff of the establishment, we were pleased to find that the general appearance of the grounds and of the houses was considerably better than might have been expected, and there are signs that before very long the place will be as well manned as formerly. The present gardener, Mr. W. Jarman, has had charge for the last eighteen months, and he is to be congratulated upon the condition the whole place

flower garden in the front of the Hall is rather small, and has been purposely placed so that the beds are hidden from the view of the lower windows. A pleasing fountain adds much to the appearance of this flower parterre.

The pleasure-grounds have been well laid out, and present new and pleasing features at every turn. Passing through what used to be a stove, but which now serves the purpose of a show or flower-house, some very finely grown tuberous Begonias of a capital strain attracted attention, as did also

these are generally of the best quality. One of the cool orchard-houses contained a crop of fair Peaches and some excellent Plums; also Lord Napier Nectarines, large and well-coloured.

Peaches are plentiful in other houses, and are bearing first-rate crops. A range about 150 feet long in five divisions, contained many varieties, especially good were Royal George, Noblesse, and Condor. The most interesting plants to be seen in a large number of houses, devoted to plants and fruits, were a very good batch of Crotons, some wonderfully large

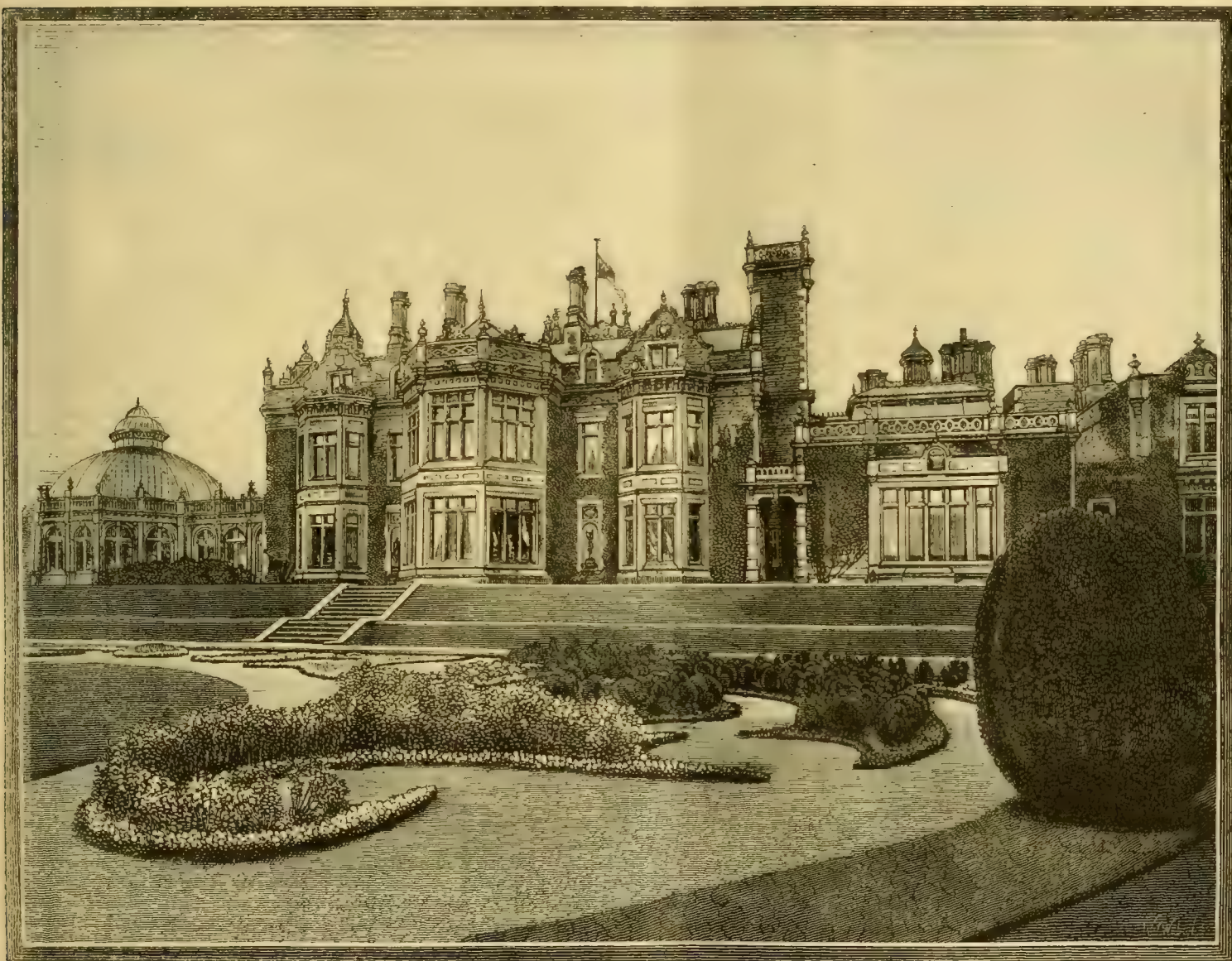


FIG. 43.—VIEW OF PRESTON HALL, MAIDSTONE: GARDEN FRONT.

presents, considering the circumstances under which he has worked.

In the *Gardeners' Chronicle* for October 11, 1884, a detailed description of the establishment was given, together with a photograph, which we now reproduce (fig. 43), showing the garden-front of the house. As there stated, the specimens of Sweet Chestnut, Elm, and Cedar are amongst the finest in this country. The view from the north side of the house across an extensive park, where the deer are gracefully walking, or playfully gambolling in all directions, and beyond, where the curious little village of Aylesford discloses its prettiest features, and where the church stands out in very distinct manner from the background of hills behind it, is one of the most lovely in this pretty county. The

some good plants of *Hydrangea paniculata*. Close to this house is a little Fernery, which has certainly been made the most of, and where the plants, many of which are planted out, appear to be doing very well. There are seven vineries, and they are tolerably good ones, but the Vines are weak and old, and require renewal in each of the houses, and doubtless before long Mr. Jarman—a very successful Vine-grower—will have succeeded in his desire to introduce young canes.

The principal Fig-house is covered by one tree alone, which has been planted against the wall at the back of a lean-to house, and from there is trained down the roof to the front of the house. It is a very large specimen of Brown Turkey, and has often given a crop of over fifty dozens of fruits, and

plants of *Adiantum cuneatum*, and a commendable crop of Melons, each plant bearing about four fruits of medium size.

Outside, on the walls, the crops of Peaches and Nectarines were very good, and the Apples, Pears, Figs, Plums, Cherries, &c., on bushes, and on espaliers were—as is general this season—abundant, though perhaps a little smaller than they should be. The herbaceous borders are well arranged and carefully attended to, and at the time these notes were taken presented an exceptionally bright and interesting picture. There is a very fine rosery in the pleasure-grounds, where the bowers of Roses bore the appearance of luxuriant health, but many waterings and much assistance had been required to preserve them in such condition through so trying a

season as we have experienced this summer. One of the largest and most healthy specimens of Golden Yews to be seen anywhere is close by one of the walks; it is not a perfect pyramid, but it is of excellent colour, and cannot but excite admiration. The above are but a few notes taken during a hurried visit, and for further description of this large and beautiful place we must refer our readers to the issue of the *Gardeners' Chronicle* referred to above.

FLORISTS' FLOWERS.

THE PENTSTEMON.

As a garden-flower the Pentstemon is well known, and at this season of the year it forms a prominent and beautiful object. There is a very rich variety of colour in the flowers, but from the florist's point of view there is still much room for improvement in the size and form of the flowers. The figure of *P. Hartwegi* (gentianoides) in the *Botanical Magazine*, t. 3661, which is the typical form, would not suffer in comparison with some of the named garden varieties. Raisers of new varieties should take pains to fertilise good forms only of distinct colours with the pollen of other distinct varieties, removing the pollen of the seed-bearer in time to prevent self-fertilisation. The more upright-growing *P. Cobaea* would form a good pollen-bearer for varieties of *P. Hartwegi*, as the last-named, I fancy, is the hardier of the two; it would do better as the seed-bearer. A native of Mexico, it is found at an elevation of about 11,500 ft. above the level of the sea, and one would suppose that plants obtained from near the regions of perpetual snow would be quite hardy in England, but this is not generally the case either with Pentstemons, or with the Primulaceæ and other choice plants. If plants are covered all through the winter with snow they are comparatively safe, and when spring comes they start into active growth again; but in our uncertain climate, with alternate frosts, the plants often suffer during the winter, and unless there are a few plants of each variety under glass, to make good the losses, it is not safe to leave them in the open borders. The garden varieties grow very vigorously if they are planted in deep well-manured soil, and they continue to flower well into the month of October, and sometimes as late as November; but to obtain continuous flowering, the seed pods must be taken off as they form. Mulching and ample supplies of water will be a great help to the plants, by imparting deeper colour to the leaves, and more fully-developed flowers. Cuttings can readily be obtained by taking off some of the side-growths in September, and planting them in fine sandy soil. They do very well in handlights, which should be kept close and shaded until the cuttings are rooted, when air may be freely admitted. The glass seems to be ample protection, even from severe frost. The plants should be kept rather dry, and in that state very little protection is needed to keep them safe. If it is intended to save seed, the pods must be gathered as they ripen, or much of it will be lost.

THE PHLOX.

This is a more favoured flower than the Pentstemon, and, when well grown, it is a very beautiful occupant of the flower garden in autumn; not only do the plants make a brilliant display, but the perfume is delightful. Like the Pentstemon, they require a rich deep soil and plenty of water. The late-flowering section has been brought to a very high standard of excellence; the spikes are compact and well formed, the blooms being quite circular, and of very rich and lovely colours.

This will be a good season to save seed, and some should be gathered from the best varieties. If the florist had no seedlings to flower, and no expectation of obtaining something superior to the varieties already in existence, the great charm of growing florists' flowers would be lost. The object is to get them better than their parents, either in colour or form. The seed should be well dried, and kept in a dry place until the first week in February,

when it may be sown in seed pans, and be placed in a hot-bed to vegetate. The young plants soon appear, and when they are large enough prick them off in boxes about 3 inches apart. Inure them to the open air, and plant them out about a foot asunder in good soil. Spring-struck cuttings grown on and planted in 5 and 6-in. pots are excellent for furnishing the greenhouse at this season of the year. These pot plants may afterwards be planted out in beds.

THE GLADIOLUS.

This is one of the most useful of garden flowers, not only is it conspicuous by its beauty in the flower garden, but the spikes are excellent for cutting purposes. When cutting they should be taken as soon as two or three flowers are open at the base; the remainder of the flowers will open if the spikes are put in water. I have urged the importance of raising seedlings to increase the interest taken in all classes of florists' flowers, and the Gladiolus is so easily cross-fertilised that a child might manage it. The stigmatic part of the flower is very prominent, and the anthers are easily removed before the pollen grains are scattered. The pollen can be moved easily with a small brush from one flower to another. The cultivator must exercise his judgment as to the selection of the seed and pollen bearers. It is well to select a vigorous constitutioned variety as a seed-bearer, with good form in the flowers. If it has rich and well-defined colours, so much the better; but colour can be generally obtained from the pollen parent. This is the proper time to fertilise for seed-saving. The heavy rains have come very opportunely, and will give vigour to the plants. The Gladiolus like a goodly supply of water when growing; and if the plants get very dry at the roots they suffer much, and seldom give good spikes. Caterpillars are doing mischief in some collections; they hide in the axils of the leaves by day, and come out at night to feed. They must be destroyed, or they will eat many of the flowers, sadly disfiguring the spikes. It will be necessary to watch the seed-pods, and gather them as soon as they are ripe. This will be perceived by the pods bursting open at the apex. Remove the pods to a dry and airy place. *J. Douglas.*

BOOK NOTICE.

MARTIUS' FLORA BRASILIENSIS. Volume xiii., Part 3. *Orchidaceæ*. By Alfred Cogniaux. Fasciculus cxiv., pp. 160, tt. 1-34, folio.

BRASILIAN ORCHIDS.

This stupendous work or series of monographs gradually progresses, and now we have to record the issue of the first part of the Orchids of Brazil, comprising 160 pages and 34 plates. It contains the genera *Selenipedium*, *Habenaria*, *Chloræa*, *Bipinnula*, *Pogonia*, *Pogoniopsis*, *Epistephium*, *Vanilla*, and *Pelexia*. The arrangement adopted is that of Dr. Pfitzer, in Prantl & Endlicher's *Natürlichen Pflanzenfamilien*, which, it is well known, is based largely upon characters derived from vegetative organs, though we observe one departure from that arrangement in the suppression of the mongrel genus *Paphiopedilum*, in which the coriaceous-leaved species of *Cypripedium* and *Selenipedium* had been combined. Very few of the species comprised in the present part are known in European gardens, the chief exceptions being *Vanilla planifolia*, and the *Selenipedium vittatum*, *caricinum*, *Klotzschianum*, and *Lindleyanum*. Why the three latter are included at all is not clear, because they are stated only to grow in Guiana. *S. palmifolium* is also very doubtfully Brazilian, being included on the authority of a Brazilian specimen referred here by Martius, though it is highly probable that it belongs to the next species, *S. Isabelianum*, Rodr., which was not described until afterwards. Six species are enumerated—we had almost said as Brazilian; but as three of these only grow outside the area of which the work professes to treat, some confusion is liable to result. Works of this kind are frequently referred to in order to see how many species grow in any given area, and probably nine

people out of ten would, on hasty reference, carry away the idea that there were six species of *Selenipedium* in Brazil, as we ourselves did before going through them in detail. One hundred species of *Habenaria* are enumerated, but we have not looked through them to see how many are really Brazilian; so that the point above referred to is a matter of some importance. Two of the eight species of *Vanilla* are likewise not indigenous, though one seems to be included on the ground that some day it will probably be found in Brazil. All such species should be mentioned in separate notes, and not enumerated and described as if indigenous. Nine species of *Epistephium* are enumerated, and here we naturally look for the allied *Sobralia*, and just as we are on the point of concluding that the genus is not Brazilian, we discover by the clavis that it is placed far away in another group, and will be treated hereafter. There are four species of *Pelexia*, but we find no mention of *P. Travassosi*, described in these columns two or three years ago as Brazilian. The thirty-four plates contain excellent drawings, with dissections of fifty-seven species and dissections only of sixteen more, making seventy-three in all. Further comment is unnecessary, as the general character of the work is already so well known. When completed, this volume will be an invaluable standard of reference for the Orchids of this extensive country; and succeeding parts, which will contain more species of importance to horticulturists, will be awaited with interest.

TOURING IN KUMAON.

(Continued from p. 207.)

ALMORA.—Pursuing our way through a considerable Pine-forest, we came to Denapani, one of those charming dry sunny spots on which General Venour (a retired Anglo-Indian) selected for his retiring residence. From this point for some miles the road is very good, and fairly level; after which we encountered a very precipitous and awful descent, which it was only safe to walk down; we got into the valley below about 10 A.M., the sun striking distinctly warm, and probably not a degree below 90° in the sun.

After some miles of characteristic scenery we arrived at Takula, having done 15 miles. Breakfast and rest over, we pursued our way for Bogaswar, some 11 miles distant. This 11 miles is more than usually interesting. After leaving the Takula Bungalow a small river is soon encountered, and bounds the road for some miles. Here and there are several native Hindoo temples at considerable elevations, in all cases surrounded with thickets of Pine trees, forming a circle, so much so, that a young travelling friend, with a fancy for the curious, spotted these temples miles in advance, or rather, he inferred their existence by the peculiar formation of the hills and Pine trees. Some 4 miles from Takula there is a very steep ascent, withal very picturesque; numerous Acacias were in full bloom, and parquets were numerous; lots of straggling and climbing plants were abundant, and as we got to the top, the scenery below was very taking, but, curiously enough, very near the top was a stream of water with huge boulders, small stones and limbs of trees pitched about in Nature's own random way, and here and there most delightful patches of the most intense green Maidenhair Fern. Immediately after this we reached the summit of the hill, and called for a short rest; two lazy bullocks were ploughing in the primitive Hindostani way in the field close by.

It is marvellous how any set of men under the sun, claiming to be civilised, can stand this style of cultivation. The man had two huge bullocks hooked to an idiotic-looking arrangement called a plough, which has a huge spike attached for cultivating the ground; in no case is the soil turned over, but simply stirred about, after which, these paharies (hill-men) bring out a thing called a "koutla," a sort of miniature pickaxe, and break up the lumps; and, to get the soil something like level, they either use their hands, or a thing very like a turf-beater.

Coming across the putwari (a Government land-

agent), I ask him why on earth his people did things in this way? I told him in my country (England) a man would plough his field deeply and well twice over in six hours. He laughed, and said if that were so, these zemindars (farmers) would have nothing whatever to do for about six months in the year, and that this style suited their requirements. The man says, this plough belonged to my father, and before him to my grandfather, and so on, up to about five generations, and what suited my father is quite good enough for me, especially so when the doctrine that the son cannot be equal to the father is borne in mind.

We left the putwari, and pursued our way, and soon came in sight of the snows, which were very effective from this height, and all the more so as the view comes into sight very suddenly. From this point commenced a long descent of some 5 miles through varied forest. Half a mile down the hill there is a superior native garden and bungalow, withal a curious mixture of native and English ideas. A magnificent specimen of *Poinsettia pulcherrima*, some 10 feet high and through, with numerous fine heads of bracts, was noted; also some fine specimens of the *Agave americana*, both variegated and plain, and numerous other plants. Two very fine golden eagles were seen near this place. A little further on the road, a magnificent Pine forest ensues; many of the specimens [*Pinus longifolia*, Ed.] measure 8 to 10 feet in girth, and run up straight for a great height, giving, I should say, 70 to 80 feet of splendid timber. There must be millions of these trees in Kumaon, which, owing to the very great transit difficulties, are next to useless; the timber from Kumaon Pine is of the best quality, and very durable. Towards the end of this forest there is a charming little piece of scenery worth noting; close to the road a ravine is faced with stone or rock, and descends below perhaps 50 or 60 feet almost perpendicularly. In the ravine surrounding the pool are to be seen several plants of *Phoenix sylvestris*, numerous rampant climbers smothering up the trees round about, and helping to make up a pretty piece of scenery that would look very charming in a photograph. Soon afterwards we came to the river, and crossed over on the other side. From here to Bogeswar (about 2 miles) is on the flat entirely, being in a fairly broad valley. Here, too, is sighted for the first time the Holy Surgu River, to which all the Hindoos who can afford it consign the charred bones of their dead. This river comes direct from the snows, and hence it is considered holy.

BOGESWAR.—In the course of fifteen minutes we reached the Dak Bungalow, which is a large and spacious one, just off the River Surgu, and very charming in the day-time. Formerly Bogeswar used to be a place of some considerable note and trade. Here the largest fair in Kumaon is still held in the month of January, but its glory has largely departed, and it is a mere ghost of its former self. The Bhootias now deal direct with the plains, more or less. The Bhootias are monuments of persistent industry; most of them are wealthy, and first-class men of business in their own particular way.

The Borax Trade.—Their great article of trade is Borax, of which enormous quantities are brought down, and in due course pass into the hands of merchants at Ramnuggar and other places, from whence it finds its way to all parts of the world. It should be borne in mind these very hardy people come from the other side of the snows, and the passes are not only very few in number, but full of difficulty and danger. Most of the borax of the world has to be carried some two hundred miles on sheep and goats, and in the season you meet miles of sheep and goats with two peculiar-made bags, holding about a gallon each of solid matter more or less, and covered outside with leather. These are placed in a peculiar way across the sheep's back, and looped round the neck and tail, so as to go up and down hills with equal safety; and thus the men and sheep trudge along day by day till they reach their destination. When the day's work is done they take off

the loads and pile them up in straight stacks, and cover with blankets. As night comes on, branches of trees are cut down, and a sort of enclosure is made for the sheep and goats. These are eventually huddled pretty close together, and a large fire lit in front, and with the aid of two or three Bhootia dogs any leopards are generally kept at bay, and thus night by night passes away the life of the Bhootia, under the pure air of heaven only, though in some places he can take advantage of what are called *dhuramsalas*, which may be said to be wayside stables. The Bhootias themselves generally wear a pair of loose-fitting trousers, and a long peculiar-made coat of pure wool, made direct from the sheep's back. They also carry all their kits and food. Some have their wives, but in all cases the women dress very like the men; and it is only from observation that you can at times make out the man from the woman. They rise remarkably early, and are generally the first on the road.

As a rule they are very respectful men, and at once greet a European with a salute, and "Salaam, Sahib." Although Bogeswar is very pleasant in the day-time, it is intensely foggy and cold at night. It is not that the thermometer goes very low, but there is great fluctuation in the temperature. The day temperature in the sun, even in November, will scale 100°, whilst the night temperature goes down to 40° F. Some handsome young Chestnut trees are doing well in front of the bungalow, and Oranges thrive, as do also Plantains in the neighbourhood.

At 9 A.M. next morning my friends left me, and I struck out for Kubcote alone. This is due north, and off the beaten track; very few Europeans go that way except, to a limited extent, for sport, in the winter season. The road to Kubcote is for its entire distance along the side of the Surgu, and is comparatively level and easy travelling. There are some striking pieces of scenery along this road, both on the river and land. A huge conical hill rises to an altitude of 8,000 feet. Numerous piles of rock can be seen projecting here and there, some of a reddish granite-like colour, others whitish, with black striping, obviously due to the action of water. Dotted about in a charmingly irregular manner were numerous wild Date-palms, averaging about 30 feet high; these were mixed with numerous trees of a semi-tropical character. Here and there were some magnificent clumps of drooping Bamboos of the most intense green; seen from the distance, they forcibly remind one of giant Maidenhair Ferns. Some of the trees had the most beautiful autumn tints coming on, but, for the most part, the bulk were in luxuriant foliage. Down below, some 50 to 100 feet, is the beautiful river, with the purest of water; in places it is very deep, elsewhere it is shallow, and here and there are huge boulders and rugged places, causing the water to seethe and foam in its rapid course. The aspect is due north, and from the time I saw it, 11 A.M., I imagine the sun very rarely sets on any portion of the north side of this grand hill; the soil appeared to be dark, rich, and continually moist. Away, right at the very top, is a dead Fir-tree, with more than usually distorted branches, that look exceedingly strange and weird. Further on are numerous other pieces of scenery, and colonies of *Phoenix sylvestris*, but none so admirable as that just described. Close here I had the good fortune to shoot a very fine sample of the wild duck; these wild ducks are about the size of an English goose, very fair eating, and quite worth looking after out in the district miles away from all sources of supply of any kind.

After another mile or so, the country opens out; on the side of the road was to be seen a small scrubby, prickly kind of a bush, growing in batches about 2 feet high, with numerous berries of a yellowish colour, and quite the size of marbles, which I do not remember to have met before in Kumaon in berry. Along this part of the road were to be seen numerous trees covered with evidently a small kind of *Dendrobium*—unfortunately none were in bloom. I noted they were all growing on one particular kind of tree, called *Othece* by the natives. It looked like a species of Birch, and is

rarely found far from water. The wood is light and white in colour, and excellent for box-making, but will not stand exposure.

A little further on is a large village and numerous Plantains of the ordinary kinds grown in Kumaon. They very rarely exceed 15 feet in height in Kumaon, but bear fruit profusely. The largest is of a dull reddish colour, the next largest is yellow, and of better quality; but the best is smaller in size, and pale yellow. This latter has all the delicate aroma and flavour of the best Bananas obtainable on the plains of India. They were very cheap; for about half-a-crown one could easily get a hundredweight. *F. W. Seers, Ramghur, June 25, 1893.*

(To be continued.)

TREES AND SHRUBS.

PAVIA MACROSTACHYA.

FLOWERING, as this species does, a month or six weeks later than the other *Pavias* and *Æsculus*, its value is considerably enhanced. For a small garden, it is the most suitable of all the species, old specimens only attaining a height of 7 or 8 feet. It is extremely handsome in habit, and well adapted for planting as an isolated specimen on lawns, forming a rounded shrub, with the lower branches sweeping the ground. It increases in size mainly by sending up suckers, ultimately constituting a thicket of slender stems several feet through. The leaves are palmate, and are made up of three to seven leaflets (usually five). Terminating each branch, and contrasting finely with the deep green foliage, is a long, erect, and many-flowered raceme. Individually the flower is small, and of a faint pink-tinted white; the beauty of the raceme is greatly heightened by the numerous long thread-like stamens, which are also pinkish-white (not chocolate-brown, as is sometimes stated). The species rejoices in an extensive synonymy: *Pavia macrostachya* is the name by which it is commonly known, but in Nicholson's Dictionary it is described under *P. alba*; it is also known as *Æsculus parvifolia*, and is a native of the South-eastern United States, from whence it was introduced to this country in 1820 [It was figured in our columns, Nov. 24, 1877, p. 656. Ed.]

HEDYSARUM MULTIJUGUM.

There appears every likelihood that this leguminiferous plant will prove a useful addition to hardy shrubs. It was figured ten years ago in *Garten Flora*, t. 1122, but although catalogued for sale by some of the continental nurserymen, its cultivation in this country appears to be almost or altogether confined to botanic gardens, and at Kew it has been flowering throughout the summer. It is described in the *Garten Flora* as coming from the deserts of Southern Mongolia, and growing to a height of 5 feet. It is of somewhat sparse but not inelegant habit, the slender shoots growing in a zig-zag fashion. Its grey-green leaves are pinnate, 6 inches long, the petioles and under-surface of the leaflets covered with minute hairs. The racemes vary from 8 inches to considerably over 1 foot in length, the upper part bearing numerous papilionaceous flowers, each $\frac{3}{4}$ inch across. The flowers have been described as pink or flesh-coloured, but either the species is variable, or this is an error, for on all the plants I have seen they are of a glowing magenta-purple, with an orange-coloured blotch in the centre of the standard petal. The racemes, as well as the flowers themselves, are very like those of the well-known Australian plant, *Swainsonia galegifolia*. Flowers are produced from every joint of the current season's growth, and this year the plants commenced to flower in May, and are still—in August—producing their racemes freely; they will, no doubt, continue as long as we get a fair amount of sunshine, and the nights do not become cold. Notwithstanding its desert origin, this shrub likes liberal treatment, and should be grown in an open loamy soil; it must also be allotted a sunny position. Propagation is effected by layers and cuttings, or by seeds, which do not, however, ripen in great quantity.

DABEOCIA POLIFOLIA.

This charming little Ericaceous plant is now fully in flower, and will doubtless continue so for some weeks to come. It is a native of the moorlands of south-western Europe, and is found also in Mayo and Connemara, in Ireland, where it is popularly known as St. Dabeoc's Heath. It is of dwarf habit, growing to little more than 1 foot in height. The leaves are small, of a deep green above, but covered beneath with a white tomentum. Standing well above the foliage are the erect, terminal racemes, whose pendent blossoms are borne on short stalks, and are bell-shaped. Their colour differs according to the variety, the typical form being purple; a white-flowered variety was found in Connemara in 1820, and there is also a parti-coloured one, in which one half the spike—or even half the flower—is purple, and the other half white. Like most of its class, this *Dabeocia* prefers a peaty soil—one half, however, may be loam, provided it is light and sandy. It may be propagated by layering the outer shoots during July. *W. J. B.*

HYBRIDISATION OF THE ACACIA.

The difficulty of distinguishing one from another the four hundred species of *Acacia* is often very great, as in many cases the difference is slight.

After seeing how freely they cross-fertilise when growing together in the Riviera gardens, I do not hesitate to express my opinion that many of them are natural hybrids. When growing together in variety, as they do here, it is natural that they would hybridise one with the other.

Around the plants that have produced seed, hundreds of young seedlings spring up in a very short time, and amongst these are often to be found some which deviate from the parent plant. I have recently had the opportunity of noting a very distinct hybrid of this kind. The gardener sowed some seed of *Acacia cultriformis*, which he took direct from the plant which was growing beneath another species called *A. petiolaris*.

Amongst the batch of seedlings several very distinct varieties appeared, showing in varied degrees the character of the two species. It is also remarkable that the seedlings assumed the character of the pollen plant as to the foliage, and in most instances were more or less variegated, as the one species has a silvery foliage and the other dark green. *Riviera.*

NOTES FROM DAVENHAM BANK, MALVERN.

THESE gardens contain something beautiful and interesting at all periods of the year, each nook and corner having some floral treasure. At the present time, the chief features of interest are the Grapes, Peaches, Nectarines, Pears, flower garden, and kitchen garden crops. The Muscat-house is occupied by four old Vines, which at one time were condemned to be destroyed. They are bearing one hundred bunches of excellent Grapes; the bunches are not large or sensational, but are of useful size, the berries well thinned, and of average size, and of a delicate pale amber tint rarely seen. An adjoining vinery has been planted three years, and this year each Vine carries seven bunches. The bunches of Madresfield Court are medium in size, but having superb berries in size and finish. The late vinery was planted with young Vines last February; these were allowed to grow to a length of 12 or 13 feet, and then stopped. They are strong and short-jointed canes, such as we seldom see. The average length from joint to joint is about 4 inches.

Good crops of beautiful Peaches and Nectarines are in the Peach-houses, the Nectarines especially being highly coloured—Stanwick, Pitmaston Orange, and Lord Napier being conspicuous. In the Pine-pits are noticeable several dwarf smooth-leaved fruiting Pines that were received as suckers a few months ago from the West Indies. The fruits of these are small, but are remarkable for their high

flavour and juiciness, as well as for their weight in proportion to size. Probably more will be heard of these Pines at some future time.

Some heavy crops of Pears, on pyramidal and espalier trees, are to be seen in the kitchen garden, and, growing on the slope of the Malvern Hills, the fruit is very fine. The best are Williams' Bon Chrétien, Vicar of Winkfield, Marie Louise, Thompson's Glou Morceau, Beurré Diel, Easter Beurré, and Pitmaston Duchess.

In the conservatory is a mass of *Primula obconica*. The effect produced is very striking. Mr. Bradshaw is always happy in the massing of colours, and by such means produces some charming effects. The old-fashioned "Bridal Wreath" plant (*Francoa racemosa*) is present in numbers in the conservatory.

Excellent crops of Onions, Carrots, Parsnips, Sprouts, &c., are in the kitchen garden, notwithstanding the dry season and the sharp slope of the ground. *J. Udale.*

CHRYSANTHEMUM LADY FITZWYGRAM.

THIS early-flowering variety, raised from seed by Mr. Agate of Havant, is a capital sort for affording early white flowers; and, if anything, it is an improvement upon Madame Desgranges, the florets being whiter. Plants, 2 feet high, laden with flowers, are lovely objects, even at this time of the year, when hardy flowers are plentiful. Full-sized blooms do not attain the dimensions of those of the Desgranges varieties, but for the various purposes of the commercial florists' art the variety will be appreciated. *E. M.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By H. O. PRINSEP, Gardener, Buxted Park, Uckfield.

WINTER SPINACH.—In most districts, except those in the extreme south, the last batch of this useful vegetable should now be sown, that the plants may have sufficient time to establish themselves thoroughly before cold weather. The seed should be sown as previously advised, but it will not be necessary to thin out to such an extent as those sown earlier. Previous sowings may be thinned as the plants get large enough to handle, for they soon spoil if allowed to become overcrowded.

TURNIPS.—On good ground in the south these may still be sown, for if the autumn be mild, good-sized roots will be formed, which will stand the winter and may prove useful in spring. If, however, the autumn be cold, so that no bulbs are made, the plants will yield a supply of wholesome greens. There is also an advantage in late sowing, as they do not so soon go to seed. Early bulbing kinds only should be sown now. Run the hoe through those already up, and thin as soon as large enough.

TOMATOS will need more attention as the days get shorter, for the temperature falls very low after hot sunny days occasionally, causing more moisture in the atmosphere at night, which often condenses on the foliage of the Tomato, and causes specks of mildew to appear. In this event, the foliage should be dusted with sulphur to ward it off. Keep all fruits cut at the first signs of colouring, as this assists the smaller ones to swell more rapidly. Pinch out all superfluous growth, so as to throw the sap into the swelling fruit. Should bad weather set in, causing disease to make its appearance, gather any fruits that may be large enough for use, for if allowed to remain on the plants, they will soon rot.

RIDGE CUCUMBERS in the open should now be producing plenty of fruit. It is well to be prepared with mats or other light covering, in case of early frosts, as these, especially in low districts, cut down the plants just as they are in full bearing; whereas by a little forethought, plenty of fruit could be had for a long time afterwards.

CARDOONS.—Owing to the abnormally low rainfall of the present season, these plants are backward, and blanching may be deferred for a short time longer, unless they are early and robust, when the

operation may be commenced at once. Previous to so doing, the plants should have a liberal watering at the roots, but the foliage must be allowed to get quite dry before being covered.

SALADS.—As the days get colder, these are not so much in request, but a supply should be kept up to meet any demand that may arise. Small sowings of Mustard and Cress should be made at intervals. Onions to be drawn when small should either be sown in pans or in a cold frame. Radishes should be sown thinly on a warm border, so that roots may be formed early; for this purpose, the short-topped kinds are best. Endive may be blanched as required for use, while Lettuce should be encouraged to make free growth. Celery will now be coming into use, so that some of the more tender green salads will be discarded.

HERBS will soon cease to make growth outside, especially such tender kinds as Basil and Savory. A sowing of these should be made in a pan or cold frame to produce plants for winter.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

SPRING-FLOWERING BULBS.—Early White Roman, Blue Roman, and Double Roman Hyacinths, Polyanthus Narcissus, Campanella Jonquilla, and a selection of the single varieties of named Hyacinths for early flowering, should now be potted. Good sound bulbs of medium size should be selected and potted in batches from the present time until the end of October, at intervals of about ten days or a fortnight. Use well-decayed turfy loam, with about a fourth part of old rotten rich dung, leaf-soil, and sea-sand, to which add a small quantity of Clay's Manure. A good heap of this compost should be prepared by well mixing it together, and throwing it in a heap, where it may be protected from rains, so as to be ready when required. Clean pots should be prepared, and they should be well crocked. Some fertilising moss or dried cow-dung should be placed over the crocks, and the pots filled with soil, and a handful of sea-sand put on the top; press the bulbs firmly down into it, fill round with soil to make the bulb fast, and leave the top of it exposed. Do not pot the bulb too high, but leave sufficient space to give a good watering when required. Place the pots on a level bed of ashes, then give a thorough watering, and allow them to drain for a time, afterwards cover them with from 12 to 18 inches of ashes, and let them remain for a month or six weeks, until they have filled the pots with roots. Care should be taken not to let them stay too long under the ashes, but when about an inch high remove them to a cool greenhouse, and gradually expose them to the light, when they may be put in a gentle heat as required. Early Van Thol and other Tulips should be treated in the same way. Nerine sarniensis (the Guernsey Lily), should be potted as soon as possible, and placed in an airy position in a cool house, where it will soon be in flower. Great care must be taken not to break the flower-buds in so doing. There are several other beautiful varieties of this useful bulb worth growing, viz., *N. cornuta*, *N. crispata*, and *N. Fothergilli* major. Continue to pot a batch of *Tuberoses* every three weeks; they will come in useful during the dark days. *Vallota purpurea* growing or in bloom should be helped with a liberal supply of manure-water to strengthen the bulbs for another year.

GENERAL WORK.—A batch of *Coleus* cuttings and of *Cyperus alternifolius*, should now be put in for winter work; they will quickly strike and make useful table plants if placed in small pots in a moist heat. *Grevillea robusta* should be propagated from seed; they are most valuable for decorative purposes, and should be well fed with manure, and syringed freely to keep down spider; they form nice decorative plants grown in 5-inch pots in peat, loam, and sand. *Eulalia japonica variegata*, *E. albo vittata*, *E. gracillima univittata*, and *E. zebrina*, are most useful plants, grown in pots for house decoration. They are hardy, and will stand a long time in a cool-house without injury. They are increased by divisions of the roots, and if put in large sixties they are useful for table-work; but for vases or groups, where their long graceful foliage is most effective, they are best in 8 or 10-inch pots. Give them well-drained pots and good rich loam, leaf-soil, and sand, with manure waterings occasionally. They grow well in an ordinary greenhouse, and like plenty of air. *Eucalyptus citriodora* has an agreeable sweet

lemon-scent, and is useful also for decoration. *E. globosus*, the Blue Gum of Tasmania, is well-known for its medicinal qualities. Both varieties are very useful grown in small or large pots for placing in halls or corridors, and are easily raised from seeds. They may be placed outside during the summer, and removed to the greenhouse or conservatory for the winter. *E. citriodora* likes a warm-house when the plants are young. *Primula sinensis fimbriata* should be potted on as they require it; when placed in the blooming-pots, it is a good plan to give them three small pegs close to the stem, to keep the plants from falling about when carried.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

STRAWBERRIES.—If any have deferred the planting of these, they must not longer delay, for the crop of fruit to be obtained from the plants next season depends upon the growth which they make this autumn. And it is possible that the growing season may not last more than a few weeks at the longest. When the general planting is finished, plant out those intended to supply runners for layering from next season. We generally select a piece of ground convenient to water, and in an open position. The plants are put out 3 feet 6 inches from row to row, and 18 inches apart in the row. A good distance between the rows prevents the sorts getting mixed, where only one row of a sort planted across an open quarter is required for layering from. Vicomtesse H. de Thury, as was anticipated when the fruiting season was over so early, promises to produce a very useful second crop, and if the litter was removed when the quarters were cleared of runners and weeds, it will be well to give the plants a good root-watering, and then litter them down with rather long dry grass which is free from seeds. Failing the grass, and if straw litter only can be obtained, defer the watering till after it has been placed about them, which should be done as early as possible. Keep runners removed from all plantations, and keep down weeds with the hoe whilst the weather is suitable for doing so.

AMERICAN BLACKBERRIES.—Thin out the young growths, leaving only sufficient to be trained in at 1 foot apart after the bearing growths have been removed. Tie them up somewhat loosely now, as where they are allowed to bend over, the check given to the flow of sap induces the lower buds to start into growth, which should be prevented if possible. If such does take place pinch or prune back to one leaf, and repinch again later on should such be necessary. This season should prove an ideal one for ripening the growths of the variety Wilson Junior. Instead of depending entirely upon this variety, *Rubus laciniatus* should be included in the most select collections. As being quite hardy it is consequently a sure bearer, and is also ornamental.

APPLES, ETC.—Despite root-waterings the great heat is seriously affecting the Apple crop, and causing premature ripening. Both mid-season and late sorts have ceased to grow. Rather than gather the crops of all sorts which are dropping fruit so badly, go over the trees regularly to gather any fruits which have ripened, and place a good bed of some soft material under the trees to prevent any fruit that may fall from being badly bruised. The grass mown from the orchard, and which has not been allowed to ripen seed, is the most suitable material to be used for the purpose. Pears withstand the heat much better than Apples, and given copious root-waterings, the fruits that can be saved from wasps will be very fine. Continue to give copious waterings to all trees now bearing, and to those from which heavy crops of fruit have been gathered. Also to autumn and summer-fruiting Raspberries.

THE ORCHID HOUSE.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

THE INTERMEDIATE-HOUSE.—*Odontoglossum grande*, *O. Insleyi*, *O. I. leopardinum*, *O. I. splendens*, *O. pulchellum majus*, *O. coronarium*, *O. miniatum*, *Oncidium ornithorrhynchum*, *O. o. albidum*, *O. incurvum*, *Epidendrum vitellinum majus*, *Maxillaria grandiflora*, *M. Harrisoniæ*, *M. venusta*, and *M. Sanderiana*, all do well in this house. *O. grande* will now be swelling its new growths, from which the flower-spikes will come. They should be sponged over with soapy-water, a little of the old potting-material removed from around the new

growths, and a little new peat and sphagnum moss added, which the new roots will soon run into, thus assisting them to carry the flower-spikes, which, if they are good, constitute a great strain on the plants. Give them plenty of water until the flowering period is over, and the pseudobulbs are well ripened, when less will be needed. Keep a good look-out at night for snails and cockroaches, or the fleshy spikes and growth will soon be damaged. Snails seem more partial to this *Odontoglossum* than to any. *Odontoglossum Insleyi* are growing very freely now, and will flower later on; they must not want for water, but care must be exercised in seeing that they do not get too much. *O. pulchellum* is growing away, and will take a plentiful supply of water, both at the roots and overhead, always providing they have plenty of roots. *Oncidium*s such as mentioned, also *O. varicosum Rogersii*, *O. tigrinum*, and *O. Forbesii*, will mostly be showing their flower-spikes, and must be well looked after in the evening, to prevent injury from snails, &c. They must be watered carefully until such time as the new bulbs are made, and the flowering is over. *Maxillaria grandiflora* is nearly always in flower if good plants be had, and it comes in useful for buttonhole-making, &c. They should be well supplied with water, and be sponged over occasionally to keep down red-spider, which is rather troublesome, especially so after the hot and dry weather we have had. *Ada aurantiaca* is making fine new growth, and this also requires plenty of water whilst growing, and it should be looked over occasionally for a mealy-white scale which gets on the under-sides of the leaves, and which must be sponged off. *Epidendrum vitellinum majus* we find does well in this house, hung close up to the roof-glass. *Pleione Lagenaria*, *P. maculata*, will be completing the new bulbs, but must not be allowed to become dry until such time as they have flowered. Weak manure-water will be beneficial to them, and they should be got up to the roof where they will get plenty of air. *Dendrobium filiforme* having passed out of flower by this time, will need to be kept rather dry than otherwise, and the same applies to *D. glumaceum*. *Lycaste Skinneri* growing at the warm end of the *Odontoglossum*-house will need plenty of water at the roots, but not overhead. The earliest ones are just beginning to put out the flower-buds; an occasional watering with some kind of liquid manure-water will help them. All the houses should be well damped and syringed for the present, and the summer temperatures kept up for another month, but always give as much air as can safely be given. Our fires have not been let out at all during the very hot weather, as I find the air circulates better when the pipes are just warm; the thermometers may be all right in the mornings, but without a little warmth in the pipes the hottest houses feel damp and chilly.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES.—If the roots of early-fruiting Vines are thought to be in an unsatisfactory condition, it is advisable to find out the cause as soon as the fruit is cut. Where there is a small quantity still hanging, it may be cut and bottled in the usual way. It is important to get the roots in the new soil as early as possible, and the wounds caused by lifting, healed before winter arrives. Early Vines are more easily renovated than late ones, because one can get the roots active again while the foliage is still maintained. The first thing necessary is to provide plenty of good loam; and then search carefully for the roots, beginning at the extreme points, and working very carefully with a fork, and saving every rootlet. Clear out everything down to the drainage, and if that is faulty, remove it, and secure a good outlet for water, and afterwards place some fine gravel or small broken bricks over the coarse drainage to prevent the roots from descending into same. Place some turf with the grass towards the drainage over this, and then some soil. The roots should then be laid out evenly over the compost, which need not be more than some lime-rubbish, and a special manure well incorporated with the new loam. The roots may be brought within 6 inches of the surface, and carefully covered with the soil. If roots of Vines are in outside and inside borders, one half could be done now, and the other portion next season. Three vineries, which we renovated piece-meal during the past two years, have done very well. Leaves of ripened Vines should be removed as soon as they are of no further service to the Vines, but green leaves should be kept healthy as long as possible. Laterals on early Vines should be closely

stopped—a healthy rest is indispensable to early-forced Vines.

MELONS.—The vines, whether growing singly or in pairs, should be stopped as soon as they have grown long enough to carry three or four fruits; pinch out the tops of the laterals at one or two joints beyond the fruit, and let them have all the light possible. Impregnate as soon as the number of fruits required have appeared, and withhold the syringe till they are set. A temperature of not less than 70° should be maintained. Those grown in pits heated by means of fermenting manure should have the linings often renewed; a heap of leaves and manure mixed together should always be in readiness where heating depends on such means. Plants growing under such conditions require judicious application of moisture; in damp weather, the foliage should be kept as dry as possible.

TOMATOS.—If foliage has become gross, and excludes light, it may be shortened, and every lateral not required should be removed when they are quite young. If the plants are to fruit into the winter months, they require all the air they can stand to render the growth firm and fruitful; cropping should be moderate, and give no liquid manure till the soil is full of roots.

THE FLOWER GARDEN.

By T. H. CRASP.

ALL seedling biennials, such as *Enotheras*, *Canterbury Bells*, &c., that were sown at the end of July, will be greatly hardened by being transplanted, and, when possible, the best plan is to plant them permanently where they will be required to bloom next year. Herbaceous borders should receive strict attention in the matter of staking and tying, especially the tall-growing subjects, so as to prevent the flowering shoots being broken off by the wind. Remove the old flower-spikes immediately the beauty of the flower is past, where seed is not required. Also attend well to the staking and pegging of all bedding plants, as well as to the removing of all decayed foliage and bloom. Lawns should be kept well mown, and edges clipped, for if such work is not kept well under at this season of the year, a place soon becomes unsightly and untidy.

ANTIRRHINUMS.—The best way of perpetuating any superior varieties is to propagate by cuttings, which root very readily at this season of the year. Short flowerless shoots should be slipped off the old stems near the ground, and dibbled into handlights or cold shallow frames, in a cool and somewhat shady position. When struck, remove the lights until frosts occur, and afterwards they will require the same treatment as *Calceolarias*. If these are planted out early in the spring, they will flower splendidly during the summer. Many beautiful varieties may be obtained from seed, and should be sown now in preference to the spring. Sow in pans or boxes in sandy soil, and place under a hand-light in a cool position, where the seed will soon germinate. When the seedlings are large enough to handle they should be dibbled into boxes of good light soil, and remain in cold frames till next spring, when they may be planted out at the same time as the cuttings.

POTENTILLAS.—These showy hardy perennials are very useful for cutting during the months of May, June, July, and part of August; they are readily propagated by division in early spring, as well as by seed, which should be sown at the present time in shallow boxes filled with light soil. When the seeds have germinated, prick the young plants a few inches apart into boxes, or a warm border, finally transplanting them into their flowering positions when a favourable opportunity occurs.

PLANT PORTRAITS.

LINARIA DALMATICA.—Perennial. Flowers yellow. D. Dewar, in *Garden*, July 29.

MASDEVALLIA ABBREVIATA, M. aristata, M. floribunda, M. fragrans, M. guttulata, M. ionocharis, M. melanopus, M. militaris, M. racemosa, M. xanthina. *The Genus Masdevallia*, Miss F. Woodward, part IV.

MASDEVALLIA HARRYANA VARS., *Lindenia*, t. 382.

MILTONIA WARSCEWICZII, *Lindenia*, t. 383.

ODONTOGLOSSUM CRISPUM VAR. *FERRIENSIS*, *Lindenia*, t. 381.—A very beautiful variety, flushed with rosy-violet, and heavily blotched with maroon.

SOLANUM CRISPUM, *Garden*, July 22.—Hardy wall plant. Chile. Flowers purple.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

PLANTS, &c., TO BE NAMED.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, AUG. 29 { Royal Horticultural Society: Committees at the Agricultural Hall, Islington.

SHOWS.

TUESDAY, AUG. 29 { Royal Horticultural Society, at the Agricultural Hall (four days).

WEDNESDAY, AUG. 30—Bath Horticultural.

FRIDAY, SEPT. 1 { National Dahlia Society, at Crystal Palace (two days).

SALES.

MONDAY, AUG. 28 { Trade sale of Dutch Bulbs at Protheroe & Morris' Rooms.

THURSDAY, AUG. 31 { Trade sale of Dutch Bulbs at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 1 { Trade sale of Dutch Bulbs at Protheroe & Morris' Rooms. Orchids at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 2 { Trade sale of Dutch Bulbs at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—60°.4.

Agricultural Hall Show.

ON Tuesday, August 29, the great show of plants, flowers, fruits, and horticultural sundries, will be opened at the Agricultural Hall, Islington, by the Royal Horticultural Society, and will remain open to the public until the night of September 1. The members of the Fruit, Floral, and Orchid Committees will meet on the 29th inst. at 11 A.M. precisely, but will be admitted at the Barford Street entrance as early as 10 o'clock. They are particularly requested to wear the badges given out at the last Temple Show, and to have their Fellow's pass and tickets with them.

As the catalogue of the show must go to press on Monday, it is hoped that all exhibitors will have given particulars as to their exhibits by that day to the Superintendent of the Royal Horticultural Society's Gardens, Chiswick, as otherwise they cannot possibly appear in the catalogue. We understand that the number of trade exhibits will be large.

As some difficulty may be experienced by those not familiar with the geography of London in reaching the Agricultural Hall, it may be well to say that omnibuses run from all, or nearly all, the great railway stations to the "Angel" at Islington, which is within a very short distance of the Hall. King's Cross Station, on the Under-ground Railway is also a convenient place for visitors, as it is in direct communication with the Great Western (Paddington), Addison Road, Baker Street, Euston [indirect], Midland, Great Northern, and Great Eastern

Stations. King's Cross is also easily reached by the Under-ground from Victoria, Charing-Cross, Earl's Court, Ludgate Hill, Cannon Street, and Mark Lane, or Aldgate (for Fenchurch Street). From King's Cross the trams and omnibuses to the Angel are very numerous.

Highbury Station on the North London Railway, is within a few minutes' ride of the Hall, in omnibus or tram. Passengers coming from Waterloo and South-Western Stations, should enquire for a "Favourite" omnibus. If one omnibus or tramcar does not offer facilities, try another, and, if in difficulties, "ask a policeman." In all cases ask for the "Angel"! and if time is an object take a cab.

LILIUM JAPONICUM VAR. ALEXANDRÆ.

This is the Lily which was shown at the meeting of the Royal Horticultural Society at Chiswick, under the two names, R. Ukeyuri and of L. Alexandræ (fig. 44, p. 243). The plant has an indefinable appearance of a hybrid, in the confection of which *Lilium auratum* may have had a part. The flowers are pure white. A full description of the plant, by Mr. BAKER, is given at p. 86.

THE BIRMINGHAM GARDENERS' ASSOCIATION.

—The annual excursion of this Society took place on the 14th inst. The party journeyed to Windsor, where an inspection was made of the Castle and its gardens. Mr. OWEN THOMAS gave his hearty assistance, and did everything in his power to ensure the comfort of the large party of nearly 200, and a very enjoyable day was spent, notwithstanding the great heat.

THE WORLD'S FAIR.—The last number of the *American Florist* contains no fewer than four hundred portraits of "florists," or, as we should say, market growers, on the occasion of the great gathering of the community at St. Louis, and of the meeting of the Horticultural Congress in Chicago. The delay in getting the jurors to work at the Fair is seriously complained of, not only by foreign jurors, to whom time is specially precious, but also by natives of the States.

THE DUCHESS GRAPE.—This Grape, of which we gave a slight account in a recent number, based on that given in the *Revue Horticole*, may be seen against a wall at Chiswick with other outdoor Grapes. It is, we believe, not highly thought of by Mr. BARRON.

HORTICULTURAL CONGRESS AT CHICAGO.

The following is the outline programme for the General Horticultural Congress, held at the Art Institute, Adam Street and Michigan Avenue, Chicago, which began August 16, and continued three days:—

SEEDSMEN'S SESSION.—Seed Growing—Its Past, Present, and Future: Henri L. de Vilmorin, Paris, France. Seed Growing in Denmark: J. Pedersen, Bjergaard, Copenhagen. Comity in the Seed Trade: Jas. J. H. Gregory, Marblehead, Mass. Knowledge in the Seed Trade: E. V. Hallock, Queens, N.Y. Selection in its Relation to Seed Growing: C. L. Allen, Floral Park, N.Y. American Seed Growing: C. C. Morse, Santa Clara, Cal.

GENERAL SESSION.—Technical Horticultural Education: Prof. Wm. Trelease, of Mo. Botanical Gardens. Improvement and Care of Public Grounds, Developing and Conserving Natural Beauty: Wm. McMillan, Buffalo. Relation of Experiment Stations to Commercial Horticulture: Chas. W. Garfield, of Michigan. Horticulture and its General Relation to Art.

FLORIST'S SESSION.—The Past of Floriculture: Prof. G. L. Goodale, Cambridge, Mass. The Present of Floriculture: R. Craig, Philadelphia. The Future of Floriculture: E. G. Hill, Richmond, Indiana. Hybridisation and the Benefit Accruing to Horticulture: Prof. Chas. Naudin, Antibes, France. How Best to Subserve and Protect the Interests of the Originator of New Plants: Luther Burbank, Santa

Rosa, California. The Packing and Shipping of Plants. The Utilitarian Advantage and Importance of Floriculture.

NURSERY SESSION: General.—Japanese Nurseries, Dwarfing of Plants and Miniature Gardening, Henry Izawa. Inter-State Laws to Control Insects and Diseases: Edw. Willets, John Rock. Forestry and Nursery: Herr Runnebaum, Eberswalde, Prussia. **Specific.**—In Europe—Present Status of the Nursery Trade: Victor Lemoine, H. Waterer. In the South, in the Mississippi Valley, On the Pacific Slope: W. R. Williamson, Seth, Llewellyn. History of Nursery Business in America.

POMOLOGICAL SECTION: General.—Amelioration of Native Fruits by Artificial Crossing and Selection. Location and Environment as Affecting the Evolution of Fruits, Mediterranean Fruits, Catalogues and Nomenclature: T. T. Lyon, South Haven, Michigan. **Specific.**—Our Citrus Belts, Commercial Apple Culture, Peach Areas and Problems, Vine Culture and Products.

PISTILLODY IN POPPY.—Certain plants are peculiarly subject to particular changes, why we do not exactly know. A not uncommon malformation in Poppies is the more or less complete substitution of pistils or carpels for stamens. Mr. WOLLEY DOD kindly sends us a good illustration of this change.

ORCHIDS AT KEW.—We noted this week a twenty-flowered raceme on the delightful little *Bulbophyllum barbigerum*, the flowers bobbing up and down like lively little caterpillars. *Rodriguezia pubescens* is a beautiful white-flowered basket Orchid, as represented by a nice specimen in flower now. *Disa cornuta*, *Satyrium militare*, and *Stenoglottis longifolia* are three interesting, and in the case of two at least, ornamental rarities. A new *Bulbophyllum*, a new *Stanhopea*, a healthy two-spiked plant of *Vanda Sanderiana*, *Catasetum Darwinianum*, *Apanisia ionoptera*, *Dendrobium Mirbelianum*, and *Vanda cœrulea*. There are numerous choice *Cypripediums* in flower, one named C. Victoria Maria being a dull-coloured form of C. Chamberlainii.

HYBRID CLEMATIS.—Our excellent colleague, M. Ed. André figures and describes in the current number of the *Revue Horticole* (August 16) a hybrid raised at Lyons by M. MOREL between *Clematis Pitcheri* and *C. coccinea*, the former having been the seed-parent. The plant is like *C. coccinea* in habit and foliage, and like *C. Pitcheri* in the form and the ground-colour of the flowers.

THE HAMPTON COURT VINE.—The *Standard* has been discussing the history of this Vine. It is, we believe, an offshoot of the Vine at Valentines, near Ilford, and may have been planted by WILLIAM ROBINSON, Secretary to the Board of Works, in the middle, or towards the latter half, of the last century. Our volumes for 1841, 1850, 1860, and 1862 contain numerous references to this Vine.

EXCURSION.—The employes of Messrs. Wm. CUTBUSH & SON, of Highgate, London, N., and Barnet, Herts, made their annual excursion on Saturday, August 19, on which occasion they went to Hastings, where a very enjoyable day was spent.

CANADIAN APPLES.—According to reports printed in the *Canadian Horticulturist*, the Apple crop in Canada is this year very deficient.

RUBUS ARCTICUS.—A delightful little plant for the rockery, of which a specimen has been sent to us by Messrs. VERTEGANS, of Birmingham. It is of dwarf habit, with very slender wiry stems, stalked leaves made up of three leaflets, each roundish, more or less wedge-shaped at the base, crenately toothed at the edge, and crinkled on the surface. The leaves change to a rich ruddy-bronze colour in autumn. The flowers are borne on long slender stalks. The calyx is cup-shaped, with five spreading, lance-shaped sepals, half the length of the stalked, obovate, deep rosy lilac petals; filaments of the stamens white, thickened at the top, and curved inwards when mature, over the pistil. Berries reddish-purple,



FIG. 11.—LILIUM JAPONICUM VAR. ALEXANDRE. (SEE P. 212.)

with so agreeable a flavour, partly acid, partly aromatic, that the birds of the polar regions may well be enured their feast. Sir J. D. HOOKER records the occurrence of this species in the Arctic regions of Europe, Asia, and America, but notes that it is absent from Arctic Greenland and that though Canadian, it is not met with in the United States. It is not known in Switzerland or Central Europe, and though recorded to have been found in the Highlands of Scotland, the record has not been confirmed.

WASP-WHISK.—Mr. A. F. WINCH of Rochdale Road, Oldham, forwards a flat whisk composed of slender stiff rods of cane, very tough and light, so that smart blows can be given on glass windows without injury to the glass. The whisk is very effectual in ridding a room of flies or wasps, and would be serviceable for other purposes.

WEED-KILLER.—Messrs. MARK SMITH & Co., of Louth, have submitted for our inspection and trial some of their "Powder Weed-killer." Considering the very poisonous character of these preparations, and the possibility of alarming results from their abuse by careless workmen, it is an advantage to have the material in the form of a grey powder which has to be dissolved in water before use. Accidents are thus less likely to happen than in the case of a liquid preparation. We have ourselves tried it satisfactorily on a small scale, and have no doubt as to its efficiency for the purposes for which it is designed.

AN OPPORTUNITY TURNED TO ACCOUNT.—We have often pointed out the comparative uselessness of the majority of flower-shows, the results of which are by no means proportionate to the expense and trouble involved in their management. It was, therefore, with very great satisfaction that we noticed an innovation at the recent show of the Beddington, Carehalton, and Wallington Horticultural Society, where, as we learn from the *Gardening World*, Mr. J. WRIGHT gave a most interesting address.

"Having a few good object-lessons on the table before him, Mr. WRIGHT dwelt briefly on judging by quality rather than mere size, illustrating his point with samples of Vegetable Marrows taken from the 1st, 2nd, and 3rd prize lots, the 1st prize being fair-sized examples, tender, and good for cooking; the 2nd larger and harder skinned; while the 3rd were very large and hard-skinned. His next illustration was a Potato plant, grown with a single stem, strong and robust, with a splendid crop of fine tubers. Then he showed a plant with several stems, all weak, and with a miserable worthless lot of tubers. This was to show the superiority of high cultivation over ordinary and careless methods. Then taking up samples of Apples, he again illustrated the economy of high over poor cultivation, by showing that the crowded small fruits were not only worthless, but owing to the fact of their taking a much larger percentage of mineral constituents from the soil than good marketable fruits do, they actually cost more to produce."

The amount of mineral matter, however, removed is so slight that we apprehend it would not be noticeable commercially. Another interesting feature of this show, to which we have already referred, was the competition for the best dinner for five persons—a working-man, his wife, and three children, the dinner to include at least two vegetables, the value of each dish to be stated, and the whole not to exceed 2s.

"This novel class," says our contemporary, "brought out a strong competition, and the various 'spreads' were judged by points, the following being the maximum scale:—Soup, eight; Ash, eight; entrées, ten; roast or boiled meat, pudding or pie, ten; vegetables, twelve; sweets, six; fruit pudding or pastry, six; savoury or cheese, six; bread, four; salad, four; sufficiency, four; cost, six; and skill in preparation, twelve; or a grand total of ninety-eight points. The first prize was won by Mrs. STEVENS with fifty-four points. This exhibitor put the cost of her dinner at 2s., and for this sum she provided soup, pressed beef, Scarlet Runner Beans, custard, Potatoes, Plum tart, and bread. These with the exception of the Potatoes, could hardly be beaten so excellent were all the other dishes in quality. The beef was garnished with Parsley and Beet cut in thin slices, and with the exception named these viands were fit to be set before anyone. The second prize went to Mrs. BARR, who had a breast of mutton, Potatoes, cheese, bread, rice milk pudding, Apple tart, bread-and-butter pudding with Currants, Vegetable Marrow, Lettuce, and extract of herb beer, of the exhibitor's own make. This exhibitor scored fifty-one points, and may be considered a close second, while well ahead of the third prize-winner, Mrs. EVANS, who had sheep's head, Potatoes with white sauce, bread, Scarlet Runner Beans, Capcote pudding, and mutton broth with pearl barley. Extra prizes were awarded to Mrs. CULVERHOUSE, whose exhibit consisted of cutlets dished up on rice decorated with cooked Tomatoes and sliced Lemon, Potatoes, bread, and five

Apple dumplings; and to Mrs. E. DAVIS, who had stewed beef with Carrots, Cabbage, Potatoes, bread, and plum pudding, the whole costing 1s. 6½d. Mr. SMEE himself set up a table on which each article was most daintily dished up, and included cheese, butter, mackerel, meat pie, bread, Scarlet Runner Beans, and Potatoes, the total cost of which was 1s. 9½d. The table was set off with flowers, and the viands calculated to tempt the most fastidious appetite, and the whole served as an object-lesson of first-rate importance."

Next year we would suggest that a very much larger proportionate number of marks be given to skill in preparation. At least, half the number of marks should be allotted to the cook.

FLOWERS IN SEASON.—Messrs. R. H. VERTEGANS & Co., of Chad Valley Nurseries, Birmingham, send the following:—We enclose blooms of a variety of *Coreopsis*, received by us under the name of *C. monstrosa*. We do not think it is in general cultivation, but if it were well known, it would, we doubt not, soon become a most popular plant. It grows to the height of about 18 inches, and produces its flowers in great abundance, and you will see the colour is a distinct delicate shade of rich golden-yellow, merging into orange. A covering of some light material, or coke-ashes, was found sufficient to protect them through the past winter. [It is *C. grandiflora*. Ed.] We also enclose a few sprays of a dwarf-growing *Michaelmas Daisy*; the flowers are pure white, and the small ones are produced in great abundance. We have received it under the name of *Aster ptarmicoides*. You will also find a few sprays of *Rhodotypos kerrioides*. Its delicate white flowers are produced on the tips of the branches continuously through the season, and will be found a very useful hardy flowering shrub [Suitable for town gardens; the fruit is also interesting. Ed.]. A bed of *Statice sinuata* having been much admired, we enclose a few sprays. It can be raised readily every year from seed, and should receive much the same treatment as Stocks, Asters, &c. [Very pretty and varied in colour.]

HOME CORRESPONDENCE.

MARKET SALESMEN'S PRICES.—A word of caution to fruit-tree planters: take the advice of the writer and refrain from planting—do not be led away by agitators who advise you to plant for profit. If you do, you will bring trouble and vexation to yourself, and also an empty pocket. I quote in full the items of a small consignment of fruit sent to Covent Garden, July 29 and 31, viz.:—48 Peaches, 6d. per dozen, 2s.; 18 dozen Golden Gage Plums, 2s.; 9½ half-bushels Apples, 6d., 4s. 6d.; 36 Peaches, 4d. per dozen, 1s.; 48 Peaches, 4d. per dozen, 1s. 4d.; 40 Washington Plums, wall fruits, 1s.; 45 do., do., 1s. I may here state that the Peaches were not large, about 8 inches in circumference, some larger, all indoor fruit; the Apples were all hand-picked and selected, and the Plums all sorted, and wrapped, singly, in tissue-paper—these were very fine. Now, after deducting all expenses, carriage of empties and full price of tissue-paper, wadding, cotton-wool, time of picking, packing, selecting, salesman's commission, tolls, &c., the question arises how much out of pocket I shall be by the consignment? Certainly something considerable. Now, in the face of such absurd prices, is it not a folly to continue to plant fruit trees by the tens of thousands, for just a few to benefit by the transaction. We want a remedy, and a full control over the market; we are now in the hands of the salesman, we never see his books, returns do not come to hand for many days, possibly weeks, after goods are sold, and we positively know nothing further than that we have consigned our goods and we must wait and accept the miserable sum (if any) forwarded by the salesman. Looking at things in this light with regard to prices, one would really imagine shopkeepers must be making a fortune, that is, if they actually buy at these prices. If so, do the shopkeepers ask too high a price for their goods, that prevent a larger demand by the public? if they buy 8-inch Peaches at 4d. per dozen, surely they can be sold for 2s. per dozen, or even less, instead of the high prices we see marked up in the windows, which prevent people from indulging in a good Peach or Plum, and these low prices would increase the sale enormous and leave a good margin for quick returns. And again, hand-picked Apples at 1s. per bushel, ought to be

in everybody's reach. I must confess, being both a buyer and a seller, that there is an immense difference between the two occasionally. When running short, I have to buy goods not so good as my own, but very very far in advance of the prices I have received. I have a neighbour who is in a large way of business, and who attends Covent Garden Market regularly, but he tells me he is not lucky enough to buy at these uncommonly low prices, and is quite content to give 3s. per dozen for such Peaches as I received 4d. per dozen for in London. It would be read with much interest, I have no doubt, if senders would state in these columns the different amounts they have at times received for their Covent Garden consignments. *Alpha, an Old Contributor.* [Our correspondent has had large experience both as a private gardener and as a grower for market. Ed.]

FRUIT AND PROFITS.—There can be little doubt but that for every penny of profit which fruit-growers secure in such a plentiful season as is the present, the dealer, be he salesman, merchant, or mere retailer, obtains threepence. That is rather hard lines for the poor grower, but it is too frequently—especially where fruit is abundant—his share of the products of sale. Few persons, perhaps, would be so much surprised as the growers themselves, had they time and inclination to follow their own fruit from the market to the shop, and then see how far the retail price differs from that which he obtained. Perhaps the grower is his own salesman, and if so, he does rather better than does the unfortunate who entrusts the disposal of his fruit to others. But if he has obtained 3s. per bushel, he will find that it is retailed at from 10s. 6d. to 12s. per bushel. What wonder is it that with such a tremendous bulk of fruit in the market the public obtain so little advantage in the matter of cheapness? Were I about to start in life, it would not, under present conditions, be as a fruit-grower; that is a vocation like to that of a client in law, who exists that others may fatten. The grower produces, the dealer and the salesman grow rich on his productions. It all comes of our present absurd and vicious system of converging all of our fruit products to one centre, where the competition is of the keenest, and then having to return it to the consumers in myriads of ways, and through a few middlemen, so that the ultimate cost is enormously enhanced. Within some 3 or 4 miles of here there was a tremendous crop of Williams' Bon Chrétien Pears; they were sold on the trees at about 3s. per bushel. When I want to purchase a few at a shop, I am asked to pay 6d. for nine similar fruits, or at the rate of 12s. per bushel, and all because these Pears had been sent to Covent Garden to be sold a second time, and then brought back to Kingston to be sold retail a third time. That is how English people trade in fruit. *A. D.*

FURTHER NOTES ABOUT VICTORIA REGIA.—The story of the Victoria from its discovery to its introduction, and its behaviour under cultivation up to the present time, is a long one—too long, I fear, to be told in a note such as the Editor prefers to accompany a picture in this paper. I admit it was an oversight to have overlooked the important part played by Sir Joseph (then Mr.) Paxton, at Chatsworth, in the early stages of the introduction of the plant. I am also glad to learn that it is still thought worthy of cultivation at Chatsworth. Mr. Thomas is in error in supposing (see p. 68) that the plant was first flowered in 1840, and that it was then named after our present Queen. It may interest admirers of this glorious Water Lily if I repeat here what Dr. Lindley wrote about it in 1837, when he published an illustrated paper on the Victoria regia from material supplied by the late Sir R. Schomburgk. Lindley's words, written fifty-six years ago, are specially interesting now. He said:—"It is not less my duty than my inclination to concur with its zealous and enterprising discoverer (Schomburgk) in distinguishing by your Majesty's illustrious name by far the most magnificent species in the family of the Nymphaeae—one of the most noble productions of the vegetable kingdom—first found in your Majesty's South American dominions by a gentleman travelling under the auspices of your Majesty's Government, and our knowledge of which dates from the period of your Majesty's accession to the throne of these realms. That the reign of Queen Victoria may be as much distinguished in the annals of history as the majestic plant henceforward to bear that royal name is pre-eminent in the flora of its native country, is the earnest prayer of . . .

J. Lindley, Professor of Botany in University College, London, October, 1837." Lindley's prayer has been answered, for Victoria the Queen and Victoria the Nymph are still with us great, glorious, and distinguished, both of them. When Schomburgk sent his specimens and drawings to England, he proposed that the plant should be called *Nymphaea Victoria*, believing it to be a species of *Nymphaea*, but Lindley found after examining the specimens that it was a new and well-marked genus, and therefore proposed its present name. It was not till twelve years after this that the plant was introduced to Kew by means of seeds forwarded from Demerara, from which plants were raised and distributed, one going to Chatsworth and another to Syon. The seeds were received in February, 1849, and in November of the same year the Chatsworth plant flowered. It was soon after flowered at Syon and Kew. Paxton watched the development of his plant with keen interest, as is shown by the interesting account of it which he wrote for Sir William Hooker, who published it along with a series of magnificent pictures by Fitch, and a full history of the plant by himself, in an imperial folio book, entitled *Victoria Regia*. Paxton kept his plant through the winter of 1849-50. In exactly a year from the opening of the first flower (November 5, 1849), it had produced 150 leaves and 126 flowers. Some of the latter were removed in bud, with a view to strengthening the plant. I should like to be able to say, in answer to the remarks of "Vic" (p. 68), that no one who has grown a healthy, vigorous *Victoria* can have failed to observe that the rim of the leaf remains turned up long after the leaf has matured, and, indeed, until the leaf begins to fade and decay. Weak plants, however, do not produce these deep-rimmed leaves, the blade lying quite flat on the water. I send a photograph which shows a plant with at least sixteen full-sized leaves, every one of which has a well-turned-up rim. Whether the rim serves the purpose of keeping aquatic animals from damaging the leaf by climbing on to it (by-the-by, it would not prevent birds from landing upon the leaf), or whether it is, as some suppose, to keep the leaves from overlapping each other, are hypotheses which may be taken for what they are worth. It requires no microscope to see the perforations in the leaf. Singularly enough, Sir W. Hooker looked upon and described them as stomata. If "Vic" is ever in a garden where there is a full-sized, rimmed, healthy leaf of *Victoria*, he can easily see for himself the part these perforations play in getting rid of water from the surface of the leaf. It cannot get over the rim, nor will the evaporation theory "wash." The photograph herewith sent will convince him that the leaf-stalk must elongate very considerably after the blade has matured, i.e., grown to full-size. The photographs also show that three good-sized children in one case (I stated from memory that they were from ten to fourteen years of age; I now learn that they were from five to ten years of age), and a 6-foot man in another, were supported by the floating-leaves of a *Victoria regia* in the Botanical Garden at Rotterdam. The *Victoria* at Kew is in fine condition this year. W. W. [A full account, with figures of the Chatsworth plant, is given in our volume for 1849, pp. 740, 742. Ed.]

INCIDENTS OF THE SEASON.—In Ravenscourt Park, Hammersmith, a Horse-Chestnut tree is to be seen in blossom. About a month ago the leaves came off the upper portion of the tree; the abnormally hot weather since then has induced it to make a second growth, which has produced a quantity of blossom. The tree now presents a very unusual appearance, the upper part being clothed with pale green foliage and blossom, whereas the lower part still retains its old leaves. W. B. G.

A LARGE APPLE.—This morning a specimen of Peasgood's Nonsuch Apple was forwarded to me which had grown in the Maidstone district weighing 26 oz.; the fruit is handsome. It is quite possible that larger specimens have been grown during this exceptional season or prior to it, but it may interest your readers to know of this unusually large Apple. A very fine dish of twelve of this same variety was exhibited last week at the Hastings annual flower show. James Lake, London Road, St. Leonard's.

RATING GREENHOUSES.—In your "Answers to Correspondents" last week, p. 224, you mention the Worthing Case, and for further particulars refer "E. B." to the Nursery and Seed Trade Association, perhaps under the impression that the case was conducted by that Association. The Worthing Case

was fought entirely by the Market Gardeners', Nurserymen and Farmers' Association, of 32, King Street, Covent Garden, Sec., H. B. Bell, Esq. I know that at the time the Nursery and Seed Trade Association printed a full account of the case in their report, without mentioning which Association did the fighting; perhaps that is the cause of the error. This is not the first time I have observed it. W. Poupart, Marsh Farm, Twickenham.

ROYAL HORTICULTURAL SOCIETY.—An inspection has been lately made of an admirable trial of Onions at Chiswick, of some fifty rows, and of about forty-five so-called diverse sorts. Of necessity there is between them many very trifling differences, but that some have undoubtedly high merits, as presented by the trial, there could be no doubt. Some varieties that have obtained very great popularity as exhibition sorts, when grown under the forcing conditions, now so commonly applied to them, were here of no very special merit, and some especially showed want of correctness to character, some bulbs being flat, others globular, and even differing occasionally in colour. That sort of sportiveness is very characteristic of all Onions, but is particularly so of new ones. We understand that the committee who made an inspection finally selected and awarded three marks to Southport Yellow Globe, a fine globular variety, handsome, and even; and Southport Red Globe, almost a duplicate of the other, but the finest red Onion in the collection. Seed of these came from Mr. Deverill of Banbury, and Henderson of New York, and they are American varieties. A Southport White Globe, very handsome, is a bad keeper. Suttons' Al was, we learn, also awarded three marks; this is a very fine flattish globular and handsome bulb, showing a capital sample. Deverill's Coconut is the very best at Chiswick of all the deep globe-shaped Onions, giving a first-rate sample of its section, hard, clean, and keeping well. Henderson's Prizetaker, a fine clean, handsome, globular bulb, was also a capital sample in the row; Globe Madeira, Vilmoren, the finest of all the varieties; and Italian Tripoli, the finest and best of the white-skinned section. As many of the varieties have been sown again to stand the winter, a further interesting trial may be looked for next summer. The present one has been for the season of unexpected excellence. Potatoes, of which there is again an extensive trial, were next taken. Many of these showed no special merit, others were late, and will have to be seen again. The following were selected for the award of three marks, Suttons' Windsor Castle and Triumph, both high-class, handsome white, round, early Regent, stock from Messrs. Veitch & Sons; Jeannie Deans, flat, white, round; Lillie Langtry, red, round; and Red-Cliffe Kidney, flattish white. All these, and indeed several others, were splendid croppers, giving handsome tubers, but some did not satisfactorily pass the cooked ordeal. It is but fair to say, that at Chiswick, Potatoes are cooked remarkably well, and this year the tubers are exceptionally clean and good. It is, indeed, an unusual feature that of so many varieties and roots lifted for inspection, not a single speck of disease should have been seen, and many late sorts have the haulm in the most vigorous condition. This is certainly remarkable for Chiswick, so near to the end of August. Correspondent.

JUDGING AT FLOWER SHOWS.—At the Cardiff Flower Show last year I had occasion to blame the judges for giving the 1st prize in a class for a collection of cut flowers of hardy herbaceous perennials, twelve bunches distinct varieties, to a collection which contained Roses, Hydrangeas, and some other woody plants; and this year I have again reason to find fault with the judges for disqualifying a collection of "cut flowers, twelve bunches (exotics) distinct varieties," for containing a bunch of *Anemone japonica alba*. *Anemone japonica alba*—if I mistake not—was introduced to this country, and is therefore must be an exotic to all intents. If the wording of the schedule had been tropical exotics, I could have understood their decision, but as it is, I am surprised at the judges showing such a lack of knowledge of our English etymology. A. Pettigrew, Castle Gardens, Cardiff.

CEREUS GRANDIFLORUS (see p. 186).—As most of the *Cereus* grow in the Riviera gardens, and flower as freely as in their native habitat, I have had the opportunity of noticing the different kinds of insects which are probably the medium of fertilising their flowers. The plants, when growing in a somewhat shady position, do not entirely close their flowers during the day, and there is always sufficient room

for bees, which are the medium of fertilisation, to enter; but these insects do not seem to attack them until late in the evening, when the flowers commence to open, and transmit their odour. Then they may be seen swarming around the flowers; they become benighted, and perforce are obliged to remain in the flower all night. I have counted as many as seven prisoners in one flower. Another medium is a very large hawk-moth, which may be seen hovering around them in the evening. The moth is probably one of the order of Sphingidae, but certainly not a British species. Ants, too, swarm about the flower during the day for the nectar; but for all these means, they do not fertilise freely, as out of several attempts to cross-fertilise them with other species, I have, at present, only obtained one. *C. peruvianus* and *C. serpentinus* fertilise quite freely artificially, but they do not fertilise themselves. The former species is at this time of the year a very fine sight, with growths 20 feet in height, and studded with flowers, and buds from base to summit. Riviera.

A TREE POINSETTIA.—On the back wall of a house at Seabam Hall, in Durham, is a Poinsettia which covers a space of 11 yards by 8. This plant has all the appearance of a tree, the stem at the bottom measuring 10 inches in circumference, and many of the branches being almost as thick. The leaves are much larger than most of those seen in pots, and of a deeper green. It is the picture of health, and shows no signs of old age or decay. Mr. Draper informed me that he has 400 heads of bracts from it during the season. Lagabond.

COLOUR OF MICHAELMAS DAISIES.—The hot sunny weather is producing a remarkable effect on the colour of some of the Michaelmas Daisies. Mr. Hartland, of Cork, wrote to me to say that the variety known as Harpur Crewe, which generally opens pure white, is this season pale lilac; and on looking at my own plants, I find the colour of the few open flowers the same. Other Michaelmas Daisies are so different from their normal colour, that I have spudded up several under the belief that the labels had been wrongly placed. I now believe that the abnormal season has caused a change of colour in them. C. Wolley Dod, Edge Hall, Malpas.

BEDDING BEGONIAS.—In the Chiswick Gardens, two of the best beds of flowers are comprised respectively of the varieties Crimson Gem and Duchess of Edinburgh, both of the *B. semperflorens* type. The former of the two is very striking, especially so this year, when tuberous Begonias have, in a large measure, failed. The plants make a very dense growth, and the bronze-chocolate leaves are in contrast to the profusion of crimson flowers; it is one of the most effective beds I have seen this season. The variety Duchess of Edinburgh is distinct. This is vigorous in growth, broad in the leaf, and quite of a polished green colour. The flowers, which are produced freely, are white tinged with pink. There is a future for the varieties of *B. semperflorens*, and they certainly make excellent bedders in all seasons. V.

SOCIETIES.

ROYAL SCOTTISH ARBORICULTURAL

(Continued from p. 214.)

In spite of late hours, the party were early astir on the following (Wednesday) morning, visiting St. George's Chapel and the Albert Memorial Chapel, and being grouped for a photograph before the start on their 7-mile drive to Cliveden.

Cliveden.—Passing through Eton and Burnham the spot was soon reached, and after admiring some fine specimen Conifers, the party were received on the terrace by the Duke of Westminster, who cordially invited them to go over his grounds. After several distinct views of what are, perhaps, the most lovely scenes in England—wooded slope, winding river, wide meadows, and distant tree-clad hills—they descended to the river-bank, where ancient Yews are festooned with Clematis, and cling with gnarled roots to the chalk, which here is bare of soil. Some fine Alders, over 6 feet round, overhung the stream, and near the boathouse, a Tulip-tree, about 105 feet in height was taped as 9 feet 4 inches in girth.

Dropmore.—In this 800 acres are probably the finest named and dated collection of Conifers in the world, though the oldest of them, a Lebanon Cedar, now 13 feet 7 inches in girth, dates only from 1792. Among the many well-known and oft-described

specimens, attention was specially drawn to the *Abies nobilis*, planted in 1835, now 76 feet in height, and 7 feet 5 inches in girth; the many fine trees dating from 1839, including *Pinus insignis*, now 90 feet high, and 10 feet 10 inches in girth; those of 1843, including *Picea Morinda*, 61 feet in height, and *Abies cephalonica*, 71 feet; and those of 1861, including *A. Albertiana*, 58 feet, and *A. grandis*, 64 feet high. Of course, the great Chilean Pine, *Araucaria imbricata*, planted in 1830, now 69 feet high, and 8 feet 3 inches in girth, and still more, the Douglas Fir of the same age, now 110 feet high, and over 11 feet in girth, were objects of universal interest to the party, and but little attention could be spared for aught else but Conifers. A fine plant of *Erythrina crista-galli*, and the practically wild condition of *Impatiens parviflora*, did not, however, escape notice.

Burnham Beeches.—A few minutes' drive from the stables of Dropmore, brought us into Burnham Beeches, 374 acres purchased in 1879 by the Corpo-



FIG. 45.—QUEEN ELIZABETH'S OAK, WINDSOR.

(See Report of Scottish Arboricultural Society.)

ration of London as a pleasure-resort for the people of the great city, which lies some twenty-five miles to the eastward. Here a welcome al-fresco lunch had been provided by Mr. Harry Veitch, who lives near-by; and here, too, under the picturesque old pollards, we were met by the forester, Mr. Forbes, who led the way through the property. Divers were the opinions expressed, one enthusiast even advocating the entire removal of the "monstrous deformities," and the replanting of the area on economical principles with Scots Fir! Most of us, however, recognised the importance of purely æsthetic considerations, though it is not perhaps agreed, as has been supposed, that the process of pollarding actually adds to the longevity of a tree. The return drive near Stoke Pogis enabled some of the visitors to see the scene of Gray's immortal Elegy, and then, after a hurried tea at Windsor, a special train conveyed us to Southampton, where a display of summer lightning, unequalled for many years, and but seldom seen in the north, seemed to have been prepared for our delectation. [Numerous views of Windsor, Cliveden, and Dropmore have been given from time to time in our columns, and in view of the special interest attaching to them, we now give views of two of the famous Oaks at Windsor. Ed.]

(To be continued.)

WELSHPOOL HORTICULTURAL.

AUGUST 10.—The old Society came to an end about four years since, but through the exertions of the present enterprising Mayor, E. O. Jones, Esq., and a few others, it was determined to resuscitate it, and accordingly a new committee was formed and a fresh secretary appointed. The committee having enlisted the services of W. Forrester Addie, Esq., agent to the Earl of Powis, as Secretary, through him received permission from the Earl of Powis to hold the show in the Deer Park of about 700 acres, and also to open the gardens and terraces to the public, an attraction of itself sufficient to secure its success, and when we say nearly 8000 people visited the show, it appears at once how the public appreciated the kindness of the Earl of Powis. The committee have a good balance of £100 or more. The gentry of the neighbourhood assisted in sending plants, flowers, and fruit; these, with the fine display of cottagers' produce, made a good show.

Messrs. Cutbush & Son of London sent a nice col-

CARDIFF HORTICULTURAL.

AUGUST 15, 16.—The fifth annual show was held in the Sophia Gardens on the above date. The great heat, though not interfering much with the enjoyment of the visitors—thanks to the shade of the number of large trees in the gardens—affected the exhibits of cut flowers very seriously, many of the Roses, Dahlias, and Begonias collapsing early in the afternoon of the first day.

The quality of the exhibits was highly satisfactory, and the competition so close in some cases, that the judges had no alternative but to award equal prizes. That this has been a warm sunny season could easily be seen by the many samples of ripe, highly-coloured fruit exhibited, which appear to indicate that Apples, Pears, Plums, and Peaches are of very good quality in this district, notwithstanding the long drought. The Grapes shown were also of good quality. Vegetables were well represented both in the open and cottagers classes.

Cut Flowers.—For twelve hybrid perpetual Roses, named varieties, three blooms of each, Mr. R. Crossling, of Penarth Nurseries, took 1st prize; Duke of Wellington, Duchess of Bedford, Fisher Holmes, Lord Bacon, and Mary Fitzwilliam were prominent in this collection. S. P. Budd, Esq., of Bath, was 2nd.

Mr. S. Treseder, Pwll-coch Nurseries, Cardiff, was a good 1st, for twelve varieties of Tea Roses, three of each variety. Some of the best blooms were Marie Van Houtte, Francisca Krüger, Hon. Edith Giffard, and Perle des Jardins. S. P. Budd, Esq., was again 2nd.

Messrs. Keynes, Williams & Co. took the 1st place in the competition for twenty-four distinct varieties of H.P. Roses; and S. P. Budd Esq., was 2nd.

Mr. S. Treseder was again 1st, for eighteen distinct varieties of Tea Roses, the varieties being much the same as those shown by him in the larger collection. S. P. Budd, Esq., again closely following, took the 2nd prize.

Geo. Humphries, Esq., of Chippenham, was awarded 1st prize for a collection of twenty-four distinct varieties of Dahlias; and Messrs. Keynes, Williams, & Co., Salisbury, were placed 1st in the class for Cactus Dahlias.

The best collection of twelve bunches of hardy herbaceous flowers was exhibited by T. Every, Esq., of Bath. J. Tout, Esq., Llanblethian, took 1st; and G. Shrewring, Esq., 2nd, for Gladioli.

For placing *Anemone japonica* in a collection of twelve bunches of exotic flowers, the Marquis of Bute, the only exhibitor in this class, was disqualified by the judges!

Plants.—In the collection of twelve stove and greenhouse plants in bloom, Mr. J. Cypher, Cheltenham, took foremost place, with well-grown specimens of *Ixora Williamsi*, *Statice profusa*, *Erica Turnbulli*, *Anthurium Andreanum*, *Allamanda nobilis*, *Bougainvillea glabra*, &c. Messrs. Heath & Son, Cheltenham, were 2nd with a very good collection.

Mr. J. Cypher took the lead for eight fine foliage plants, distinct varieties, and Messrs. Heath & Son, were 2nd. Both collections consisted mostly of large specimen *Crotons* and *Palms*.

Mr. J. Hillyard, Cardiff, an amateur, was 1st for six specimen *Fuchsias*, and was also awarded a special prize for the same, as representing the best cultural skill in the show.

Colonel Sir E. S. Hill of Llandaff (gr., Mr. Clarke) exhibited eight distinct varieties of exotic Ferns, for which he obtained 1st prize, and was also as successful in exhibiting four stove and greenhouse plants in bloom.

For a group of plants, arranged for effect, occupying a space of 100 square feet, Colonel C. H. Page, Llandaff (gr., Mr. W. Hockey), was 1st; and Mr. Case, of Rumney, 2nd prize. Colonel Sir E. S. Hill was placed 1st for a group occupying 50 square feet arranged for effect.

C. Jenkins, Esq., Penylan, Cardiff (gr., Mr. Thos. Malpas), obtained 1st prize for a collection of six distinct varieties of *Caladiums*. For a single specimen of a stove or greenhouse plant in flower, the Marquis of Bute was awarded 1st place for a good specimen of *Souvenir de Charles Turner* Pelargonium.

Fruit.—M. Biddulph, Esq., Lledbury Park (gr., Mr. Davies), was placed 1st for a collection of six bunches of Grapes, not less than three distinct varieties. Black Hamburg, Muscat of Alexandria, and Gros Maroc were the varieties exhibited. The same gentleman carried off 1st prizes for three bunches of Muscat of Alexandria, three bunches of Black Alicante, and three bunches of Gros Maroc. F. M. Franklen, Esq., St. Hilary, obtained 1st prizes

lection, including several new plants. Mr. Murrell of Shrewsbury showed very fine Gladioli and Roses. Messrs. Prichard of Shrewsbury had a fine stand of plants and flowers. Messrs. Jones & Sons of Shrewsbury filled a big space with bouquets, wreaths, plants, and cut flowers; and Mr. Porter of Oswestry, and Messrs. Evans & Sons of Llanymenash showed good groups of plants and fruit. From Mrs. Naylor, Leighton Hall, came a large group of flowering and foliage plants; and from Mrs. Curling, The Brooklands, two groups of stove and greenhouse plants, showing good cultivation; Mrs. Lovel, Llanychydol, having a nice group of plants.

Groups of plants were arranged in the centre of the tents, with side tables having projections at intervals, was a pleasing variation from the old plan of arranging seen at most shows. One of these long cross tables was filled with choice fruit from his lordship's three gardens in Montgomeryshire, including some finely-coloured Grapes on pot Vines, trained along the top of the table, having a nice effect among the groups of plants.

Herbaceous flowers were well shown by Messrs. Dicksons of Chester, and several other gentlemen.

A class was provided for field grasses and flowers to be named, and this brought out a very good competition among young farmers of the district.

for three bunches of Black Hamburg, three bunches of Foster's Seedling, and three bunches of Pearson's Golden Queen. V. Stuckey, Esq., took a 1st prize for a single bunch of Black Hamburg, the Marquis of Bute for a single bunch of Muscat of Alexandria, and the Earl of Cork for one bunch of Foster's Seedling.

The Marquis of Bute secured all the leading prizes for Melons and Pine-apples.

With a collection of Grapes, Peaches, Melons, Nectarines, and Plums, M. Biddulph, Esq., took 1st place for the best six dishes of dessert fruit, and V. Stuckey, Esq., 2nd.

Three 1st prizes were awarded to the English Fruit and Rose Company of Hereford for a collection of six dishes of dessert Apples, six dishes of culinary Apples, and for one dish of dessert Apples.

Col. Gaskell, Caerleon, took 1st prize for a dish of Cherries, and 1st for a dish of Black Currants.

Vegetables.—The principal prize-takers for vege-

entries. Mr. Thomas Wilkins, gr. to Lady Theodora Guest, Inwood House, Shaftesbury, led the way with a good lot.

With six exotic Ferns, Mr. Wilkins was easily 1st, staging good healthy-looking plants of *Cyathea medullaris*, a grand *Adiantum Farleyense*, *A. cuneatum*, *Davallia Mooreana*, *Thamnopteris nidus* avis, and *Gymnogramma Wettenthaliana*.

Mr. Bedford, Harnham Nursery, Salisbury, had the best half-dozen *Fuchsias*, showing fairly well-flowered pyramidally-trained plants.

Mr. Arthur Robey, gr. to Captain Greenwood, Harnham Cliff, Salisbury, was well 1st for *Begonias* (tuberous-rooted); his plants were fresh, sturdy, and well grown, the flowers being large, well formed, and of distinct shades of colour.

Groups of miscellaneous plants arranged for effect, in a semicircle 12 feet in diameter, are always a feature at this exhibition. Mr. Willes was 1st, for a light and tastefully-arranged group of *Crotons*,

Brunswick Figs of good size and colour, Blenheim Orange Melon, large and well-coloured Williams' Bon Chrétien Pears, white Magnum Bonum Plums, and Pine-apple Nectarine, the latter the only weak dish in the collection; Mr. A. Crossman, gr. to J. Brutton, Esq., Yeovil, was a good 2nd.

Grapes were shown extensively and well, Mr. Ward was a good 1st for three bunches of White Muscats, being also well ahead in the class for any other white than Muscat of Alexandria, staging neat and well-coloured bunches of Golden Queen, fine in berry and finish; Mr. Warden being a capital 2nd, with Buckland Sweetwater, fine in every respect. Mr. Chalk, gr. to George Reid, Esq., Westwood, Salisbury, was 1st in a class for three bunches of Black Hamburg; and Mr. Warden was a dangerously-close 2nd. The last-mentioned exhibitor was a long way ahead in the class for any other Black Grape, showing handsome bunches of Muscat Hamburg, such fine bunches in size and colour as are seldom met with.

Pines were not extensively shown. Mr. Crossman was 1st with a medium-sized Queen, having well-developed and brightly-coloured pips.

Fourteen Melons were shown, a variety named County Councillor securing 1st prize for the exhibitor, Mr. Palmer, Andover.

Peaches and Nectarines made a pretty good show. Mr. Wilkins was 1st for the former with Sea Eagle, and Mr. Chalk occupied a like position for the latter, showing good fruits of Pine-apple.

Apples and Pears.—Mr. F. Smith, gr. to the Bishop of Salisbury, was 1st for three dishes of dessert Apples, staging nice, clean, even, bright-coloured fruits of Worcester Pearmain, Mabbett's Pearmain, and Celine. Mr. Wilkins was accorded a similar honour for culinary varieties, showing large clean fruits of Blenheim Orange, Lord Suffield, and Peasegood's Nonsuch. Mr. Hughes was 1st for four dishes of Pears, Dr. W. D. Wilkes, The Canal, Salisbury, securing a like honour in the amateurs' classes for three dishes of Pears, with grand fruits of Pitmaston Duchess, Glou Morceau, and Williams' Bon Chrétien.

Vegetables.—Three collections of twelve kinds were shown in fine condition in the open class by Mr. Wilkins, who was a good 1st. The collection contained grand examples of Favourite Onion, Autumn Giant Cauliflower, Satisfaction Potato, Stratagem Pea, New Intermediate Carrot, &c.

Cut Flowers were shown in large quantities and well. Dr. D. Seaton, Rutland Lodge, Bitterne, was 1st for twenty-four Roses, distinct varieties, with good blooms. Mr. Evans, gr. to Lady Ashborton, Melchet Court, Romsey, obtaining a like distinction for a dozen blooms; and Mr. Budd was to the front for eighteen bunches of cut flowers, distinct, staging a choice lot.

Miscellaneous exhibits made a show in themselves. Messrs. Keynes, Williams, & Co., Salisbury, had an arrangement of five pyramids of Dahlias on the staging, filling in between with choice Roses, pieces of rough cork being introduced into the edging with good effect, which, when contrasted with the foreground artistic combination of plants, Roses, water, and Ferns, was very telling.

Messrs. Robert Veitch & Son, Exeter, had a grand display of herbaceous and alpine plants and flowers in great variety; also a fine assortment of Apples. Mr. Ladhams, of Shirley, also put up a fine lot of herbaceous plants and flowers.

READING HORTICULTURAL.

AUGUST 16.—Like some other societies, the old established one at Reading has had its reverse, and instead of holding two shows as formerly, it now holds but one each year; and on this occasion the committee were able to occupy their old position within the Abbey ruins, they having succeeded in renewing the large tent which was blown to pieces two or three years ago. There is one disadvantage attending such a site: that it requires a larger number of plants to fill it; and on the above date certain entries of plants were not forthcoming on the morning of the show day, which caused serious gaps in the arrangements, and materially affected the display. The simple act of courtesy, of sending a postcard on the previous day, would prevent a great deal of justifiable irritation.

Plants fell below their usual number. Mr. J. F. Mould, nurseryman, Pewsey, had a very good group of six plants, including a fine example of *Erica Eweriana*, which was the subject of much admiration. Mr. Mould was also the only exhibitor of six foliaged plants, taking the 1st prizes in each class.



FIG. 46.—WILLIAM THE CONQUEROR'S OAK, WINDSOR.

(See Report of Scottish Arboricultural Society.)

tables were G. Shewring, Esq., Llandaff (1st for the collection); W. Moore, Esq., Wenvoe; W. W. Nell, Wenvoe; T. Richards, Esq., Salley; and G. Garraway, Esq., of Bath.

WILTS HORTICULTURAL.

AUGUST 16.—The Wilts Horticultural Society held its annual show in Wilton Park on the above date, the weather being good. Lord Pembroke kindly granted permission for visitors to the show to view the beautiful grounds and flower gardens surrounding Wilton House. The attendance was good, and Mr. W. B. Williams, the energetic Hon. Secretary, is to be congratulated upon the success.

Plants (open).—Three good collections of twelve stove and greenhouse plants, six foliage and six flowering, were put up by Mr. Finch, gr. to J. Marriott, Esq., Queen's Road, Coventry; Mr. Willes, Winchester Road, Shirley; and Mr. Peel, gr. to Miss Todd, Sidford Lodge, Shirley, by whom the prizes were won in that order. Mr. Finch staged a good all-round dozen plants, including *Ixora Fraseri*, *Dipladenia Thomas Speed*, *Erica Marnockiana*, *Kentia Fosteriana*, *Cycas circinalis*, *Croton Queen Victoria* and *C. Mortii*, &c.

In the class for nine stove and greenhouse plants, four in flower and five foliage, there were three

Celosias, *Ixoras*, *Bridal Wreath* (*Francoa ramosa*), &c., set in a groundwork of *Adiantum cuneatum*, with graceful Palms in the back, and the whole edged with *Panicum variegatum*.

Mr. Wilkins was a good 1st in the group confined to gentlemen's gardeners, and arranged in a semicircle of 10 feet in diameter. An edging of dwarf variegated grass and *Caladium argyrites* told well in this arrangement.

In the class confined to amateurs residing within a radius of six miles of Salisbury, Mr. Frank Pearce, High Street, Salisbury, was the winner of a Silver Cup value £5, for a group of plants arranged in a semi-circle 10 feet in diameter; and Mr. Hinman, gr. to H. C. Gregory, Esq., the Island, Salisbury, led the way in a class for a group arranged in a space two feet less in diameter than that in the preceding class.

Mr. Robey again took 1st place for *Begonias* in the amateur class, beating Mr. Hughes, gr. to Wm. Baring, Esq., Norman Court, West Dean.

Fruit, Open Classes.—Fruit was shown well in most of the classes, and was of generally high order.

For a collection of eight kinds (Pine excluded), Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was well ahead, showing large solid, tapering bunches of Muscat of Alexandria and Black Hamburg Grapes, fine in berry and finish, and carrying a good bloom, large Sea Eagle Peaches,

Stove and greenhouse Ferns were a good feature. Mr. Willis, gr. to H. J. Simonds, Esq., Caversham, took the 1st prize; Mr. Dockerill, gr. to G. W. Palmer, Esq., M.P., Reading, was a good 2nd. Mr. Willis took the 1st prize for three Orchids. Mr. Mould had the best new or rare plant, showing a new variety of *Statice* raised by Mr. Chapman of Hawkeyard Park. Mr. Dockerill's 1st prize six *Lycopodiums* were perfect, large in size, and beautifully grown. Mr. Bright, gr. to J. B. Karslake, Esq., had three good *Fuchsias*; and Mr. Dockerill some capital specimens of *Lilies* in pots. *Coleus* were in the form of well-grown and coloured bushes; and groups of three *Palms* were finely shown. Mr. Brown, gr. to A. B. Welch-Thornton, Esq., Beaurepaire Park, Basingstoke, taking the 1st prize; Mr. Willis was 2nd, having a very fine *Latania borbonica*.

The best group of plants of large size, arranged for effect, came from Mr. Pope, gr. to J. P. White, Esq., Wargrave; Mr. Bright taking the 2nd prize.

The best small group was staged by Mr. Frost, gr. to W. Palmer, Esq., Westlands; Mr. Coates, gr. to R. Hewett, Esq., St. Mary's Hill, was 2nd.

In the amateurs' division for plants, the leading exhibitors were Messrs. Brown, Mr. Maskell, gr. to J. O. Taylor, Esq., Cravenhurst; and Mr. Wilson, gr. to Mrs. Garland, Lower Redland.

Cut flowers were represented by spikes of *Phloxes* from Messrs. Such of Maidenhead and Cheal & Son of Crawley; *Dahlias* by Messrs. S. Mortimer, Farnham, and J. R. Tranter, Henley; single *Dahlias*, very fine stands, by Messrs. Cheal and Such. Collections of eighteen bunches of cut flowers were finely shown by Mr. Aberly and Mr. Such; and twelve bunches by Mr. Howard and Mr. Bright; *Gladioli* by Messrs. Cheal & Sons and Mr. Such. The special prizes offered by Messrs. H. Cannell & Sons, for blooms of double and single *Begonias*, were taken by Mr. Brown. As usual, table decorations, bouquets, &c., were a pleasing feature.

Fruit was extensively shown. The best eight dishes came from Mr. Smith, gr. to R. Ovey, Esq., Badgemore House, Henley; Mr. Maxim, The Gardens, Heckfield Place, was 2nd. With six dishes, Mr. Ashman, gr. to C. T. D. Crews, Esq., Billingbear, was 1st. Mr. Howard had the best three bunches of Black *Hamburgh Grapes*, very finely finished. Mr. Osman, Ottershaw Park Gardens, the best of any other black, staging *Alicante*. Mr. Lane, gr. to Miss J. D. Smith, King's Ride, Ascot, had the best three bunches of *Muscat*, splendidly finished. *Peaches* and *Nectarines* were very fine. Mr. Bowerman, gr. to C. Hoare, Esq., Hackwood Park, taking the 1st prize in both classes. *Figs*, *Plums*, *dessert* and *kitchen Apples*, *Pears*, *Melons*, *Cucumbers*, and miscellaneous collections of fruit were in excellent character also.

Vegetables were scarcely as numerous as usual, but the quality was very fine. Special prizes were offered by Mr. J. Sharpe, Bardney; Mr. C. Fidler, Reading; Messrs. James Carter & Co., Holborn; and Messrs. E. Webb & Sons, Wordsley; and in every case excellent produce was shown. There were classes also for cottagers.

Miscellaneous collections included a most artistic group of plants, decorations, &c., from Mr. George Phippen, Reading; cut blooms of double and single *Begonias*, and bunches of *Ivy-leaved Pelargonium Beauty of Castle Hill*, from Mr. R. Owen, Castle Hill Nursery, Maidenhead; a group of hardy flowers from Messrs. W. Cutbush & Son, Highgate; fruit and cut flowers from Messrs. Veitch & Son's nursery at Langley; *Melons* from Mr. T. J. Stacey, Caversham; *Tomatoes*, *Apples*, &c., from Mr. R. Ballimore, Caversham; *Tomatoes* and *Cucumbers* from Mr. G. T. Pontin, Wokingham; very handsome *Cucumbers* from Mr. S. Mortimer, Reading; *Grapes*, &c., from Mr. R. Churchman, Bracknell; *Grapes* and other fruits from Mr. Frank Lees; and some boxes of capital *Roses*, &c., from Mr. C. Turner, Slough.

It should be stated that the prizes in the classes for collections of fruits were given by Messrs. Sutton & Sons, Reading.

HASTINGS HORTICULTURAL AND FLORICULTURAL.

AUGUST 17.—This old established society was favoured with beautiful weather for the annual exhibition, which has not been the case, except in one or two instances, for many years.

For eight varieties of stove and greenhouse plants (*open*), Mr. Portnell, gr. to Sir A. Lamb, was 1st; and Mr. A. Gadd, gr. to A. Eagles, Esq., 2nd. Mr. Gadd was also 1st for six varieties, being closely

followed by J. Warren, Esq., of Handcross Park, Crawley.

For variegated and ornamental plants, also for exotic Ferns, J. Warren, Esq., was 1st; Mr. E. C. Gilbert, of Springfield Nursery, being a good 2nd in each case. J. Warren, Esq., was 1st for a collection of six specimen plants. For a specimen foliage plant, J. Warren, Esq., and Mr. E. C. Gilbert were 1st and 2nd, this order being reversed for a specimen in bloom.

Roses.—Twenty-four varieties, 1st, Messrs. Woolard & Son; 2nd, G. W. Piper, Uckfield; 3rd, A. Slaughter, Esq., Steyning; the competition being very close. For twelve varieties, Mr. C. M. Carter was 1st.

Dinner-table Decorations.—Mrs. Morris and Mrs. Mole were 1st and 2nd respectively. For a group of plants arranged for effect, Mr. E. C. Gilbert and Mr. A. Gadd shared the honours.

Fruit.—For a collection of six dishes, 1st, Mr. T. Portnell, was 1st; Mr. J. Snow, 2nd. Mr. G. Helman, gr. to Viscount Gage, was 1st for dessert, and Mr. W. Allen, gr. to Lord Brassey, 1st for culinary Apples. For Black *Hamburgh* and White *Grapes*, Mr. F. Crossman, gr. to Captain Dick, was 1st; Mr. J. Snow being a good 1st for any variety of black *Grapes*. For scarlet and green-fleshed *Melons*, the 1st prizes were taken by Mr. S. Golding and Mr. F. Crossman respectively. The best system of packing fruit for parcel-post transit was won by Mr. W. Robinson, gr. to Mrs. Meryon, Rye; Mr. T. J. Mitchell being a good 2nd.

In the amateur classes, for a collection of stove and greenhouse plants, six varieties, Mr. T. Portnell, gr. to Sir A. Lamb, was 1st; Mr. Morris, gr. to C. J. Edden, Esq., being 1st for four varieties, and also for ornamental foliage-plants. For a specimen foliage-plant, and also for one in bloom, Mr. T. Portnell was 1st.

Roses.—A. Slaughter, Esq., Steyning, was the principal winner; and Mr. C. M. Carter was 2nd.

The best show and fancy *Dahlias* were from Mr. F. W. Mitchell; and Mr. J. Stredwick was 1st for *Cactus* and *Pompon varieties*, being closely followed in each class by Mr. J. Budgeon.

Mr. J. Snow and Mr. F. Morris were 1st and 2nd for a collection of cut flowers. The competition was keen throughout, hardly any of the 133 classes failing to show competition.

DEVON AND EXETER HORTICULTURAL.

AUGUST 18.—The annual summer exhibition was held on the public grounds of Northernhay, Exeter, by the permission of the town council. The entries were not quite so numerous as usual, even though the names of several fresh exhibitors appeared among the competitors. The cut flower classes were tolerably well competed for, and in almost every case excellent stands of flowers were staged. Plants were as usual shown in good form, but limited to a very few competitors. Fruit exhibits were very much below the usual standard, for which no doubt the dry weather has much to answer for. *Vegetables* were shown in excellent condition. We can only mention a very few of the exhibits.

Plants and Flowers in Pots.—Twelve stove and greenhouse plants, six in flower, and six foliage. 1st, Mr. Rowland, gr. to Colonel Brock (Silver Cup), *Ixora Williamsi*, *Clerodendron Balfourii*, *Allamanda nobilis*, *Rondeletia speciosa*, *Dipladenia hybrida*, *Ixora princeps*, *Seaforthia elegans*, *Crotona Andreana* and *Disraeli*, *Latania borbonica*, *Kentia Fosteriana*, and *Anthurium Warocqueanum*.

Six stove and greenhouse flowering plants, 1st, Mr. Rowland, with nice fresh pieces of *Ixora Fraseri*, *Bougainvillea glabra*, *Dipladenia hybrida*, *Allamanda nobilis*, *Clerodendron Balfourii*, and *Stephanotis floribunda*. Eight stove and greenhouse Ferns, distinct, Mr. Barnes, gr. to Rev. Hamilton-Gell, was placed 1st, with a capital lot, including *Microlepia hirta cristata*, *Nephrolepis exaltata*, *Adiantum cardiolobum*, *cuneatum*, *concinnum latum*, *Neottopteris nidus*, *Davallia fijiensis*, and *Cibotium princeps*.

Miscellaneous group of plants.—Arranged for effect in a space 12 feet by 16 Silver Cup. Mr. Rowland again took 1st, with an exquisite arrangement.

Fruit.—Collection of fruit, ten dishes: 1st, Mr. J. Lloyd, gr. to V. Stuckey, Esq. Collection of fruit, six dishes: 1st, Mr. T. Heath, gr. to Sir W. H. Walrond. Mr. Bull, gr. to General Buller, took 1st for *Pine-apples*. Mr. E. J. Mearles, gr. to W. Gould, Esq., took 1st for Black *Hamburgh Grapes*. Mr. W. Connolly, gr. to J. R. C. Talbot, Esq., took 1st for any other variety (*Muscat of Alexandria*). Mr.

R. Pike, gr. to Rev. H. Clerk, 1st, for *Madresfield Court Grapes*. Mr. Lloyd took 1st for *Nectarines*. Mr. W. Davy, gr. to P. Benmore, Esq., 1st, for *Buckland Sweetwater Grapes*. Mr. Martin took 1st for *Melon Green-flesh* and *Morello Cherries*. Mr. Mairs, gr. to Sir J. Shelly, took 1st for *Apricots*, *Apples*, and *Plums*.

Vegetables.—For a collection of twelve kinds, Mr. Mairs was a good 1st, with splendid examples of *Celery*, *Wright's Giant White*; *Carrot*, *Veitch's Intermediate*; *Cauliflower*, *Veitch's A Giant*; *Pea*, *Duke of Albany*; *Cucumber*, *Carter's Model*; *Tomato*, *Ponderosa*; *Turnip*, *Veitch's Red Globe*; *Onion*, *Ailsa Craig*; *Brussels Sprout*, *Veitch's Exhibition*; *Leek*, *Renton Monarch*; *Runner Beans*, *Ne Plus Ultra*; *Potato*, *Satisfaction*.

The nurserymen exhibited extensively. Messrs. Veitch, of the Royal Nurseries, Exeter, exhibited a superb lot of foliage and flowering plants; also cut flowers of *Gladioli*, &c. Messrs. Jarman & Co., of Chard, staged a grand stand of miscellaneous exhibits. Mr. Kerawill, of Exeter, occupied the whole of one side of the centre stage in one tent with a splendid lot of decorative *Palms*, &c. Mr. Randall put up a fine group of plants, and several boxes of seasonable bloom. Mr. Ireland, Barnstaple, staged a large collection of *Apples* and fruits in remarkably advanced stage. Mr. Smale, of Torquay, had a large assortment of *Dahlias*, &c., in boxes, of excellent quality.

NATIONAL CO-OPERATIVE FLOWER SHOW AND FESTIVAL.

AUGUST 18, 19.—Year by year the horticultural department of this great festival at the Crystal Palace grows in extent and importance, and it is undoubtedly the leading feature in a comprehensive programme. It was reasonable to suppose that in the face of such a dry summer there would have been a considerable falling off in quantity and quality; but the number of entries fell very little short of last year, while the produce actually showed an increase of twenty per cent. The whole of the spacious nave, with the exception of the space under the centre transept required for the concerts, was occupied by the horticultural produce; and in addition to the 300 tables supplied by the Crystal Palace Company, representing some 5,500 superficial feet, sixty extra tables had to be provided, and they were in most instances inconveniently crowded. What falling off there was in the way of vegetables, such as Beans, Peas, and Cauliflowers, was amply compensated for in the astonishing increase in the number of plants and cut flowers, many of them brought from considerable distances; and also in the case of fruits, which were produced in much larger quantities than on any previous occasion, and of a quality previously unknown at these festivals. The rate of increase this year was something like fifty per cent. on the part of working-men, and seventy-five per cent. from gentlemen's gardeners. This year the experiment was tried of having the vegetables staged and judged on the Friday, the plants and cut flowers on Saturday, and it appeared to have answered very well, and greatly relieved the immense pressure of work of a one day's show, so many packages having to be opened and staged by the employés of the Agricultural and Horticultural Association, who originated and carries out the flower show. Sixteen judges were required to make the awards at the flower show, in marked contrast to the first two exhibitions held in the then conservatory of the Royal Horticultural Society, in 1886-87, when two only were required. So great an impetus has been given to gardening among the working-men all over the country who are members of co-operative societies by the annual flower show, that many societies have an exhibition in connection with their local co-operative society, and the area of allotment gardening has grown enormously in many localities in consequence.

Section 1 of the schedule, comprising nearly 130 classes for working-people only; all who are in any way professionally connected with gardening are relegated to section 11. A very interesting series of competitions was for a collection of six vegetables neatly arranged, shown from all parts of the United Kingdom, and in order to place the exhibitors on a footing of equality it is divided into eight districts, each showing by itself. Nothing appeared to have been shown from the northern counties of Cumberland, Westmoreland, Northumberland, and Durham. A member of the Sawley Society sent the best collection in the North-western District, extending from Nottingham through Yorkshire, Lancashire and Cheshire, to Anglesea. A member

of the West Haddon Society was 1st in the Midland District, represented by a line drawn from Lincoln to Shropshire, Bromley was 1st, and Norwood 2nd and 3rd in the Metropolitan District. The Southern District No. 1, including the Northern Home Counties, had Banbury and Oxford 1st and 2nd. The Southern District were fortunate with Crawley and Horsham; the Western District, Chippenham and Lechlade. Scotland and Ireland were represented by a solitary collection, but it had so suffered upon the journey as to be out of condition. We may say generally of this section that vegetables, with few exceptions, were very good; Onions very fine and plentiful, Beet good, Cabbage much better than could have been expected, Carrots very fine, the Horn type in particular; Celery, red and white, very good; Cucumbers plentiful, the ridge varieties a little stale; Leeks small; Lettuce, Cos and Cabbage very good; a few dishes of Peas very good; Radishes remarkably good in all types; Shallots very good; Potatoes large, handsome, clean, and bright, though some were rough; Tomatoes very good; Turnips as good as could be expected; and Vegetable Marrows in great numbers and of all sizes. These remarks apply equally to section 2, but as some well-known vegetable exhibitors competed by reason of their membership, the quality was very fine. In this section plants were represented by excellent Ferns, tender and hardy Coleus, Begonias, double and single; Lilies, very good, especially the speciosum types; Pelargoniums, Fuchsias, and various annuals. Many of the foregoing plants were also well shown by working-men.

Cut flowers were a great feature; Perennials were extensively and finely shown in striking bunches, and many annuals were delightful, especially Phlox Drummondii, Sweet Peas, Salpiglossis, &c. The beautiful bunches of the first and last were a surprise. Zinnias, Asters, Marigolds, African and French; Petunias, Stocks, Indian Pinks, Dahlias, &c., were all very good, much better than could have been expected.

Fruit was extensively represented in section 2, very well-finished white and black Grapes; grand culinary and dessert Apples, capital Plums, Tomatoes, &c., were to be seen in large quantities. There were classes for table decoration; also one for a dinner-table, competed for by ladies, a new introduction which proved highly successful, and will no doubt be extended in future years.

This is scarcely the place to dwell upon the moral advantages gathering about this festival. The visitor saw thousands of young people drawn from all parts of the country thronging the palace; quiet, well-behaved, considerate for others, and with an entire absence of anything in the way of rowdiness, larking or horseplay. There was thorough enjoyment, but in a serious business-like way, and all appeared radiantly happy. We may fittingly allude to the value of the moral restraint developed by those who, taking up gardening from a love of the beautiful, find in plants and flowers living teachers, imparting lessons that appeal to the higher parts of human nature. The union of a love of beauty with a sense of the advantage of utility must be an educational force, and in the right direction.

THE SHROPSHIRE HORTICULTURAL.

AUGUST 23, 24.—The Shropshire Horticultural Society held its nineteenth annual exhibition of plants, fruits, &c., on Wednesday and Thursday, in its own charming grounds (The Quarry), adjoining the town. The entries this year have been considerably more than in any previous year. All the details of the show were most smoothly and efficiently carried out by the committee and the energetic honorary secretaries, Messrs. H. W. Adnitt and W. W. Naughton.

Plants.—The post of honour was given in the schedule to a group of miscellaneous plants arranged for effect on a space of 300 square feet, the prizes being £20, £16, £14, and £12. The result of these liberal prizes was the arranging of five good groups. The 1st prize was awarded to Mr. A. Wells, gr. to J. H. Mannere-Sutton, Esq., Ketham Hall, for a good arrangement, consisting of a bank of Crotons, Palms, Lilium auratum, Anthuriums, Caladiums, Ferns, &c., for a background, with a series of small groups, having a Palm, Dracæna, Crotons, and such-like plants in the centre, with the intervening space covered with green moss. Mr. James Cypher, who was placed 2nd, had a lighter and more elegant arrangement, in which Oncidium incurvum, Dendrobium Phalaenopsis Schroderianum (having four nice spikes of flower), Cattleya aurea,

C. Gaskelliana, Bridal Wreath, Vanda cœrulea, Caladium argyrites, &c., arranged similarly to the first, only being lighter in effect.

For sixteen stove and greenhouse plants in bloom, or foliage, not less than four in bloom, prizes, of £20, £15, and £10, were offered. Mr. Cypher was a good 1st, staging, among others, grand plants of Dipladenia amabilis, Allamanda Hendersoni, Bougainvillea glabra, Ixora Williamsi, grandly-coloured Crotons, Queen Victoria and angustifolius; extra-large Latania borbonica, and Kentia Fosteriana; Mr. Finch, gr. to Jas. Marriot, Esq., Coventry, was a creditable 2nd.

Mr. T. Lambert, gr. to Lord Harlech, Oswestry, was a good 1st in the class for six stove and greenhouse plants in flower, showing fine Ixora Regina, Allamanda Hendersoni, Dipladenia amabilis, Ixora Pilgrimi, and Croton Warrenti.

Orchids.—For a group of not fewer than twenty Orchids, prizes of £12, £8, and £5, were offered. Mr. Cypher was a long way ahead with an extensive assortment, prominent among which were Dendrobium Phalaenopsis Schroderianum, Odontoglossum crispum, O. Harryana, Cattleya gigas, C. Gaskelliana, Saccolabium Blumei, Vanda cœrulea, having a spike of ten well-developed flowers; Cattleya aurea, Dendrobium Dearei, Lælia elegans, Oncidium incurvum, having several spikes of flower, &c., the whole being edged and intermixed with Maidenhair Fern.

Ferns.—1st, Mr. C. Roberts, gr. to C. H. Wright, Esq., Halston Hall, was well to the front with six exotic Ferns, showing healthy plants, including a fine plant of Gymnogramma sulphurea. Mr. Penson, gr. to Lord Forester, Willey Park, Broseley, was 1st for a like number of plants, but much finer than in the preceding class (this one being confined to exhibitors residing in Salop), staging five fresh plants of Davallia Mooreana, Adiantum Farleyense, &c.

Orchids (confined to growers residing in Shropshire).—Mr. Davis, gr. to A. E. W. Darby, Esq., Little Ness, was the only exhibitor, and he was deservedly awarded 1st prize for nice plants of Cattleya gigas, having a dozen flowers; Dendrobium Dearei, in fine flower; Cypripedium Chamberlainianum, and Cattleya Aclandii.

Fruit was shown extensively and well. Prizes of £10, £6, and £3, offered for a collection of twelve kinds of fruit, brought out four good collections. Mr. Goodacre, gr. to the Earl of Harrington, Elvaaston Castle, Derby, was 1st, with a good all-round lot, staging fine well-coloured bunches of Muscat Hamburg, Madresfield Court, Muscat of Alexandria, and Foster's Seedling Grapes (the latter rather green); good Cayenne Pine, grand dish of Brown Turkey Figs, good Noble Strawberries, Hero of Lockinge Melon, Walburton Peaches, Victoria Nectarines, Golden Eagle Peach, and Jefferson Plums.

Five collections of nine kinds were put up in the class confined to gardeners residing in Shropshire. Mr. H. H. France, Hayhurst, Wellington, was 1st with a fairly good lot of fruit, including good Lockinge Melon and Alnwick seedling Grapes.

Grapes.—Four hundred bunches of Grapes were staged, making a grand display, and were of a high order. Prizes of £10, £6, and £3 offered for six bunches of black Grapes, in three varieties, two bunches of each, brought forth twelve lots. Mr. Bennett, gr. to Hon. C. H. Wynne, Ring Cowen, North Wales, was well a-head, staging very large well-coloured bunches of Alnwick Seedling (one cluster would probably turn the scale at 7 lb.), Gros Maroc (fine in the berry, and of good finish), and Black Alicante; Mr. Goodacre being 2nd, with Gros Guillaume (large in bunch and berry), and well-coloured Black Alicante and Alnwick Seedling.

Twelve stands of three bunches of Black Hamburgs were staged, Mr. Brown, gr. to J. C. Sinclair, Esq., Rock Ferry, being well ahead with large, handsome, well-coloured bunches. Nine stands of any other Black were staged; Mr. Craven was well 1st with handsome, well-coloured bunches of Madresfield Court. Eight stands of four bunches of white, in two varieties, were shown by Mr. Silk, gr. to T. M. Franklin, Esq., St. Hilliers, Cowbridge, who led with Golden Queen, and Muscat of Alexandria. Mr. Middleton was placed 1st for three bunches of Muscat of Alexandria, being very closely followed by Mr. Slade, gr. to the Duke of Newcastle, Clumber, Worksoy, who staged compact even bunches, fine in berry and of good colour. Eleven stands of Muscats were staged. In the any other white class, twelve stands were put up, 1st prize being awarded to Mr. Craven, for good Buckland Sweetwater.

In the Grape classes, confined to growers living in Salop, two bunches of each variety to be shown,

Mr. Langley, gr. to Rev. T. M. Bulkeley Owen, Tedmore Hall, West Fellow, was 1st, for good Black Hamburgs, with medium-sized well-coloured bunches, fine in berry, and beautifully coloured. With any other Black, Mr. Lambert, gr. to Lord Harlech, Oswestry, was well ahead with large bunches of Gros Maroc, fine in berry, and of good colour. The last-mentioned exhibitor was well 1st for Muscat of Alexandria, staging good tapering bunches of good-sized, well-coloured berries. Amateurs also showed well in the Grape classes.

Peaches and Nectarines were shown in fair numbers, and in good condition. Mr. Wallis, Keele Hall, Newcastle, was 1st for Nectarines, with Darwin; and Mr. Bannerman, gr. to Lord Bagot, Rugeley, had the best dish of Peaches in Violet Hâtive.

Pines: Special Prizes.—Prizes and Certificates of Merit were accorded to Mr. Slade for five large fruits, four of Cayenne, and one of Charlotte Rothschild; and to Mr. Bennett for six good fruits, two of Cayenne, and four of Prince Albert, about 10 inches high, and having bright pips.

Vegetables were shown in great numbers, the various exhibits being of a high order in the generality of classes.

Special Prizes.—Out of six good collections of eight kinds put up for Messrs. Webb & Son's prizes, Mr. Wilkins was 1st, staging fine Autumn Giant Cauliflower, New Defiance Carrot, New Pearl White Celery, grand specimens of Ailsa Craig Onion, Satisfaction Potato, Promotion Peas, Eclipse Runner Bean, Sensation Tomato; 2nd, Mr. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury, with fine produce. The last-mentioned exhibitor was 1st in a good competition for Messrs. Taylor & Thomson's prize for a collection of twelve kinds, staging, among others, fine specimens of the Leek, Giant White Celery, Dobbie's Select Parsnips, Intermediate Carrot; Mr. Wilkins being 2nd. The last-mentioned exhibitor had the best collection of six kinds, the prizes being given by the same firm mentioned in the preceding class.

Potatoes were extensively shown, the tubers being of good size, clean, and even. Fifteen collections of six varieties were staged, Mr. Hathaway, gr. to the Earl of Latham, Latham, Ormskirk, led with good dishes of Cole's Favourite, Reading Russet, Satisfaction, Edgecote Purple, Chancellor, and Scarebrick Favourite.

Mr. Wilkins had by far the best nine Onions, showing Excelsior in fine form. Mr. Gaunt, gr. to James Watson, Esq., Berwick, Shrewsbury, had the best dish of Turnips; and Mr. Hathaway led with fine specimens of Carrot, Long Red Surrey.

Mr. Wilkins was 1st for French Beans, showing good Canadian Wonder; Mr. Leith, gr. to J. R. Greatorex, Esq., Nytton Hall, Salop, was 1st for Peas; and Mr. Sheppard, Winchcombe, led with Tomatoes (Perfection) in a good class. Mr. Waker, gr. to Sir W. Honyman, Bart., Cotton Hall, Whitechurch, was 1st for a brace of Cucumbers.

Miscellaneous Exhibits.—Messrs. Pritchard & Son, Frankwell Nursery, Shrewsbury, covered a long wide staging with Palms, Ferns, Liliums, &c., together with a large assortment of cut herbaceous flowers. Mr. T. S. Ware, London, contributed a grand lot of tuberous-rooted Begonias, in pots and in a cut state, the blooms (double and single) being of fine size, distinct, and of striking shades of colour; Goliath was a fine terra-cotta-coloured variety. Messrs. Hewitt & Co., Birmingham, contributed cut flowers and plants in pots, which together made a fine show.

Messrs. Cutbush & Son, London, had a fine arrangement of cut blooms of herbaceous and alpine plants. W. Eckford, Wem, Salop, staged thirty-two bunches of his charming varieties of the Sweet Pea, including the pretty blue, Emily Eckford. Messrs. Webb & Sons had a good collection of vegetables grown from seed supplied by them, including grand specimens of the Parsnip, &c. Messrs. Jarman & Co., Chard, also had a good exhibition of garden roots, &c. Messrs. Dicksons, Chester, had a fine lot of decorative plants and cut spikes of Gladioli. Messrs. Dobbie & Co., Rothesay, had cut flowers in great number.

Obituary.

MR. CH. B. SAUNDERS.—We regret to hear of the death of one of our valued correspondents, Mr. CH. B. SAUNDERS, of Jersey, on the 1st of August. He died "in harness," having been in good health and attending to business matters the day previous to his death, from apoplexy. Born January 4, 1824,

he received a first-rate education, and at the early age of 21 took over the management of his father's then very extensive business of a nurseryman and fruit grower, and carried it on with great energy and success until the last. He was much valued in the Channel Islands as an authority on gardening matters generally, and had the reputation of being a rare connoisseur of fruits, bulbous and hardwooded plants. His business will be continued by Mr. Becker.

WILLIAM WHITTAKER.—On the 15th inst., William Whittaker died at Slough, at the age of seventy-five. He was for many years the foreman of the plant-houses at the Royal Nursery, Slough, and the principal salesman. Going to the nursery sixty years ago, when quite a boy, he may be said to have grown with the growth of the establishment during the time it was in the occupation of Messrs. T. C. and E. Brown; their successor, Mr. Cutter; and finally in that of the late Mr. Charles Turner. William Whittaker was a most skilful soft-wooded propagator, and in his day many millions of cuttings and plants must have passed through his hands. Increasing infirmities compelled his retirement from the Royal Nursery in 1891, and as above stated, he died at Slough, where he had passed the whole of his life.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	Above (+) or below (—) the Mean for the week ending August 14.	ACCUMULATED.			More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.						Below 42° difference from Mean since January 1, 1893.
0	7 +	139	0	+ 538	— 57	1 —	142	21.4	28 25	
1	8 +	158	0	+ 352	— 21	3 —	116	15.0	54 32	
2	10 +	181	0	+ 395	— 62	4 —	99	12.7	59 36	
3	9 +	193	0	+ 485	— 37	5 —	97	12.0	67 44	
4	11 +	195	0	+ 620	— 47	6 —	97	12.1	57 41	
5	9 +	195	0	+ 527	— 43	5 —	91	11.8	72 46	
6	7 +	151	0	+ 481	— 63	4 —	114	21.4	48 37	
7	9 +	179	0	+ 647	— 91	3 —	103	16.1	48 37	
8	7 +	169	0	+ 658	— 70	4 —	98	18.3	60 48	
9	9 +	166	0	+ 547	— 104	1 +	125	19.7	41 32	
10	8 +	172	0	+ 602	— 100	0 aver	111	18.8	45 35	
*	7 +	187	0	+ 742	— 52	5 —	100	13.6	84 57	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

MARKETS.

COVENT GARDEN, August 24.

HEAVY supplies still arriving, but with low prices are soon cleared. Large quantities of common Apples on the market practically unsaleable; none but first-class samples meeting with any sale whatever. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Oranges, per case ... 20 0-30 0
Cobs, per 100 lb. ... 25 0- ...	Peaches, per doz. ... 1 0-6 0
Filberts, per 100 lb. ... 25 0- ...	Pine-apples, St. Michael ... 2 0-5 0
Grapes, per lb. ... 0 6-1 6	Plums, p. half-sieve, 1 6-2 6
Lemons, per case ... 18 0-30 0	

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Orchids:—
Aster, dozen bun. ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Aster (French), bun. 0 9-1 3	Odontoglossum
Bouvardia, per bun. 0 6-1 0	crispum, 12 blms. 2 0-6 0
Calceolaria, doz. bun. 4 0-6 0	Pelargoniums, scar-
Carnation, doz. bun. 4 0-9 0	let, p. 12 bun. 3 0-6 0
dozen blooms 1 0-3 0	— 12 sprays ... 0 6-0 9
Cornflower, 12 bun. 1 0-2 0	Poppy, doz. bunches 1 6-4 0
Eucharis, per dozen 3 0-4 0	Primula, dble. p. bun. 0 6-1 0
Gardenia, per dozen 2 0-4 0	Pyrethrum, 12 bun. 2 0-4 0
Heliotrope, 12 sprays 0 3-0 4	Roses, doz. bunches 3 0-8 0
Lilium lancifolium, p. doz. blooms 2 0-4 0	— Tea, per dozen 0 6-2 0
— Harrisii, p. doz. 2 0-5 0	— coloured, dozen 2 0-4 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— yellow (Maréchal), per doz. 1 6-6 0
Marguerite, 12 bun. 1 6-3 0	— red, per dozen ... 1 0-1 6
Mignonette, 12 bun. 2 0-4 0	Stocks, per bunch ... 0 4-0 6
Myosotis, 12 bunches 2 0-3 0	Sunflower, various, dozen bunches ... 2 0-6 0
Peas, Sweet, various, doz. bunches ... 3 0-6 0	Sweet Sultan, 12 bun. 2 0-4 0
Pansy, per doz. bun. 1 0-2 0	Tuberose, 12 blms. 0 4-0 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

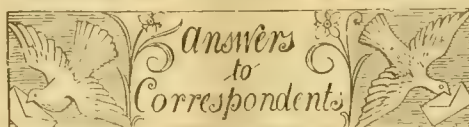
s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Heliotrope, per doz. 4 0-6 0
Aspidistra, per doz. 15 0-30 0	Hydrangea, per doz. 12 0-24 0
— specimen, each 7 6-21 0	Ivy Geranium, doz. 4 0-6 0
Asters, dozen pots ... 4 0-8 0	Lilium Harrisii ... 18 0-24 0
Balsams, per doz. 4 0-6 0	— lancifolium, dz. 12 0-18 0
Campanula, per doz. 6 0-12 0	Lobelia, per doz. ... 3 0-6 0
Cockscombs, per doz. 4 0-6 0	Marguerite, per doz. 6 0-12 0
Cyperus, per dozen 4 0-10 0	Mignonette, per doz. pots 4 0-6 0
Dracena, each ... 1 0-5 0	Nasturtium, p. doz. 4 0-6 0
Ferns, various, doz. 4 0-9 0	Palms, various, each 2 0-10 0
Ferns, small, per 100 ... 4 0-6 0	— specimens, each 10 6-84 0
Ficus elastica, each 1 6-7 6	Pelargonium, p. doz. 6 0-12 0
Foliage plants, doz. 12 0-42 0	— scarlet, p. doz. 3 0-6 0
Fuchsia, per doz. 6 0-9 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 6- ...	Mushrooms, punnet 2 0- ...
Beet, red, per dozen 2 0-3 0	Mustard and Cress, punnet ... 0 4- ...
Carrots, per bunch ... 0 4-0 6	Parsley, per bunch ... 0 3-0 6
Cauliflowers, each ... 0 3-0 6	Shallots, per lb. ... 0 6- ...
Cucumbers, each ... 0 2-0 6	Tomatos, per lb. ... 0 6- ...
Endive, per dozen ... 2 0-3 0	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 9-1 0	
Lettuces, per doz. ... 1 6-2 0	

POTATOS.

Arrivals are still very heavy and demand limited, except for finest samples, which realise 5s. 6d. to 6s. 6d. Ordinary samples hard to clear, except at very low prices. *J. B. Thomas.*



APPLE STOCKS: *G. H. H. M. Leroy of Angers, Baltet of Troyes.*

BEGONIAS: *G. F.* We recommend you to send the specimens to some grower who makes a specialty of these plants. We see nothing particular in either.

BOOKS: *Cacao.* You cannot get this book in England. Write to Mr. Finchley Hart, Superintendent of the Royal Botanic Gardens, Trinidad.

CARNATION LAYERS: *W. C. & Co.* The grubs are those of the cockchafer. Encourage rooks, or a tame jackdaw or two.

COLOUR OF FLOWERS: *Query.* The one you send (*Vinca minor*), we take to be blue. If anyone can suggest a better name, we should be glad to hear it.

CORRECTION.—In our report of Maidenhead Show last week, we should have stated that Mr. Herrin, of Bridge House, was 2nd in the competition for six Ferns, Mr. Jakeman was 3rd.

INSECTS ON CATTLEYA: *W. W., Uxbridge.* The swollen roots of Cattleya are caused by the Orchid-fly. The best way to deal with it is to cut off every root affected just above the swelling, and to burn the pieces so removed. Carefully watch and cut off others which may seem to be similarly affected as they appear.

MOVING STOCKS: *Allium.* If you are obliged to move them, do so as carefully as possible, and be prepared to lose a percentage; but if possible, we should prefer to allow them to remain until another season.

NAMES OF FRUITS: *H. W. S.* Plums: 1, Magnum Bonum; 5, Kirke's; 6, Diamond; others rotten. *C. M. B.* Apples: 1, Duchess of Oldenburg; 2, Lord Grosvenor. *W. H.* Apple, Summer Golden Pippin. *A. B. B.* Not known. *A. B. I.* Kirke's; 2, Diamond. *Claude Lonsdale.* 1, Stone's Apple; 2, Irish Peach; 3, Dutch Codlin; 4, Duchess of

Oldenburg; 5, not known; 6, Yorkshire Beauty. *Ancient Norwich.* 1, Beurré de Capiaumont; 2, Louise Bonne of Jersey; 3 and 4, Duchess of Oldenburg; others not known. *T. C. I.* Kirke's; 2, Pershore; 3, Lawson's Golden Gate; 4, Prince Englebert; 5, Jeffersons. *W. B. V.* 1, Beurré Bosc; 2 and 5, Beurré Diel; 3, Marie Louise; 4, Urbaniste. *H. Wilks.* 1, Nectarine Violette Hative; 2 and 3, Peaches, probably Early York; 4, Royal George; 5, Grosse Mignonne; 6, Victoria. No one without a knowledge of the flowers as well as the leaves can name Peaches with certainty. *One Anxious.* Apple New Hawthornden. *X.* 1, Too small to be identified; 2, Sea Eagle; 3, Gone too far; 4, Pine-apple Nectarine. When packing Peaches, they should be gathered before too ripe. *Chadwick.* Pears: 1, 2, Williams' Bon Chrétien; 3, Autumn Colmar; 4, Not known; 5, Jersey Gratioli. Apples: 1, Lord Grosvenor; 2, Cellini; 3, Kerry Pippin; 4, Dutch Codlin; 5, Duchess of Oldenburg; 6, Duck's-bill.

NAMES OF PLANTS: *F. A. H.* *Lælia crispa.*—*H. W. W.* *Clitoria Ternata*, an old friend. *H. M. E.* *Galeopsis Tetrahit.*—*J. P. Withington.* So far as can be made out from seedling plants only, your specimens are: 1, *Mandevilla suaveolens*; 2, *Catalpa bignonioides*; 3, Send when in flower; 4, *Mimosa sensitiva*; 5, *Melia Azedarach*; 6, *Oxalis corniculata rubra.*—*H. E. B.* 1, *Lygodium scandens*; 2, *Selaginella atro-viridis*; 3, *S. cuspidata*; 4, *S. Wildenowii*; 5, *Pellionia pulchra*; 6, *Pilea microphylla (muscosa).*—*R. A.* 1, *Abelia rupestris*; 2, *Pellionia daveana*.—*E. R.* *Arauja albens.*—*D. H. L.* 3, *Bomaria hirtella*; 4, *Ichroma tubulosum.*—No name: Box labelled *Fry's Chocolate.* 1, *Platanus acerifolius*; 2, *Acer Negundo*; 3, *Medicago echinus (Calvary Clover)*; 4, *Athyrium filix-œmina*; 5, *Kerria japonica.*—*V.* *Coreopsis grandiflora.*

NUTS: *D. M. G.* There is nothing to be found in the Filberts now. A possible explanation is, that they were attacked in the first instance by the grubs of the Nut-weevil (*Balaninus nucum*), and that the large holes were made by tit-mice in their endeavours to extract the grubs of the weevil. *R. McL.*

POTATOS: *Arthur Ransom.* The cause of the red stains on Potatoes is a minute organism, *Micrococcus prodigiosus*, which appears on bread, Potatoes, meal, and various other substances in hot weather. It is known in Germany as "Blut im brode." The spots are in the form of irregular groups of blood-red drops of different size, which in some places are distinct, and in others are confluent. The individual bodies of which the spots consist are mere molecules, with a diameter of one-two thousandth to one-four thousandth of a line, mostly round, occasionally oval, and sometimes slightly constricted in the middle. When they lie close together in large numbers they are quiescent, but when more dispersed, have an ordinary molecular motion. At first it was called *Monas prodigiosa* by Ehrenberg, and was considered by him to be an animal of low organisation. Afterwards it was transferred to the Algae, under the name of *Palmella prodigiosa*. Now, it is recognised as a Bacillus, or Micrococcus, and is classed with Microbes under Schizomycetes, as a degraded form related to the fungi. It may be transferred readily from the Potatoes to bread, rice, and meat, and, in former times caused great alarm to the superstitious. *M. C. C.*

PRESERVING ORNAMENTAL GRASS: *S. A. T.* We always find it best to cut this before it is quite ripe, and hang it up, as you say, in a cool dark place.

SEEDLING APPLE: *Evans, Hassocks.* A good sized very pretty Apple, somewhat resembling in appearance Duchess of Oldenburg, but, sweet and pleasant to the taste. A very promising early dessert Apple.

VINE DISEASE: *B. R.* At all risks we should cut away and burn all affected parts. We have not much faith in drugs in this case.

COMMUNICATIONS RECEIVED.—*J. O'B.*—*P. D.*—*E. M.*—*E. L. T.*—*W. M.*

PHOTOGRAPHS RECEIVED WITH THANKS.—*F. W. B.*—*Vagabond.*—*Jersey.*

SPECIMENS RECEIVED.—*La Mortola.* Cones of *Taxodium sempervirens*, *Cupressus macrocarpa*, *Cupressus Knightiana* is *C. Lindleyi*, *Cupressus torulosa*, *C. funebris*, *C. californica* is *C. Goeniana*, *Thuja gigantea* is *Libocedrus decurrens*, *Biota orientalis*, *Callitris quadrivalvis* is *Tetrachlis articulata*. The unnamed one is *Juniperus Virginiana*.—*W. A.*—*J. A. K.*—*W. D.*—*B. H. A.*—*F. B.*—*R. F.*—*J. F.*—*R. M. W.*—*J. D.*—*W. S.*—*A. H.*—*W. Sellen.*

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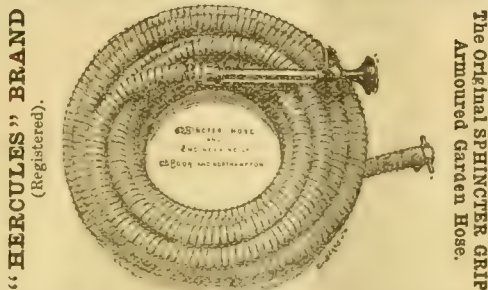
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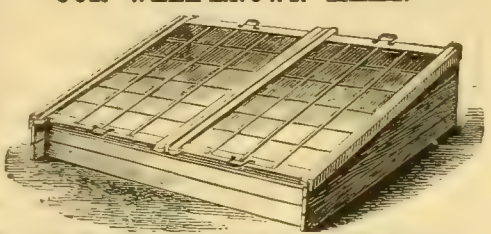
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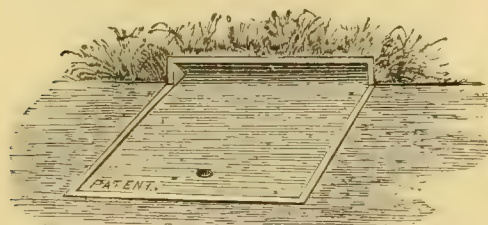
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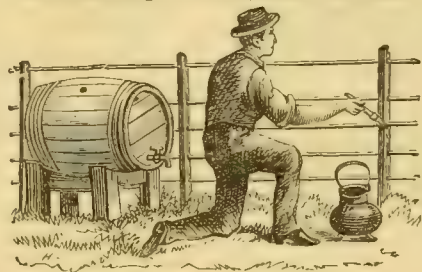
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Mr. J. T. SHANN has been appointed Gardener to J. L. FITZ-HUGH, Esq., Plas Power, Wrexham, Denbighshire.
Mr. ARTHUR B. WADDS, Gardener to the Earl of JERSEY, Otterley Park, Middlesex, has been appointed Head Gardener to W. W. ASTER, Esq., Cliveden, Maidenhead, Kent.

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By order,

SAM. BROWN, Town Clerk.

Town Hall, Salford, August 17, 1893.

WANTED, AT ONCE, a HEAD WORKING GARDENER, where two others are kept. Must be thoroughly up and understand Peach, Grape, Tomato, and Cucumber Growing for Market. Cottage on Premises. Situation comfortable and permanent. Small family preferred. Good character indispensable.—Apply, stating age, previous employment, and wages required, to Mr. J. H. COOPER, Dashwood, Gravesend.

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JOURNEYMAN, in the Houses.—Age 19; two years and a half in previous place; over eighteen months in present.—N. SMITH, Barrell's Park, Henley-in-Arden.

JOURNEYMAN, in the Houses.—Age 22; eight years' experience. Inside and Out. Good reference.—E. SMITH, Wood End Gardens, near Chichester, Sussex.

JOURNEYMAN, in the Houses.—Age 23; nine years' experience. Good references.—W. FOOTE, 41, Lansdowne Road, Clapham, S.W.

JOURNEYMAN, in the Houses.—Age 20; good reference.—R. HAMBROOK, The Gardens, Otter-shaw Park, Chertsey, Surrey.

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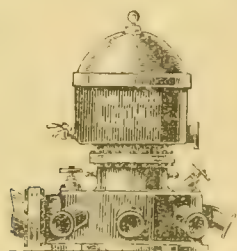
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TESTIMONIALS.

From CHARLES HART, Esq., A.M.I.C.E. 3, Avenue Road, Leamington,
March 13, 1893.

Brizworth Union Rural Sanitary Authority, East Hadon Water Supply.
DEAR SIR,—Since the opening of these works, in May, 1891, the two Double-acting "B" Rams supplied and fixed by you have done their work with a minimum of attention, uninterruptedly and satisfactorily. Pure spring water obtained from a gathering ground on the side of a hill is carried along iron pipes a distance of 548 yards, down to a cistern fixed in the ram-house. From this cistern it flows to the rams, which are driven by impure water—drawn from an adjacent brook, with an available fall of 12 feet—and thence by them forced along an ascending delivery pipe, a distance of 1520 yards, to an iron reservoir, at an elevation of 204 feet. From this reservoir mains are laid which supply the hall with its stabling, the rectory, six farm houses, two dairies, and twenty-four wall fountains for the villagers' use.

The average daily consumption exceeds 4000 gallons, which one ram easily delivers, thus exceeding your guaranteed quantity by more than 1000 gallons per ram per 24 hours. Generally the two rams are regulated to divide the work between them, but occasionally it devolves upon one only.

If more widely known, this means of supplying villages and small towns with a limited quantity of spring water, forced to a suitable elevation by means of your rams, driven by impure water, would most certainly be more generally adopted.—Yours faithfully,

CHARLES HART.

From the Right Honourable the EARL of HARROWBY, 44, Grosvenor Square,
London, February 21, 1893.

SIR,—I have pleasure in stating that the two Hydraulic Rams, which you supplied and fixed for me last autumn, at S-n-jon, have proved so far most successful, and that the work gives every promise of durability, while the economy, compared with the former much smaller and intermittent supply by steam pump, will be considerable.

With a fall of about 14 feet from a previously existing mill pool, the rams supply reservoirs 163 feet above the brook whence the water is forced, through pipes of $1\frac{1}{2}$ mile in length.

They sent up, as long as I required it, about 41,000 gallons per day.

I now generally work the two rams alternately (for a fortnight or so each), but can at any time work the two together, if the full supply of 41,000 gallons should be needed.

The business of this somewhat complicated water-supply was conducted by you with singular promptness and punctuality; and no local difficulties arose in the execution of the work, owing to the excellent and efficient men whom you sent from your works at Accrington.

I am, Sir, your very obedient servant,

HARROWBY.

From Mr. J. A. RUTHERFORD, Agent to C. F. H. Bolckow, Esq., Estate Office,
Marton Hall, Middlesbrough, September 26, 1883.

DEAR SIR,—I am glad to say that the Rams you put down on the Hambledon Estate, for Mr. C. F. H. Bolckow, are working very well. You undertook with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams at full power, 2000 gallons a day. With a supply of 11½ gallons per minute they are lifting 2200 gallons, and when working full power, 3105 gallons per day are sent up to a height of nearly 400 feet. They made a clear start, and have gone well since. The delivery pipe in the above case is 9000 feet in length.

From THOMAS ROBERTS, Esq., Estate Surveyor to His Grace the Duke of
Sutherland, K.G., Surveyor's Office, Trentham Hall, Staffordshire, April 13, 1886.

DEAR SIR,—I am pleased to say that the Hydraulic Ram you supplied and fixed at Tittensor (the residence of the Marquess of Stafford, M.P.), does its work very satisfactorily, with a fall of 9 feet 6 inches, raising 9000 gallons daily to a height of 150 feet. The Duke of Sutherland, K.G., inspected the working of the Ram, and expressed his entire satisfaction with it.

I am, yours faithfully,

THOMAS ROBERTS.

From Sir S. M. MARYON WILSON, Bart., London, November 17, 1891.

SIR,—I have much pleasure in stating that the two "A" Rams you supplied and fixed for me at Searles, on my Sussex estate, have proved a great success, especially when the small supply of driving water is considered, as with a supply of 7 gallons per minute only, they have daily thrown 3000 gallons to a height of 96 feet, and through a service of pipes over a mile in length; and testing them recently (with plenty of driving power) found they lifted 7000 gallons per day.

The economy effected by their use is considerable, as they have entirely superseded a steam pump.

S. M. MARYON WILSON.

From HENRY MORTON, Esq., Agent to the Most Honourable the Marquess of
Ripon, K.G., Ripon, April 12, 1886.

DEAR SIR,—The Patent Ram, with $1\frac{1}{2}$ mile of service pipe, a large galvanised tank, and other fittings, which you fixed for the Marquess of Ripon, for the conveyance of water from Hutton Moor Springs to Blows Hall and Copt Hewick Hall, are highly satisfactory to all concerned, both as an engineering success and the intrinsic merits of the materials supplied. About 6000 gallons of water per day are forced into the tank at Blows Hall, nearly a mile distant, and 127 feet above the Ram, the overflow falling into a 20,000 gallon underground tank, from which it gravitates through the 4-inch main 800 yards long, with a fall of 70 feet, to the service-cocks and fire-plugs at Copt Hewick Hall, where, in case of fire, two or three powerful jets of water can be thrown on to the roof of the Hall.

I consider your method of carrying out the work is everything that could be desired, and, whilst the waste-power water from the Ram is less than you specified, the quantity elevated is just what you guaranteed. I am, dear Sir, yours very truly

HENRY MORTON.

From T. H. SIDEBOTTOM, Esq., Etherow House, Hadfield, February 22, 1882.

Induced by the good report of my cousin, Mr. J. A. Sidebottom, as to the working of the Hydraulic Ram he had from you, I ordered the one you fixed here a year ago, which I am pleased to say has since worked well night and day. Yet the two Rams you fixed at Snow's Hill Manor, Gloucestershire, for my brothers and myself, are, I think, a still more remarkable example of your success. We had a Ram fixed by a well-known firm, which proved a miserable failure, and which your Rams displaced. They are forcing the water through three-quarters of a mile of delivery-pipe, a little in excess of the quantity you guaranteed, to an elevation of 340 feet, and without the slightest hitch to the time of the last report from our tenant.

From Mr. HENRY ROBINSON, Engineer to the Stockport District Waterworks
Company, September 8, 1883.

DEAR SIR,—I can now report well of the two Hydraulic Rams we have fixed to your instructions for the supply of Disley village; 40,000 gallons per day was the quantity you promised they would force to a height of 68 feet, but, on testing them, I am convinced that 50,000 gallons is not the limit of their power, whilst the quantity of waste water used in driving them is not equal to half the capacity of the 6-inch pipe by which they are fed, and I am inclined to the belief that a more simple and efficient pump cannot be found.

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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2749.

No. 349.—VOL. XIV. {THIRD
SERIES.}

SATURDAY, SEPTEMBER 2, 1893.

{Regt. as a Newspaper. PRICE 3d.
WITH SUPPLEMENT. POST-FREE, 3½d.}

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Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'clock, there being upwards of 1300 Lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Miller & Sons, to **SELL BY AUCTION**, on the Premises, the Burnt Ash Road Nurseries, Lee, Kent, S.E., adjoining Lee Railway Station, and within a mile of Blackheath, or Grove Park Station, S.E. Railway, on **TUESDAY, September 12**, at 11 o'clock precisely, without Reserve, a remarkably well-grown stock of **WINTER-FLOWERING HEATHS**, and other **STOVE and GREENHOUSE PLANTS**, consisting of—

15,000 Erica hyemalis	5,000 Solanum capsicastrum, well berried
2,000 " gracilis	1,000 Adiantum cuneatum
1,000 " Cavendishii	1,000 Lomaria gibba
1,000 " coccinea minor	800 Tea Roses, in pots
800 " Caffra	2,000 Bouvardias, of sorts
All well set with bloom-buds.	1,000 Palms, of sorts
2,000 Ampelopsis Veitchii	1,000 Cyclamen persicum
1,500 Epacris to name	500 Crotons, beautifully coloured
1,000 Boronia megastigma, and others	500 Aralia Sieboldii
1,000 Grevillea robusta	
4,000 Genistas	

With a large quantity of young Erica Cavendishii, Aralia Sieboldii, Ferns, and Genistas, all in 60-pots for growing on.

The Stock is now on view. Catalogues may be had on the Premises; at the Seed Warehouse, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Lea Bridge Road.

UNRESERVED SALE.

ANNUAL SALE of fine WINTER-FLOWERING HEATHS, CYCLAMEN, BOUVARDIAS, GENISTAS, SOLANUMS, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex, on **WEDNESDAY, September 13, 1893**, at 11 o'clock precisely, by order of Mr. John Fraser, without reserve, in consequence of the number of Lots, many thousands of

WINTER-FLOWERING and Other PLANTS,

Including—

20,000 Erica hyemalis	10,000 Clematis Jackmanii and other best-named sorts
3,000 Erica hyemalis alba	200 Maréchal Niel Roses, 8 to 10 ft.
2,000 Erica Caffra	1,000 Deutzia gracilis, established in pots, for earliest forcing
2,000 Erica Cavendishii	10,000 Bouvardias, including a lot of "President Cleveland"
4,000 Erica gracilis	5,000 Solanums, beautifully berried
3,000 Tree Carnations	5,000 Hollyhocks, seedlings from named sorts, with names
6,000 Genista fragrans	500 Araucaria excelsa
6,000 Ampelopsis Veitchii, 4 feet	5,000 Narcissus Horsfieldii, and other fine sorts
1,000 New Scarlet Trumpet Honeysuckle	500 Grevillea robusta
1,000 Ceanothus azureus, best varieties	
2,000 Lapageria rosea superba	
6,000 Cyclamen persicum, Fraser's superb strain	
2,000 Passiflora Constance Elliott and corulea [Ivies]	
6,000 Variegated and other	

And a great number of Erica ventricosa, large-flowering white Jasmines, Boronia heterophylla, Escalonia macrantha, Escalonia Ingramii, Aralia Sieboldii, Choisya ternata, Tacsonia Von Volzheim, Lonicera Hallii, Abutilons, Plumbago, LAPAGERIA ALBA, Magnolias, of sorts; Ficus elastica variegata, and other plants. Also a large quantity of young Genistas and Heaths for potting on; and other stock.

May be viewed the day prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—Hoe Street Station on the Walthamstow Branch of Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G.E.R. **TWENTY-FIFTH ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller, to **SELL BY AUCTION**, on the Premises, the Brimsdown Nurseries, Green Street, Enfield Highway, N., on **THURSDAY, September 14**, at 11 o'clock punctually, there being upwards of 1300 lots to sell in one day. About

50,000 **STOVE and GREENHOUSE PLANTS**, remarkably well-grown, mostly in 48-pots, and fit for immediate sale, consisting of

20,000 WINTER-FLOWERING HEATHS , including Hyemalis gracilis, Cavendishii, hybrida, &c.	500 Crotons, beautifully coloured
2000 Tree and other Carnations, Duke of Fife, Duke of Clarence, Winter Cheer, &c.	5000 Solanums, exceptionally well berried
1500 Tea Roses, in pots, The Bride, Niphetos, C. Mermet, Climbing Niphetos, Maréchal Niel, Gloire de Dijon, Perle des Jardins, W. A. Richardson, &c.	3000 Ferns, Adiantums, Polypodiums, Pteris, Lomarias, &c.
1000 Ampelopsis Veitchii, Clematis Jackmannii, &c.	3000 Bouvardias, leading sorts
600 Epacris, to name	5000 Genista fragrans
	1000 Palms, in variety
	10,000 Zonal Geraniums, new and leading varieties
	2000 Cypriss distans
	1000 Passifloras
	1000 Grevillea robusta

Large quantities of Ficus, Aspidistras, Anthuriums, Poinsettias, Plumbagos, Callas, Aralias, Abutilons, New Hybrid Crasulads, Stove Climbers, Dipladenias of sorts, Bougainvilleas, Allamandas, Stephanotis, &c.

May be viewed any day prior to the sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the stock is in first-rate condition. The Ericas are specially well set for flower, and the Solanums unusually well-berried, and are undoubtedly the finest lot offered at this nursery for many years.

East Grinstead.

IMPORTANT to the TRADE and PRIVATE BUYERS. FOURTH ANNUAL SALE of well-grown STOVE and GREENHOUSE PLANTS, by order of Mr. A. Clark (late Roberts Bros.).

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, The Moat Nursery, East Grinstead, close to the East Grinstead Station, on **TUESDAY, September 19, 1893**, at half-past 11 o'clock, without Reserve.

10,000 unusually well-grown **STOVE and GREENHOUSE**

Plants, including:—	200 Calla, Little Gem
3500 Tea Roses in pots, the best lot ever offered at this Nursery, comprising	200 Asparagus
Perle des Jardins, Niphetos, Gloire de Dijon, &c.	800 Adiantum cuneatum
300 Maréchal Niel Roses, rods 5 to 6 feet long	600 Bouvardias of sorts
	400 Double Primulas
	500 Genistas
	500 Palms

Stephanotis, Azaleas, Imatophyllums, Chrysanthemums, Specimen Eucharis, Mixed Ferns, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sidcup, Kent, S.E.

About 10 minutes' walk from the New Eltham (late Pope Street) Station, S.E.R.

GREAT ANNUAL TRADE SALE of WINTER-BLOOMING HEATHS, particularly well-grown and beautifully set with flower; ROSES, and other STOCK.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Longlands Nursery, Sidcup, S.E., on **FRIDAY, September 15, 1893**, at 11 o'clock, by order of Messrs. Gregory & Evans, an enormous quantity of unusually well-grown plants, comprising

35,000 WINTER-BLOOMING HEATHS, in excellent condition and well set with flower-buds, including:—

10,000 Erica hyemalis	1000 Erica Wilmoreana
2,000 " " alba	1000 " colorans
5,000 " " gracilis	1000 " Spencerii
6,000 " " Cavendishii	1000 " perspicua nana
3,000 " " coccinea minor	2000 " " caffra
3,000 " " magnifica	

50,000 **HEATHS**, of sorts, in 60-pots for growing on, 15,000 **GENISTAS**, in 60 pots.

a magnificent lot of 12,000 **ROSES IN POTS**, the finest ever offered at this Nursery, consisting of

3,000 W. A. Richardson, 10 to 15 feet long	3,000 Maréchal Niel
2,000 Gloire de Dijon, very fine	1,000 Perle des Jardins
1,000 Climbing Niphetos, 10 feet long	1,000 Niphetos
	1,000 Sunset

Also

5,000 Solanums, full of berries, the best lot ever grown at this Nursery

3,000 Double White Primulas

1,000 Aralia Sieboldii

And a great variety of useful Ferns.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Stock this Season is particularly well-grown, special attention being invited to the **HEATHS**, also the **SOLANUMS** and **ROSES**, which are the best ever offered at this Nursery.

Friday Next—Orchids.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT, September 8**, at half-past 12 o'clock.

An extremely rare and beautiful species from highlands in India, requiring only the warm end of the cool Orchid-house to grow it. Flowers in rich racemes? varying from rose to purplish-crimson. The plants offered are in fine condition.

AERIDES RADICOSUM.
The most beautiful and compact growing of the A. crispum section. Flowers large crimson and white, and very fragrant. A few only received, but they are in splendid condition.

BROUGHTONIA SANGUINEA MAJOR.
The large light-coloured bulbous rich crimson Broughtonia, very free to grow, and flower fine leafy masses; and various other Orchids of special interest.

On view morning of Sale, and catalogues had.

Friday Next, September 8.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on **FRIDAY NEXT, September 8**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., a splendid collection of **ESTABLISHED and IMPORTED ORCHIDS**, such as grand specimens of **Cypripedium Ainsworthii**, **C. robustum**, **Orphanum**, **Sedeni calurum**, **Cardinale**, **candidulum**, **Schlumi**, an extra large specimen of the beautiful **Cymbidium giganteum**, several nice plants (semi-established), **Lælia elegans**, a fine Collection of **Vandas**, among them a grand plant of **V. Storei**—this is supposed to be the finest specimen in this country; semi-established plants of **Lælia tenebrosa**, true; a select Collection of **Angraecums**, the rare and most attractive **Cyclopogon Myeriana**, a small Importation of **Vanda Cathcartii** in splendid condition, a choice Collection of **Masdevallias** for cool and intermediate house; **Trichostilia suavis alba**, and many other rare and beautiful **ORCHIDS**, the whole without the least reserve.

On view morning of Sale, and Catalogues had.

Important to the Trade.

LILIUM HARRISI.

Received direct from Bermuda,

FOR UNRESERVED SALE.

ENORMOUS IMPORTATION of 48,000 BULBS.

Also 775 **LILIUM LONGIFLORUM** And other LILIES.

The consignment comprises 239 Cases, and they will be offered one case in a lot, as received, the contents varying from 50 to 500 in each case, according to size. The quantities are as follows:—

1,070 extra large, 11 to 15 inches and upwards.
7,160 nine to eleven inches.
30,720 seven to nine inches.
10,000 five to seven inches.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above extensive consignment in their **BULB SALE**, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY, September 14** (being the Thursday in the Great Trade Sale Week). The Sale commences at 12 o'clock, but the **LILIUM HARRISI** will be offered at 2 o'clock, and sold without the slightest reserve.

Friday, September 15.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C. on **FRIDAY, September 15**, by order of F. Sander & Co., St. Albans, **ESTABLISHED** and **IMPORTED ORCHIDS**, among which will be found the following:—

ONCIDIUM VARICOSUM ROGERSII.
The gigantic, brilliant, Buttercup-coloured form, the grandiflora type of this superb Oncidium. Flowers are 3½ inches across in many cases, and are suspended in the air like huge butterflies with expanded wings; frequently 200 and upwards of lovely Buttercup-yellow flowers are carried on a single inflorescence. The flower-spikes are much branched, and in bloom present a mass of glowing colour quite unequalled by any other Oncid. The true Rogersii form exists only in solitary places, and has not been imported for many years, owing to the difficulty of finding it in its native home, where it seems to have been nearly extirpated.

It is the most brilliant and attractive of all Oncids.
CYPRIPEDIUM SANDERIANUM.
The most remarkable and longest-petalled of all the known species of Cypripedes. Its ribbon-like petals frequently attain a length of 2 to 3 feet, and are richly coloured with purple and yellow, the lower part being spotted and barred; as many as five and six blossoms are borne on one stem, and several are expanded at the same time. It is the most distinct and remarkable of all the Eastern Cypripedes, and is well worthy a place in the most select collections.

DENDROBIUM LÖWII.
This very beautiful Dendrobium is now extremely rare, and very few are at present in cultivation. The flowers, which are borne in clusters of five or six, are bright buff-yellow, 2 to 3 inches across, the lip being stained with crimson at the apex, and traversed by lines of long red hairs springing from a crimson base. A free-flowering and brilliant Dendrobe.

DENDROBIUM MIRBELIANUM.
Extremely rare, very quaint and beautiful, carrying thyrses of delicate creamy-yellow flowers.

EULOPHIELLA ELISABETHÆ.
The new and beautiful Orchid from Madagascar, discovered by M. Hamelin.

Flowers white, with the outer surface purplish-red, callus of the lip orange-yellow; in shape they resemble Phalaenopsis blooms, and as many as fifty flowers were seen on a single inflorescence on plants in a wild state by M. Hamelin.

The plants are in grand order, and are breaking freely.
HABENARIA GIGANTEA VAR. SUMATRANA.
syn. H. Susanne var. Sumatransa.

Flowers white, very large, somewhat resembling in its heavily-fringed labellum, Brassavola Digbyana, but having larger blossoms than the latter. The flowers are borne on upright stems, after the manner of Dissa grandiflora.

CYPRIPEDIUM NICHOLSONIANUM.
(Provisionally named.)

A distinct Cypripedium from the Island of Palawan.
EPIDENDRUM FORGETIANUM. (New.)

The habit and form of the pseudobulbs are similar to those of E. selligerum, E. vitellinum, and others; but the colour of the flowers is different. The sepals are spatulate, concave near the lip, and of a dusky yellow, netted with deep brown; the petals are roundish and clawed. The three-lobed lip has a creamy ridged middle lobe, and the lateral ones are rosy, with deeper lines, and folded over the purple column.

Awarded Botanical Certificate, June 20, 1893.
ONCIDIUM SANDERIANUM.
(Provisionally named.)

A new and superb Oncidium from Venezuela.
Flowers rosy red, borne in hundreds on dwarfish many-branched spikes, forming a perfect bouquet when in bloom.

Oncidium Jonesianum	Calanthe vestita
" Gravesianum	Dendrobium nobile
Cymbidium eburneum	Epidendrum, &c.

On view morning of Sale, and Catalogues had.

Every Day.
DUTCH BULBS, GREAT UNRESERVED SALES.

MESSRS. PROTHEROE & MORRIS will **SELL BY AUCTION** at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class **HYACINTHS, TULIPS, CROCUS, NARCISSUS** and other **BULBS** from Holland; also **ROMAN HYACINTHS, LILUM CANDIDUM** and other bulbs for early forcing, lotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.
Monday, Wednesday, and Thursday Next.
GRAND IMPORTATIONS OF DUTCH BULBS.
THREE SPECIAL TRADE SALES.

MR. J. C. STEVENS will **SELL BY AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **MONDAY, WEDNESDAY, and THURSDAY NEXT**, September 4, 6, and 7, at half-past 12 o'clock precisely each day, grand **IMPORTATIONS OF BULBS**, in splendid condition, from some of the best and most reliable growers in Holland, especially lotted for the Trade and other large buyers. Also 10,000 **ROMAN HYACINTHS** and other Bulbs from France, &c.

On view mornings of Sale, and catalogues had.
The Nurseries, Hayes Common, Kent.
Within a few Minutes' Walk of the Railway Station.
WITHOUT RESERVE.

MESSRS. BAXTER, PAYNE AND LEPPER, are instructed to **SELL BY AUCTION**, on the Premises, as above, on **TUESDAY, September 5, 1893**, at 1 for 2 o'clock precisely, the valuable **LEASE and GOODWILL of the NURSERYMAN and FLORIST'S BUSINESS**, carried on for the past sixty-three years by Messrs. Pearce. The Premises comprise about 4½ Acres, 12 Ranges of Green and Stove-houses, Forcing-pits, &c.; also the excellent Stock, &c.; numerous Effects, Garden Implements and Tools, Market Vans, and a useful Brown Mare.

May be viewed the day prior and morning of Sale, and Catalogues obtained of **BAXTER, PAYNE AND LEPPER**, Surveyors and Land Agents, Bromley and Beckenham, Kent; and 69, King William Street, E.C.

NURSERY and FLORIST BUSINESS for **SALE**.—Next to Cemetery in the Old Dover Road, Gravesend, Kent, comprising 580 feet run of Houses, well heated; One Acre of Land, all well stocked; Jobbing Business included.—**T. BOX**, Victoria Nursery, Gravesend.

City of Peterborough.

To **NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS.**
TO BE LET, with Immediate or Michaelmas Possession, the well-known, old-established Peterborough **BUSINESS**, comprising a **NURSERY FARM** of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the Town. Also, a superior **SEED SHOP and STORE**, in a first-class central position; and a **FLOWER-STAND** on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, **FOX AND VERGETTE**, Estate Agents, Peterborough.

FOR IMMEDIATE DISPOSAL, an Old-established NURSERY, SEED, and FLORIST'S BUSINESS, situated in market town in Suffolk. Average takings, £500 per annum. Good opportunity for man with capital. No position within ten miles. Particulars of the Official Receiver in Bankruptcy, Ipswich.

FRUIT-FARM, VINERIES, &c., £3000.—A Gentleman wishes to **DISPOSE OF** the Valuable **LEASE of a FRUIT and GENERAL FARM** of 130 acres. All in prime order, with good Residence, ample Farm Buildings, and over 30,000 square feet of Glasshouses. Or, would **TAKE A PARTNER**.—Apply to C. Mr. J. J. Cooper, Estate Agent, Blagrove Street, Reading.

OLD-ESTABLISHED NURSERY BUSINESS for **SALE**, same hands over forty years. Nine Acres of Stock, several Greenhouses, good Dwelling-house. Capital required to include Stock, Horses, Carts, Lease, Goodwill, &c., about £3000. Exceptional opportunity for purchasing. A thoroughly genuine concern. Further particulars of Messrs. **PROTHEROE AND MORRIS**, Auctioneers, 67 and 68, Cheapside, London, E.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be **DISPOSED OF.**

MESSRS. PROTHEROE AND MORRIS' **HORTICULTURAL REGISTER** contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

FOR ORCHIDS and GARDENERS to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for **LIST**, free.
P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

DAFFODILS.—Irish-grown. Recommended by all the chief Growers in England. Hartland's "Little Book," with low prices for 1893, post free.
HARTLAND, F.R.H.S., Seedsman, Cork. Established 1810.

Important to Mushroom Growers.
CUTHBERT'S SPECIALITE MUSHROOM SPAWN. Always alike; most productive. Hundreds of testimonials. Per bushel, 5s.
R. AND G. CUTHBERT, Seed, Bulb, and Plant Merchant, Southgate, N. Established 1797.

STRAWBERRY RUNNERS.—Strong-rooted. Noble and Paxtons, 20s. per 1,000.—**ORCHARD CO.,** Scotby, Carlisle.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown Stock of **ERICAS** (Hyemalis and other varieties), **EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS**, of sorts; **ADIANTUM CUNEATUM** and other **FERNS**; **PALMS**, in variety; **GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES**, in pots; **BORONIAS** megastigma and heterophylla, **VINES** in pots, &c., &c.
An Inspection is invited.

Trade **CATALOGUES** forwarded on application.
The **ANNUAL SALE** by **AUCTION** will be held on **TUESDAY, September 12**.
Burnt Ash Road Nurseries, Lee, S.E.

ORCHIDS.—ORCHIDS.

Williams'	for Cheap	Orchids.
Williams'	„ New & Rare	Orchids.
Williams'	„ Specimen	Orchids.
Williams'	„ Cool	Orchids.
Williams'	„ Warm	Orchids.
Williams'	„ Imported	Orchids.
Williams'	„ Books on	Orchids.
Williams'	„ Growers of	Orchids.
Williams'	„ Houses for	Orchids.

An Inspection of our Stock invited.
Illustrated Catalogues Gratis and Post-Free.

B. S. WILLIAMS & SON
VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

EXHIBITION.

NATIONAL CHRYSANTHEMUM SOCIETY.—EXHIBITION OF EARLY CHRYSANTHEMUMS, with **DAHLIAS, GLADIOLI, &c.**, at the Royal Aquarium, Westminster, September 8, 7, and 8.

Schedules of Prizes on application to—
RICHARD DEAN, Hon. Secretary and Superintendent, Ranelagh Road, Ealing, W.

Royal Parks, &c.—Grass Seeds.

THE COMMISSIONERS of **H.M. WORKS, &c.**, are prepared to receive **TENDERS** for the **SUPPLY of GRASS SEEDS** for use in the Royal Parks, &c., during the year 1894. Forms of Tender, containing full particulars, may be obtained at this Office, any day except Saturday, between the hours of 12 and 3.

Tenders are to be delivered before 12 o'clock, Noon, on **FRIDAY**, the 8th proximo, addressed to "THE SECRETARY, H.M. Office of Works, 12, Whitehall Place, London, S.W.," and endorsed, "Tender for Grass Seeds, Royal Parks, &c."

The Commissioners do not bind themselves to accept the lowest or any tender.

H. W. PRIMROSE, Secretary.
H.M. Office of Works, &c., 12, Whitehall Place, S.W.
August 26, 1893.

Borough of West Ham.—To Nurserymen, &c.

THE COUNCIL hereby invite **TENDERS** for the supply and delivery of about 900 **TREES**, 11,000 **SHRUBS**, and 600 **CREEPERS**.

Further particulars may be obtained at the Office of Mr. Lewis Angell, Borough Engineer, Town Hall, Stratford, E. Tenders endorsed "Tender for Trees, &c.," to be sent to my Office not later than Saturday, September 16th, 1893.

The Council do not bind themselves to accept the lowest or any Tender. The Contractor will be required to enter into a bond, with one surety, for the due performance of the Contract, and no work will be ordered under the Contract until such bond has been duly executed.

The Contractor whose Tender is accepted, and with whom a Contract is entered into, will be required to pay to the whole of his workmen such rate of wages, and observe such hours of labour, as are recognised by the Workmen's Trades Unions and in force at the time of signing the Contract. In the event of any breach of such agreement the Council will enforce the penalty clause in its entirety.

By order of the Council,
FRED. E. HILLEARY, Town Clerk.
Town Hall, West Ham, E. 29th August, 1893.

10,000 GENISTAS, in small 60's, extra fine plants, £4 10s. per 1000, 10s. per 100, cash with order. Post-Office orders payable at Leyton High Street.
T. BALDWIN & SON, Edith Nurseries, Burchall Road, Leyton.

CARNATIONS.—Miss Jolliffe Improved, best winter-blooming, flesh pink, fine bushy plants in 5 inch pots; also **La Neige**, best white. Price on application. Germania, best yellow, in 60's, fit for 48's or planting-out at once, 5s. per dozen, 35s. per 100. Cash with order.

CRANE and CLARKE, The Nurseries, March, Cambs.

LAXTON'S STRAWBERRIES THE BEST.

—Excellent plants, in pots, for forcing and open ground. Runners ready at once of Noble, Vicomtesse, Ruskin, Nicaise, British Queen, President, Commander, Competitor, Jas. Veitch, Keen's Sucree, Latest of All, Marguerite, Paxton, Waterloo, Sensation (new '92), and the grand new "Royal Sovereign" (three certificates), an earlier, richer flavoured, and improved Sir J. Paxton. Handsome coloured plate 6d. (gratis to customers). Full Descriptive Priced List free from—
THOMAS LAXTON, Strawberry Plant Grower, BEDFORD.

STRAWBERRY PLANTS.
Hand-laid Runners and Plants in Pots of the best varieties, including **PRESIDENT, SIR JOSEPH PAXTON, BRITISH QUEEN, KEEN'S SEEDLING, VICOMTESSE H. DE THURY, AUGUSTE NICAISE**, and others.
Descriptive Catalogue on application.

DICKSONS NURSERIES, CHESTER.

GREAT SALE OF ORCHIDS.
BY ORDER OF THE LIQUIDATOR.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN) LIMITED,
Are selling their Immense Stock of
ORCHIDS

at greatly reduced prices, and subject to large discounts.

Inspection is earnestly invited. A new **DESCRIPTIVE and PRICED CATALOGUE** is now ready, and will be sent Post-free on application.

The Company are also selling, at greatly reduced prices, and subject to large discounts, their large Stock of **GRAPE VINES, TEA ROSES** in pots, **FERNS**, and General Stock of **STOVE and GREENHOUSE PLANTS**. Descriptive and Priced **CATALOGUES** Post-free on application to the COMPANY.

THE VINEYARD & NURSERIES, GARSTON, NEAR LIVERPOOL.

F. V. RASPAIL GERANIUM, strong rooted Cuttings, £3 per 1000, or 7s. per 100. Cash with order. **EOULTON**, Beechenlea Nursery, Swanley.

OLD CRIMSON CLOVE CARNATIONS.—Strong-rooted layers. Germania, the best yellow, well-rooted, in large 60's. **JOHNSON AND CO.**, The Nurseries, Hampton.

MILLER'S BULBS, best and cheapest.—12 First Prize Exhibition Hyacinths, in 12 named sorts, 6s. Hyacinths, named, splendid varieties for pots or glasses, at 3s. 6d., 4s. 6d., and 5s. 6d. per doz. Hyacinths, mixed, all colours, finest quality, 11s. 6d. per 100; 1s. 8d. per dozen. Poly-Narcissus, choice mixed, 5s. 6d. per 100; 1s. per dozen. Tulips, Single or Double, choice mixed, each, 3s. 9d. per 100; 7d. per doz. Orders 10s. upwards free. **BULB CATALOGUE** free.—**F. MILLER AND CO.**, 267, Fulham Road, London, S.W.

ALL GOODS DELIVERED FREE on board, London, Antwerp, Rotterdam. £ s. d.
LILIAM HARRISII, 5-7 in. circ., per 1000 bulbs. 6 5 0
" " 7-9 in. " " " 11 10 0
" " 9-11 in. " " " 22 10 0
" **AURATUM**, 7-9 in. " " " 8 7 6
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Prices for **GLADIOLUS**, &c., on application.
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FOR SALE, for want of room, 2 splendid **CYCADS**, in robust health—**ENCEPHALARTOS AL-TENSTEINII**, 70 fronds, 12 feet; stem-girth, 3 feet 2 inches; height, 2 feet 8 inches. **ZAMIA BROOMII**, 60 fronds, 13 feet; girth of stem, 3 feet 9 inches; height of stem, 2 feet. A pair of the most magnificent Cycads in the country. A low price will be taken.
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STOVE and GREENHOUSE.—50 varieties, in 2½-inch pots, 12s. per 100; best Market sorts, in 48's, 6s. per dozen; stores, 6s. per 100. **Adiantum cuneatum**, in 32's, valuable for fronds, 6s. and 8s. per dozen. **Phlebodium aureum** and **Adiantum cuneatum**, for making large plants quickly, 16s. and 20s. per 100. Well packed, put on rail, free for cash with order.

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EXTENSIVE COLLECTIONS OF
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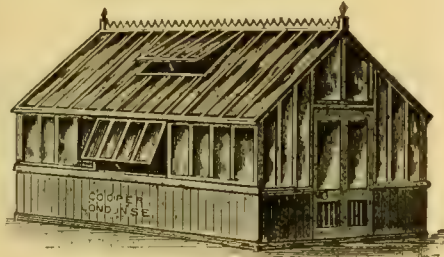
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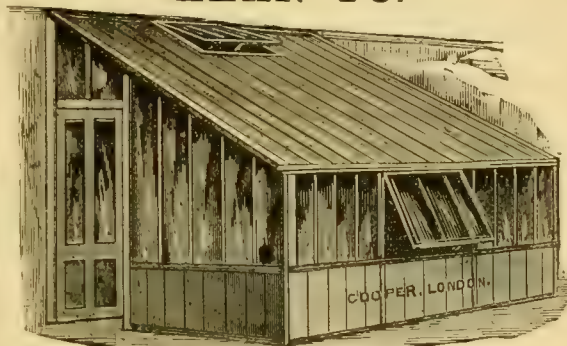
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SPAN ROOF.



THESE GREENHOUSES are made especially for Amateurs at a nominal figure, thereby coming within the reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectable by any handy man or gardener in a few hours. The framework is substantially constructed of red deal, the lower part being filled in with good, sound, well-seasoned, tongued and grooved matchboards. The house is fitted with door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and stages for each side, and good 16oz. glass throughout. All parts securely packed, and put on rail; or delivered, erected, and glazed complete, within twenty miles of London Bridge, at the prices mentioned on each side.

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7ft.	5ft.	7ft.	4ft.	On Rail. 20 mile.
8ft.	5ft.	7ft.	4ft.	£2 16 0 £4 5 0
9ft.	6ft.	7ft.	3in. 4ft.	3 10 0 5 0 0
10ft.	7ft.	7ft.	6in. 4ft. 6in.	4 0 0 5 10 0
12ft.	8ft.	8ft.	5ft.	5 0 0 6 15 0
15ft.	10ft.	8ft.	6in. 5ft.	6 0 0 8 0 0
20ft.	10ft.	9ft.	5ft. 6in.	8 10 0 12 0 0
25ft.	10ft.	9ft.	5ft. 6in.	12 0 0 16 0 0
50ft.	10ft.	9ft.	5ft. 6in.	17 0 0 22 0 0
100ft.	10ft.	9ft.	5ft. 6in.	30 0 0 40 0 0
				50 0 0 70 0 0

Deduct 10 per cent. if required for brickwork.

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Owing to the greatly increasing demand for my Amateur Houses every autumn, and having to refuse so many orders last season through customers not booking their orders early, I have decided to allow a Special Discount of 5 per cent. off the Amateur Greenhouses only to all customers booking their Orders previous to September 16. Please note that on no account will orders be booked after that date under full prices.

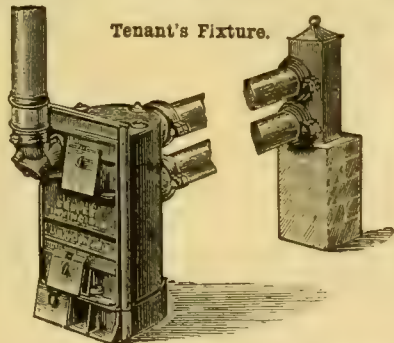
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9ft.	6ft.	7ft.	4ft.	3 10 0 5 0 0
10ft.	7ft.	7ft.	6in. 4ft. 6in.	4 10 0 6 0 0
12ft.	8ft.	8ft.	5ft.	5 10 0 7 5 0
15ft.	10ft.	8ft.	6in. 5ft. 6in.	8 0 0 11 0 0
20ft.	10ft.	9ft.	5ft. 6in.	11 10 0 15 10 0
25ft.	10ft.	9ft.	5ft. 6in.	16 10 0 21 0 0
50ft.	10ft.	9ft.	5ft. 6in.	28 0 0 38 0 0
100ft.	10ft.	9ft.	5ft. 6in.	45 0 0 65 0 0

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When ordering, it should be stated at which end the door is required (when facing front of house from outside); if desired, it can be inserted in front.

"INVINCIBLE" HOT-WATER APPARATUS.



Tenant's Fixture.

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I respectfully beg to inform all readers of this Paper that the first edition (100,000 copies) of my Revised PRICE LIST, consisting of 400 Pages and about 1200 Illustrations, bound in cloth, is now in preparation, and will be published in about three weeks, when I shall have much pleasure in forwarding to every person who has applied for a Price List up to August 24th of this year one post-free, and to all persons up to September 16th who send Three Stamps for postage, after which date the price will be One Shilling each, post-free. This List will be the most Complete in the trade, and has cost several thousand pounds to produce.

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Cost of complete Apparatus for Greenhouses, with 4-inch pipes, flow and return along one side cut and fitted; so that if the internal measurement of the Greenhouse is given, the Apparatus will be sent completely ready for fixing, an advantage which will be appreciated by all.

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7ft. by 5ft., £2 15s.; 9ft. by 6ft., £3; 10ft. by 7ft., £3; 12ft. by 8ft., £3 5s.; 15ft. by 10ft., £4 5s.; 20ft. by 10ft., £5 5s.; 25ft. by 10ft., £5 5s.

The following are extra:—Set of Stoking Tools, 2s. 6d.; Cap to Stove Pipe if required, 1s. 6d.
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10,000 BOXES TO SELECT FROM.

	15-oz.	21-oz.	15-oz.	21-oz.
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4ths ...	8s. 6d.	1s. 6d.	16s. 9d.	22s. 6d.
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PAINT, quality guaranteed: 7 lb., 3s.; 14 lb., 5s. 6d.; 28 lb., 10s.; 56 lb., 18s.; per cwt. 34s.

MANURES, PEAT, SAND, FERTILISERS, &c.

1 lb. tins Fertiliser, 4d., 3s. 6d. per dozen; 1 lb. tins Sunshade, 5d., 5s. per dozen. Special offer to Nurserymen and the Trade:—144 tins Fertiliser and 144 tins Sunshade, £3. Cocoa-nut Fibre Refuse, 8d. per sack; Silver Sand, coarse or fine (2 cwt.), 2s. 3d. per sack; Best Orchid Peat, 3s. per sack; Best Rhododendron Peat, 1s. 6d. per sack; Best Brown Fibrous Peat, 1s. 6d. per sack; Best General Peat, 1s. 6d. per sack; Best Loose Peat, 1s. 6d. per sack; Best Surrey Loam, 1s. 6d. per sack; General Potting Compost, 1s. 3d. per sack; Fern Compost, 1s. 3d. per sack; Bulb Compost, 1s. 3d. per sack; Leaf Soil, well decayed, 1s. 6d. per sack; Pure Wood Charcoal, 2s. 6d. per sack; Best Peruvian Guano, 6d. per tin; Best Lawn Sand, 6d. per tin; Fertiliser for Farming and Market Gardening (in 2 cwt. sacks), 10s. per sack. Worm Destroyer, 6d. per tin; Insecticide, 6d. per tin; Tobacco Paper, 1s. per lb., 22s. 5s. per cwt.; Wonderful New Mushroom Spawn, 4s. per bush. All sacks and bags free. Send for Manure List, post free.

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GRAND ROMAN HYACINTHS, 15s. per 100; usual size, 11s. per 100.

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LILIUM HARRISII, 7 to 9 inches round, 6s. per dozen; 9 to 11 inches, 10s. per dozen.

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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 2, 1893.

THE WAYS OF THE ROSES.

MANY a curious chapter has been written on the idiosyncrasies of the genus "homo," and I think those who have gone through the world with their eyes and ears open could add from their own experience. I know of one lady whom three Strawberries would bring out in a rash. I know of a strong lusty man who is in a state of nervous prostration if a cat is in the room, and who has detected pussy's presence in his bedroom when everyone assured him that it was impossible. The great scholar, Erasmus, is, I believe, said to have fainted at the smell of fish. We have each, too, our own peculiar one, if we only knew it, and can recall many of those of our acquaintances; and as I have been acquainted with the Rose for many years, I should like to say a few words on her idiosyncrasies.

Of course, she leads a very artificial life (and so, as a matter of fact, do we); she is put out to nurse in her earliest babyhood; sometimes she clings very close to her foster-mother, but in some cases she repudiates the connection, and sulks, and gets into a bad state of health, ending often in death; thus, Tea Roses have altogether refused to have anything to do with the Manetti as their foster-mother. There may be a few that will endure her embraces, but the greater number of them languish and die. Well, this is apparently easy to be accounted for; the foster-mother is too strong for the more delicate bantling she takes under her charge, who cannot digest the strong food with which she is supplied so largely, and dyspepsia ensues, and the poor thing succumbs.

Another peculiarity is the manner in which some varieties differ in their behaviour in different localities; this came out amusingly before the National Rose Society's Catalogue Committee, when the description of the habit of the Rose was brought under discussion. Some one would suggest that it should only be described as moderate. "Moderate!" one member would say; "why, it is one of the strongest growers I have, and makes shoots 6 feet long." On inquiry, it was found that there was no difference in the stock or mode of culture; it must have had something in the situation that especially suited it. On the other hand, there are instances where some particular variety refuses to behave itself in anything like a seemly manner. Let me instance the case of a friend who grows Teas, as he does everything he attempts, to perfection, and yet there is one which is by no means a delicate grower, Rubens, which he cannot manage; he has tried it in all ways on half-standards, dwarfs, and standards. His plants grow vigorously, produce good shoots, show abundance of bloom, and yet he never has a flower worth looking at, all thin and poor; but the same grower had shoots of that somewhat

tender Rose, Comtesse de Nadaillac, as thick as one's little finger. I have observed these same peculiarities in my own small garden; thus probably we have, as a general rule, no stronger grower than Etienne Levet, yet it will never do anything with me either on the Manetti or Briar, while other H.P.'s do fairly well.

I am sometimes inclined to think that there are strains in some of our Roses in which either colour or vigour are more freely developed; I know this is the case with regard to Maréchal Niel, for Mr. Geo. Mount, of Canterbury, had one the buds of which he had obtained in the neighbourhood, which was distinctly deeper in colour than the ordinary type. In the same way, I have in my own garden plants of Comtesse de Nadaillac, which show a remarkable depth of colour. The climbing varieties, both of Teas and H.P.'s, give another instance of these peculiarities. Why should a plant of the delicate-growing variety, such as *Devoniensis*, develop a shoot some 20 feet long, and form thereby the foundation of a Rose of an entirely new character? I do not think that there is any explanation for this extraordinary freak [Reversion, Ed.]. *Niphetos* is a more vigorous variety than *Devoniensis*, and it, too, but in one instance, shows the same tendency, and Climbing *Niphetos* sent out by Keynes, Williams & Co., forms a valuable addition to our Tea Roses; but the extraordinary idiosyncrasy in connection with Roses is that which almost every season bears witness to. Every year there are some varieties, perhaps not more than two or three, which are everywhere good. It does not seem to matter what the soil, situation, or stock may be—in all cases, and in all parts of the country, fine blooms of these varieties are exhibited. This has been the case this remarkably trying year. In the class of Tea Roses, Marie van Houtte and Madame Hoste have everywhere been good, the former displaying wonderful beauty in its delicate creamy-yellow flowers, with the pink edging which so greatly adds to their beauty; while Madame Hoste, which many persons were inclined to look upon as too thin a flower, has proved itself to be a most valuable Rose. At the same time, other Tea Roses on which we have been in the habit of relying, noticeably *Souvenir d'Elise*, have been much below their usual standard of excellence. Amongst the hybrid perpetuals, that old and beautiful flower, Horace Vernet, has had a good time of it; it gained for Messrs. Harkness & Son, at the Crystal Palace, the National Rose Society's Silver Medal for the best Rose. Comte Raimbaud was another Rose that was well to the front; indeed, contrary to general expectation, the dark-coloured Roses, which it might have been supposed would have suffered from the fierce sunlight which has characterised this year, seems to have revelled in it, while other Roses lighter in colour do not seem to have fared so well; thus, for example, how very few good blooms of those two fine Roses, La France and Mrs. John Laing, were seen; one would have thought that it was a season that would have especially suited them. There were two or three other idiosyncrasies which also puzzle me. Why, for example, are some Roses so much more subject to mildew than others? For instance, take Her Majesty, probably one of the greatest offenders we have in this respect, so much so, that some of the growers give her a place entirely to herself for fear of her contaminating others, and yet neither of her parents are subject to it. Then, again, why are Abel Carrière and Jean Soupert so violently attacked by it, while other dark-coloured Roses escape scot-

free? Again, I find that some plants of some hybrids will always give autumnal blooms, while others of the same variety never do. Thus, among some plants of Gabriel Luizet there are a few which anyone looking at now would say that it is a summer Rose, while in the same row there are others which have a fair amount of bloom, and this peculiarity continues from year to year, the same plants always being flowerless in autumn, the others having always autumn bloom. With regard to orange fungus, there is also another strange fact to be noticed; however virulent it may be amongst hybrid perpetuals, it never seems to me to attack the Teas. Some years ago I was terribly plagued by this pest, and listened to the various suggestions which were placed before me to ensure its destruction. Of some of them I could say the remedy is worse than the disease; while of others, that they were perfectly ineffectual; then after a time it left me, and I have been very little troubled with it since. I may say, however, that I do not think it to be so injurious to the plants as some have imagined.

I have thus enumerated some of the idiosyncrasies which have forced themselves upon my notice during a long acquaintance with the Queen of flowers; there are others, I doubt not, which have suggested themselves to the minds of many rosarians. I do not pretend to give any reason for these things, and I very much question if even those scientists who are so omniscient can give us any solid reasons for them. These facts may not have much bearing on the practical management and culture of the Rose, but I think they are interesting, as indeed is everything connected with our favourite flower. *Wild Rose*.

NEW OR NOTEWORTHY PLANTS.

CATTLEYA LABIATA MARGUERITE.

THIS is one of the most stately, and at the same time one of the most delicately beautiful of the numerous varieties of *C. labiata* which I have seen. The petals have a spread of 9 inches from tip to tip; the sepals and petals are white, with that delicate pink tint seen in the pearl, over their entire surface, except the mid-ribs of the petals which are silvery-white. The lip is also white, with a bright chrome-yellow base, almost devoid of the dark lines usually seen radiating from the interior of the tube. The fringed edge has the same pearly tint on the petals, and in lieu of the more or less developed crimson blotch on the front of the lip is a small feather-like mark, composed of about ten crimson lines in front of the before-mentioned chrome-yellow centre of the lip. It is of the *Gaskelliana alba* section, and many would think it even more beautiful than that variety. It flowered with Joseph Broome, Esq., High Sheriff of the County of Carnarvon, at his charming home, Sunny Hill, Llandudno. Mr. Broome is an amateur of great experience, and is a clever grower of Cattleyas and *Lælias* especially. It is named after his little daughter. *James O'Brien*.

STREPTOCARPUS CROSSES.

THE series of *Gloxinia*-like plants, for which we are mainly indebted to Mr. Watson of Kew, is progressing both in variety and in popular favour. They are the outcome of the cross-fertilisation of *S. Rexii* by *S. Dammii* and others, so that now, after the fashion of florists' flowers, their parentage is very much mixed. The result is an increased variety in colour, larger and more numerous flowers. How well they are suited for cut flowers was illustrated by the use made of them in one of the competitive classes at the Agricultural Hall this week. The history of these plants is written in the *Gardeners' Chronicle*, July 30, 1887, p. 137. *S. Watsoni* ×, a variety with rosy-purple flowers, is figured in the same volume, August 20, 1887, p. 215.

ORCHID NOTES AND GLEANINGS.

BLETIA SHEPHERDII.

BLETIAS are not in fashion at present, or this would be thought more of than it is. Although known in cultivation for many years, it is still uncommon, but we were pleased to see it in the nurseries of Messrs. Jas. Veitch & Son, at Chelsea, lately. Its elegant sprays of flowers were about 2 feet in height, each flower $1\frac{1}{2}$ inch across, and of a beautiful violet-purple colour.

THUNIA PULCHRA.

This is one of the most floriferous of the species, and although the individual flowers are not so large as those of *T. Marshalliana*, their quantity and the graceful manner in which the inflorescence displays itself, compensates for that defect, if one it be. The flowers are white, the labellum streaked and tinged with chocolate colour. Like all the other *Thunias*, it requires a resting period in a cool situation after the leaves have fallen, it being kept dry at the root the while. It was in flower recently in the nurseries of Messrs. Jas. Veitch & Son, at Chelsea.

ARACHNANTHE LOWII (VANDA LOWII).

A very fine plant of this remarkable Orchid is in flower at Messrs. F. Sander & Co.'s nursery, St. Albans. It has seven long drooping racemes of its extraordinary dimorphous flowers, over 300 in all. Its ordinary flowers are of a very bright shade of deep red, with some yellow spaces between the blotches; the odd flowers nearest to the plant being rich bright yellow, with some crimson spots. One of the spikes, in addition to the two bright yellow odd flowers, has another almost intermediate in form and colour between the two sets of flowers—the ordinary and the basal ones. The plant is in fine health, and is stated to be second only to the famed *Ferrières* specimen. *J. O'B.*

ODONTOGLOSSUM EDWARDI.

This is a robust-growing evergreen plant, making pseudobulbs and leaves of about the same deep green colour, and producing a strong branching spike of bloom. The individual flowers, however, are small, measuring only about an inch across; but they are numerous, and yield a delicious perfume, whilst the colour is rich purplish-mauve, which renders it very conspicuous, and distinct from all its kindred. We are unable to state at what altitude it was found, but we presume that it grows at a considerable elevation above the level of the sea, for we have found it to thrive best when treated quite cool, and we therefore advise our readers to keep it at the coolest end of the *Odontoglossum*-house, potting it in good upland peat fibre, mixed with some fresh and growing sphagnum moss. The pots should be well drained, for it likes an abundance of water to the roots when growing, and means should always be provided for this to pass away quickly, and a nice moist atmosphere should be maintained; in fact, the plant should never be allowed to become quite dry at any season, although, as a matter of course, very much less water is necessary in the winter months than is required during the spring and summer. Some slight syringing will also be advantageous during the dry hot weather, but it should be done very carefully with a fine rose, and just enough water should be used as will fall upon the plants in the form of a gentle dew. *Orchid Album*, vol. x., part 117.

CYMBIDIUM EBURNEUM.

Much has been said and written about this species and its requirements, but nearly all that was formerly advocated as necessary for this plant is now open to objections, as nearly all the growers in the early days erred in giving it too much heat, and in keeping it too dry through the resting season. In potting it should be remembered that it is a plant which makes stout and fleshy roots, and in great numbers; and it requires plenty of space to allow the roots to ramble. The pots, too, must be well drained to ensure sweetness, which can never be attained if water is allowed



FIG. 47.—STREPTOCARPUS CROSSES: COLOURS WHITE, LILAC, ETC. (SEE P. 264)

to stagnate in the pots. The soil should consist of good turfy loam, three parts, and fibrous peat, sphagnum moss, and sharp Bedfordshire sand, one part of each, and they should be potted as ordinary fine-leaved plants, leaving sufficient space for a good supply of water. The *Odontoglossum*-house will suit it admirably during the greater part of the season, but as it begins to move, about the beginning of the year, it may be removed into the *Cattleya*-house; treated in this manner the plants will not be subject to the spot on their leaves, which used to be such a great disfigurement to them. *Orohid Album*, vol. x., part 117.

NURSERY NOTES.

MESSRS. WALSHAW AND SONS, SCARBOROUGH.

VISITORS to this fine watering-place, who are interested in the cultivation of plants and flowers, should not fail to inspect the well-kept establishment of Messrs. Walshaw & Sons. The North of England is not behind-hand in the advance that has been made in horticulture during the last twenty years, although a vast amount of southern produce is still required to meet the demand. This firm is actively engaged in extensions of the usual market type, and I had much pleasure in seeing the improvements lately made in this very old-established business. Twenty houses filled with *Solanums*, *Bouvardias*, *Ferns*, *Gardenias*, *Eucharis*, *Palms*, *Aspidistras*, *Liliums*, &c., are a sufficient indication that a lively business is being done. Carnations are well done, both in and out-of-doors, and at the time of my visit (August 14) the operation of layering, which had been daily carried on for the past three weeks, had been just finished; it is a tradition of the firm that all layering must be finished by the first week in August.

Chrysanthemums seemed to fill up every atom of space available, the leading varieties being *Lady Selborne*, for early work, and *Mdlle. Lacroix* for late cutting; *Mons. W. Holmes*, *Source d'Or*, *Margot*, and *Cullingfordii* are the favourites amongst the coloured ones. I was particularly struck by the perfect health and cleanliness of the plants, which betoken careful and efficient attention on the part of the employes.

The annual bulb importations were just beginning to arrive, which reach a large amount each year, as, in addition to their own requirements, the firm do a wholesale and retail trade. The advantage of proving their purchases by growing large quantities themselves must be an advantage to them.

A glance round the outside stock soon shows what is required in seaside planting. *Aucubajaponica*, *Euonymus*, broad-leaved *Hollies*, and *Berberis*, are the shrubs that are found to do the best, and these are largely grown. To give full scope to the outside stock a branch nursery has been established at Scalby, a village about three miles away. Here there are under cultivation several acres of *Roses*, *H. P.* and *Teas*; *Daffodils*, *Conifers*, &c. Nothing could be finer than the *Roses* this year; there are in 30,000 in number, evidently thoroughly suited with soil and situation, and they will help to extend the already good reputation of the firm. *Bailey Waddes*, *Birdsall Gardens*, *York*.

SUNNINGDALE PARK, BERK- SHIRE.

THE residence of Major W. J. Joicey, is situated in beautifully undulating grounds some 112 acres in extent, and naturally clad on the higher ground with *Pine trees*, beneath which the *Bracken* and purple *Heather* flourish, their beauties supplemented by plantations of *Rhododendrons*, *Hydrangea paniculata*, and other flowering shrubs, which grow most luxuriantly. The surrounding of *Pine trees* serves admirably to enclose and to protect the gardens from the keen winds, and also to lend an additional

charm to the walks under their shelter by the pleasant and healthy odour they emit. It is not yet three years since the gardener, Mr. Fred. J. Thorne, had instructions to carry out the beautifying and developing as a modern garden this naturally pretty place, and already has he accomplished a great deal towards attaining that end, and that, too, without interfering with the sylvan beauty of the place, or its noble *Beeches*, *Oaks*, and *Spanish Chestnuts*, which form such grand objects when viewed from the high ground of the terrace in front of the mansion.

The estate is rendered as complete as possible, inside the main lodge gates being the stables, electric lighting buildings, fire-engine station, and further on capital accommodation for about a score of gardeners. Then we come to the plant and fruit houses, and the fact is soon revealed that utility is the order of the day, and that plants which give good supplies of cut flowers for all seasons, and plants for table and indoor decoration, and fruits of all kinds have to be forthcoming in quantity. As one of the most useful classes of plants for giving cut flowers of lasting quality, the *Orchids* have been taken in hand, and have proved so satisfactory that their culture is to be extended. Several very fine and well-built ranges have been constructed for them, and the vigorous condition of the occupants of all of them speak much for the aptitude with which Mr. Thorne treats them collectively and individually. In the first large span-roofed structure of three divisions, the first division was filled with *Orchids* in flower, among them being the beautiful new *Miltonia* × *Joiceyana*, some new hybrid *Cypripedium* (*barbatum* × *selligerum*), very fine and richly coloured; many *Cattleya labiata* *Gaskelliana*, *Dendrobium Dalhousieanum*, grandly flowered; *D. O'Brienianum*, a very singular though not a showy species; *Calanthe veratrifolia*, and various *Cypripediums*. Here the *Anguloa Ruckerii* and other *Anguloas* grow splendidly, some of the plants in 7-inch pots having borne over two dozens of flowers. In the next division is a finely-flowered plant of *Vanda Sanderiana*, for which a Cultural Commendation was awarded at the last meeting of the Royal Horticultural Society; some *Cypripediums*, among which were *C. Sedeni candidulum*, *C. oenanthum*, and a new hybrid, *C. Dayanum* × *superbiens*. In the third division *Staurosis lissocylloides* (*Vanda Batemanni*) is in bloom, so also *Cynoches ventricosum* and other interesting plants. In the *Odontoglossum*-house, the plants are in splendid condition, among those in bloom being *O. Uro-Skinneri*, *O. Harryanum*, a good specimen of the scarlet *Epidendrum rhizophorum*, several of the elegant *Oncidium incurvum*, *Dendrobium cariniferum*, one of the neatest, although not one of the showiest of the nigro-hirsute *Dendrobiums*, and various other species.

In the other *Orchid*-houses we noted in bud a lot of the new *Cattleya Alexandra*, *Dendrobium Phalenopsis Schroderianum*, which grows here splendidly in a moist warm house, and flowers profusely, one of the plants having five spikes; a batch of *Miltonia vexillaria* in a very vigorous condition, as indeed all the plants are.

In the other plant-houses, we found a splendid lot of brightly-coloured *Crotons* and *Dracenas* of all sizes; a fine batch of *Poinsettias*, a number of *Hydrangeas*, which are here grown to bear heads over 2 feet across; a good lot of *Ferns*, principally for cutting; *Pancratiums*, *Eucharis*, *Vallotas*, and climbing *Allamandas*.

The fruit-houses comprise some extensive ranges of vineries, *Peach* and *Nectarine*-houses, &c., and all are in good condition; the existing crops, especially of *Grapes*, tell of former and future plenty.

The kitchen gardens are rendered bright by herbaceous and annual flower borders, the *Zinnias* being magnificent. The season has been a trying one on this dry gravelly and sandy soil, but Mr. Thorne says that he has managed better than he expected to keep up the supply, and has a good prospect for produce for winter and spring. *Apple* and *Pear* crops are light here, but most other fruits have been abundant. The furnishing of the walls has

been very cleverly managed, and indeed all the work done is thoroughly carried out so as to be a permanent benefit.

THE WORLD'S FAIR, CHICAGO.

(From our Special Correspondent.)

AFTER the *Rhododendrons* were over, the island was bright with *Pæonies*, H. Cannell & Sons, of Swanley, Kent, having a very good bed. They showed some of the best varieties, rich especially in light colours. Ellwanger & Barry, Rochester, N.Y., made a good *Pæony* display, as did Messrs. Pitcher & Manda, of Short Hills Nursery, New Jersey, U.S.A., and several Dutch firms.

The *Rose* garden was quite attractive in June, but it did not, at any time, really meet my expectations. The best show, when the *June Roses* were all in bloom, was made by Alex. Dickson & Son, Newtownards, Ireland. Their new *Margaret Dickson* did not show to great advantage, and was disappointing, though we hear its praise from other places in America. But their *Baroness Rothschilds* were very good, and their bed of *Mosses* excellent. A number of standards were shown on the Island by Dutch and German exhibitors, the French standards being arranged near the Woman's Building; but plants of this style do not continue to do well in our climate, and are not admired. The Associated *Dræden Gardeners* have some good beds of *Teas* and *H. P.'s* and they have been flowering freely. The American exhibitors have really made more show with *Teas* than any other class. Mr. J. C. Vaughan of Chicago makes a good show of the pretty *Polyantha Clothilde Soupert*, which blooms freely. Among *H. P.'s* Mrs. John Laing is the very best here; it has produced more flowers, and is of uniformly better quality than any other hybrid perpetual shown. The soil in this *Rose* garden is light, hungry, and dry, exposed to sweeping winds, so we can hardly wonder that it failed to produce the show we wished.

Just now the *Phloxes* are very showy, most of the *Pæony* beds are hidden by them. Messrs. H. Cannell and Sons have a fine bed, including a number of varieties; I should divide the honours between them and Messrs. Ellwanger & Barry, Rochester, N.Y. The last-named firm has a very excellent white *Phlox*, *The Queen*, which in a large mass is very fine. A number of other firms have planted *Phlox*, but the plants are not in masses, and do not show so well as those named. The *Boskoop Nursery Association* have four beds of *Clematis* in the centre of the *Rose* garden; among them *C. viticella venosa*, *C. Jackmanni*, and *C. J. alba*, *Duchess of Teck*, and *Thunbergii* flowered very freely.

At the present time (August 8), the hybrid *Gladioli* exhibited by V. Lemoine et fils, Nancy, France, are blooming well in beds north of the horticultural building. The large size of these flowers, and their rich colours and markings, make them very noticeable; and it must be confessed that but for them the *Gladiolus* exhibit would be below the level of mediocrity.

We had a very interesting group of *Gloxinias* in one of the model houses devoted to the New York State exhibit, well grown plants of an excellent strain, but after reading recently in an English gardening paper of *Gloxinias* with 100 flowers or more to a plant, I begin to fear ours are not very remarkable. In the same house were some good tuberous *Begonias* which promised well, but they were attacked by disease in July, and are not yet recovered.

The lawn in front of the Horticultural Building is now occupied by dwarf *Cannas*, which have replaced the *Pansies*. Most of the beds are planted with one sort only; some of those now in flower are *Madame Crozy*, *J. D. Cabos*, *Captain P. de Suzzoni*, *Statuaire Fulconia*, *Alphonse Bouvier*, *Miss Sarah Hill*, and *Florence Vaughan*. The exhibitors are Messrs. F. R. Pierson Co., Parrytown, N.Y.; Messrs. Pitcher & Manda, Short Hills, N.J.; Mr. H. A. Dreer, Philadelphia; Mr. Robert Craig, Philadelphia; and Mr. J. C. Vaughan, Chicago. They are making a fine show.

A basin of aquatics, in front of the large building, is now bright with the *Water Poppy*, and a number

of *Nymphæas* are showing bloom. This pool is filled by Wm. Tricker, Dongan Hills, N.Y.; while a large basin in the south court of the Horticultural Building is filled with aquatics by E. D. Sturtevant, Borden-town, N.J. Peter Henderson & Co. of New York exhibited aquatics in one of the New York green-houses, including some of M. Marliac's *Nymphæas*, which are largely used in the Chicago parks. In this aquatic-house a large plant of *Aristolochia gigas* var. *Sturtevanti* has been flowering freely for some time; its huge ill-smelling flowers excite much wonder. Another oddity in the Horticultural Building is a plant (not living) of *Welwitschia mirabilis*, which, I believe, is to be seen at Kew, but unless it

is considered among them. Besides its undoubted beauty as a flower, it is interesting as being the first hybrid which has been obtained from the remarkable *C. Rothschildianum*; and it is hoped that it will not be the last which will emanate from the careful operations of Mr. C. Maynard, who is the Seden of Messrs. Sander & Co.'s establishment at St. Albans, and in honour of whom *Lælio-Cattleya Maynardi* is named. As will be seen from the sketch, the flowers are of a good size, the upper sepal being pale yellow, with dark purple bands running from base to apex, and somewhat feathered at the margins. The lower sepal is similar, and the fringed petals are also pale



FIG. 48.—*CYPRIPEDIUM* × *MASSAIANUM*.

is present in some botanical museums, this is its first appearance here.

A quantity of very fine forced Lily of the Valley, from pipes kept in cold storage, is one of the present attractions.

Mr. Geo. Nicholson, of Kew, and Prof. Dr. L. Wittmack, of Berlin, have been in Chicago recently, acting as jurors in the horticultural section. They attended the convention of the Society of American Florists, at St. Louis, where they were received with much enthusiasm, and will attend the Horticultural Congress in this city the week following the St. Louis convention. *E. L. Taplin, Chicago.*

CYPRIPEDIUM × *MASSAIANUM*.

ALTHOUGH it must be admitted that many hybrid *Cypripediums* are only fit to be relegated to that "heap" usually associated with the sufferings of the patient Job, still there are many worthy of a better fate, and *Cypripedium* × *Massaianum* must be con-

sidered among them. Besides its undoubted beauty as a flower, it is interesting as being the first hybrid which has been obtained from the remarkable *C. Rothschildianum*; and it is hoped that it will not be the last which will emanate from the careful operations of Mr. C. Maynard, who is the Seden of Messrs. Sander & Co.'s establishment at St. Albans, and in honour of whom *Lælio-Cattleya Maynardi* is named. As will be seen from the sketch, the flowers are of a good size, the upper sepal being pale yellow, with dark purple bands running from base to apex, and somewhat feathered at the margins. The lower sepal is similar, and the fringed petals are also pale

THE SHIELD FERNS AS DECORATIVE PLANTS.

To all intents and purposes, the only form of Shield Fern (*Polystichum*) popularly used for decorative purposes, and distributed generally by horticultural tradesmen, is the common bulbiferous variety known as *P. angulare proliferum*, Allchin. This is distinguished from the normal Shield Fern by bearing much longer and more tapering fronds, the subdivisions of which are very attenuate and

numerous, while bulbils are formed so profusely in the axils of the pinnae, and develop so rapidly into little plants if the fronds be layered, that we have at once the cause of its varietal name, and that of its prevalence in trade hands, its propagation being of the easiest. The perfect hardiness and thoroughly evergreen character of the family render all its varietal members peculiarly adapted for pet pot-plants; and though they certainly lack the annual charm of flowering plants, yielding no crop of brilliant-coloured blossoms, yet in many of the varieties the circle of rising fronds in the spring, covered with dense snow-white and pale-brown scales, each frond gracefully uncoiling backwards in the form of a crozier, forms a harvest for the quiet eye which is by no means to be despised. Outside this lies the additional charm of immense variety of form and make, and even size, which enables the true *Polystichum* fancier to put side by side an enormous plant, with dense yard-long fronds spreading laxly all around like a gigantic vegetable star 6 feet and more across, and a tiny gem of that identical species which, though fully grown, will be roomily housed in a thumb-pot—*P. a. Lyellii*, to wit. Between these two extremes there are all grades, and among these grades an infinite additional range of form in the shape of varied modes of subdivision, the mitten-shaped pinnules of the normal type being expanded and contracted and modified in a thousand ways, while the fronds in many cases possess additional characters in the way of tasselling, greater or less attenuation or congestion, and so on *ad infinitum*, so that independently altogether of minor varieties, which only an expert could pronounce as such, there are some hundreds of widely differentiated forms of much more ornate character than the common, the special characters of which, as the French say, "jump to the eyes." Undoubtedly the most beautiful of these are the "plumose" or extra-feathery forms, in which the normal plan of the species is merely elaborated to the utmost by constant subdivision.

In the Holly Fern (*P. Lonchitis*) we have the simplest form of the species, i.e., a midrib to which, on each side, a row of quite undivided mitten-shaped bristly pinnæ is attached, each of which somewhat resembles a Holly-leaf, whence the popular name. In the hard Shield Fern (*P. aculeatum*), in its young state, *P. Lonchitis* is so closely imitated, that it is often confounded with it; but as the plant develops, the lobes or pinnæ split and form others on the same "mitten" plan, so that in adult normal plants of this and its congener *P. angulare*, the soft Shield Fern, the pinnæ or secondary divisions of the frond are like the whole frond of *P. Lonchitis*, and represent thus the first stage towards the plumose, in the finest of which *P. a. divisilobum plumosum densum* (Jones and Fox), division to the fifth stage is actually reached, so that each "mitten" is resolved into hundreds of long slender silky divisions, which, in the plant cited, so densely overlap each other that the frond appears to be built of the finest moss, and the entire plant forms a gem of vegetative beauty, which once seen is not soon forgotten. This wonderful Fern and its sister plants, *P. ang. d. p. Baldwinii*, *laxum*, and *robustum*, sported at one stride from a wild find of very inferior type, and hence are not as most people would imagine the outcome of a long period of selective culture. Curiously enough, a fifth splendid form, *imbricatum*, the densest of all, and much tougher in texture than the others, was raised by Mr. Lowe from a bulbil of *densum*, establishing thus the possibility of secondary sports through bulbils as well as spores. Undoubtedly one of the chief reasons why the great bulk of the varieties of this charming species are *caviare* to the multitude, is the length of time which they demand for development from the spores, fully two years being required under the most favourable conditions before a decent characteristic plant can be so raised. Nurserymen, therefore, with few exceptions, ignore them, and the consequent fact that they are not popularly advertised or exhibited for sale has its natural corollary in a general ignorance of their very

existence. Of late years, however, much has been done to extend the popular acquaintance with this and the other British species, and notably the marvellous Kew collection has contributed materially to this desirable end.

The Royal Horticultural Society for several successive years has held exhibitions at Chiswick and Westminster, where hundreds of the finest types have been worthily represented, the Shield Ferns especially holding a foremost place among the species shown. What we want now, in order that a still wider popular knowledge should be spread, is the establishment of some fairly representative collection of our native Ferns in our public parks and gardens. Already, in one of our small East-end parks (West Ham), a long range of rockwork is devoted to some hundreds of the choicest types; but here, alas! it has not been deemed advisable to carry a path in close proximity, for fear they should be stolen, and hence a stretch of untrodden grass intervenes as a barrier between the Ferns and the public, and renders the collection useless. Now, in Hyde Park, at the eastern end of the Serpentine, there is an ideal station for a very host of British varieties, and we would ask, to what better use could such a position be devoted than the display of a number of beautiful native plants, the natural offspring of our own hills and valleys, and in the production of which we Britishers stand *facile principes* in the whole world. A few hundred plants, embracing the best forms, could be installed there at small cost, and form not only "things of beauty," but also "joys for ever," throwing up their feathery verdure in perennial profusion when once congenially installed. We hope this suggestion may meet the eye of some one in authority, and bear the fruits we long for.

At Clifton, in the Zoological Gardens there, the late Colonel A. M. Jones added one of the chief attractions by planting out the bulk of his splendid collection in beds, sheltered by shrubs such as Azaleas, Rhododendrons, &c., which lost nothing of their own individual charms by being associated with the plummy Ferns which occupied the foreground. Here the Shield Ferns took, as ever, the most prominent place, since Colonel Jones and his colleague, Mr. E. F. Fox, were before all things, Polystichum fanciers, and many of the gems jointly raised by them found their way thither. Among these were, and presumably are, many examples of that "crossing," the possibility of which has of late years been practically demonstrated by the production of a number of mixed types in which the leading characteristics of two quite distinct varieties were most unmistakably commingled, divisilobes, multilobes, and dentilobes being furnished with tassels by being sown together with tasselled varieties, and it is very curious to observe in some of these that the peculiar influence which produces the tassel or crest is often alone transmitted, the shape or make of the frond not being otherwise affected. To illustrate this, an attenuate form known as *P. ang. lineare*, Tait, with very narrow pinnules, was crossed with a polydactylous form with normal pinnules; the result is Tait's form exactly, plus polydactylism, the narrow pinnules not being altered in the least towards the normal. In the present state of our knowledge in re-crossing of Ferns, we cannot say which is really the mother prothallus, and it is possible, therefore, that Tait's form was so prepotent as to obliterate the normal character of the pinnules of the polydactylous form, the "lineare" being the male. On the other hand, the polydactylous form used seemed to possess a peculiarly strong power of crossing others, a very large number of forms having been influenced by it, and as it is an imperfect type, i.e. irregular, and precisely the same irregular character is seen in all the crosses, its influence is very distinctly traceable.

Some idea of the immense versatility of this species may be gathered from the fact that Mr. E. J. Lowe, in his recently-published list of *British Ferns*, describes no fewer than 428 varieties, viz., 34 of *P. aculeatum*, and 394 of *P. angulare*, of which by

far the major number were found as wild sports, chiefly in the south-western counties of England. To attempt within the limits open to us to describe these would be altogether vain, and we can therefore only refer those who are interested to such lists and catalogues as are published and advertised; suffice it to say that, while as we have seen, there are splendid robust forms which would be conspicuous central ornaments for large conservatories, others of equal beauty in their way are so diminutive, that a decent collection might be spaciouly housed in a single north window, a situation indeed where, in thousands of dwellings, pot-plants of the Shield Ferns would find a congenial home, and afford a fund of inexhaustible pleasure to the cultivator. If carefully sheltered from the weather, as they would be in such a situation, they remain perfectly green throughout the winter, the old fronds only drooping when the new ones have asserted themselves. Culture is of the simplest; loam and leaf-mould half-and-half, with a dash of sharp sand, forms the compost; drown the pots well, and during the winter see that they do not get dry, since in their natural habitat they are usually thoroughly soaked when not frozen. *Chas. T. Druery.*

BOOK NOTICE.

THE WORK OF THE SOIL, AND ITS NITRIFICATION, by Mons. P. P. Dehérain (*Comptes rendus des séances de l'Académie des Sciences*, t. cxvi.; séance du 15 Mai, 1893).

THE author says it is more than fifty years since Liebig taught us that cultivated soils contain considerable quantities of organic substance. Ordinary arable clayey soils in fair condition of fertility, when all vegetable roots have been removed, will contain, in the first 9 inches of the surface-soil, a quantity of organic matter containing about 3000 lb. of nitrogen, and 30,000 lb. of carbon per acre.

When we remember, therefore, that full crops of many of our cultivated plants only need from 100 to 150 lb. of nitrogen per acre for their successful growth, it is somewhat surprising to learn that with the large store of organic nitrogen in the soil, we find it necessary to add nitrogenous manures at all, yet the efficiency of nitrate of soda and sulphate of ammonia as fertilisers has long ago been abundantly proved.

Boussingault showed us that, in fact, the nitrogenous matters of arable soils are usually inert and inactive for plant-life, their oxidation and nitrification being too slow to subserve the requirements of the multitudinous individuals that make up the crops of a farm or of a garden; hence, the soil left to its own resources is unable to satisfy the demands made upon it. Even with an abundant dressing of farm-yard manure, certain soils may still remain unproductive owing to the non-nitrification of its organic matter.

We get a pretty correct idea of what takes place in a soil in regard to nitrification from an analysis of the drainage-water percolating through it. The author found in 1891 that various soils that had received a copious manuring with about 24 tons per acre of farmyard dung, allowed the following quantities of nitric nitrogen to drain away. For comparison is also given the amount of nitric nitrogen percolated through unmanured soil.

Nitrogen as Nitrates in Drainage Water.

Seasons.	Quantities in lbs. per Acre.	
	Dunged Soil.	Unmanured Soil.
Spring	46.1	19.5
Summer	22.2	13.5
Autumn	38.2	28.3
Winter	17.4	13.5
Yearly total	124.3	74.8

The total quantity of nitrates formed in the soil is thus seen to be considerable, ranging from nearly

75 lb. in the unmanured land, to more than 124 lb. in the dunged soil. But it may be well to note that the whole of this nitrogen is not available to our ordinary cultivated crops, for the reason that many of them only assimilate the spring or early summer nitrates, the principal growth and power of assimilation having ceased by the month of July.

Root-crops, such as Potatoes, Beetroots, and Turnips, may still get hold of summer nitrates, but the nitrates produced in autumn and winter are of little use. The spring nitrification alone is, as a rule, quite insufficient; hence the use of increasing quantities of nitrogenous manures.

The author being anxious to ascertain if it was possible to excite in our cultivated soils during the period of spring-time a sufficiently active nitrification, so as to avoid the great expense of these artificial manures, a series of experiments was instituted with soils obtained from different districts of France to determine the point.

From the results obtained, the following conclusions were drawn: Trituration or pounding of the soil is a powerful method for causing active nitrification.

In making preparation for winter, soils should be dug or ploughed, and left in a rough condition, with the clods unbroken. There ought to be no trituration if the soil is to remain uncovered during the winter, the breaking up of the soil-particles causing active nitrification, which must be absolutely hurtful, the nitrates formed being dissolved, carried into the drains or lower sub-soil and lost.

With the return of spring, seed-sowing begins. Trituration should then be as complete as possible, all known methods for pulverising and crumbling the soil being adopted.

During the growth of the crops the hand or horse-hoe should be vigorously used, for it was found that the weight of Beet roots obtained was in proportion to the number of cross-ploughings the land had received.

We may mention that in three soils at Rothamsted, Hertfordshire, in fair agricultural condition, cultivated as bare fallow since the harvest of the previous year, 56.5, 58.8, and 59.9 lb. of nitrogen as nitric acid per acre were found in September or October, to a depth of 27 inches. Also the soils of the various plots in the experimental Wheat-field at Rothamsted were sampled in October, 1881, to the depth of 27 inches. There had been much rain after harvest, and the conditions were very favourable to nitrification. The nitrates were chiefly near the surface, the distribution in the three depths, each of 9 inches, being, on the average, as 100, 59, and 31. The quantity of nitrate found generally bore a distinct relation to the quantity of the preceding crops. It appears that the nitrogen of permanently unmanured land nitrifies with more difficulty than the nitrogen of land that has yielded large crops, or has received farmyard or other organic manure. *J. J. Willis, Harpenden.*

TOURING IN KUMAON.

(Continued from p. 239.)

KUBCOTE.—Soon after we arrived at the little Dak bungalow of Kubcote, and halted for the day, having done about 14 miles in a very leisurely way. This is the last Dak bungalow I expect to see. I and my little cavalcade left early the next morning for a place called Shama, supposed to be some 15 miles ahead, the road still running beside the Surgu. Some exceedingly pretty pieces of river scenery were noted on the road. After going about 5 miles, unfortunately I mistook Loharkhet for Loharghat, and consequently went about 7 miles out of my way on the road for the Pindari Glacier route; but no great harm was done, for on the way to Loharkhet some very good scenery is to be seen, and one particularly fine view of another river. Immediately after crossing the bridge over the Surgu for the Loharkhet and Pindari Glacier route, we began a winding steep ascent, and as I rode ahead, I could see my men coming up with their loads, and appa-

rently going deliberately down hill and away from me. I mention this to show how steep and winding the road was to produce such an illusion. After 3 miles, we came to a couple of enormous hills, nearly all rock, of great height, and coming down at the base nearly perpendicularly, and so close together that, looked at half-a-mile off, it would appear as though the road went to the hills, and no further; but when we arrived on the spot, it was seen there was just room for a small road and the river to pass between the bases of the two monster piles. Here the river is very rugged, and full of giant boulders weighing many tons apiece, and the vegetation is rank and moist. The last mile to Loharkhet is very tantalising; it goes up a very steep hill, and is very zig-zag, with about one hundred turns in it. At last we reach the top, and halt for a rest. Here I learnt my mistake, and further that five gentlemen had been that way in October last. So, after two hours' rest, I decided to go back to the Surgu bridge, near the other road, and camp there close to the river for the night. This was decidedly a hard day's work; when we arrived at our destination, 21 miles had been covered. About half-past six the tent was up and fires alight, and dinner on the road. I bought an excellent large lamb or half-sized sheep for 1s. 10d., some good honey, and a large kind of Pumpkin. The natives call the latter Kuddus. When nicely cooked they are nearly undistinguishable from Vegetable Marrows. These with soup and sundries made up quite an enjoyable dinner after the fatigues of the day. There is something remarkably satisfactory in camping out like this, and taking your dinner under the brilliant starlit heaven, and the roaring river only fifty yards away.

I rose the next morning at 4.30 A.M., and by 5.30 A.M., we were on the road for Shama, which ought to have been my destination the day before. Here on this part of the road we met miles of sheep and goats. The Bhootias, I learnt, were going home, and taking back a good load of Rice; these men are practically barterers, and do a lot of exchanging; they go down with borax, and come back loaded with Rice, salt, and sundries. On the road beside the river were many more trees loaded with Orchids, in every way similar to those noted further back. I have seen it stated that Orchids will not grow on dead trees. There is an instance along this road to the contrary—a large tree, manifestly it has been dead for at least five years, if not more; not a vestige of bark is left, and not only that, all the branches have fallen off through sheer rot, but on the top of the trunk, about 40 to 50 feet high, there is quite a large Dendrobium, not looking happy, it is true, but unmistakably alive.

Following the course of the river, we halted for breakfast, after doing ten miles. From this point the road begins to ascend very sharply. The Surgu is crossed. After doing some 5 miles, the real tug of war comes in; even my excellent Bhootia pony can go no further, for we have to leave the Government road and take to a very narrow path that in the first instance goes over a hill some 11,000 feet elevation. Our object for the time being is to get on to a small flat some 2 miles up; and indeed it is up—those 2 miles were more like the roof of a house than anything else, and when we did arrive, everyone was tired out. One of the most remarkable things, however, is the way one gets over this kind of thing. In less than an hour my men were putting up the tent, collecting wood and water, and generally settling about business for dinner. The magnificent forests of this neighbourhood are very striking. These forests contain numerous wild animals, notably three kinds of deer, but the gradients are so very steep and dangerous it is almost impossible to get at them. The next day we moved on some few miles further up, still very steep; here we are 13,000 feet elevation, and the air is getting distinctly fine and light. The stupendous character of these mighty hills can be seen for hundreds of miles. How sublimely beautiful, too, is the sunlight on the snow-peaks as it goes down. Two days after this we were at the base of the Namic glacier, nearly 16,000

feet above sea-level; the air is exceedingly fine. I must not omit to mention that the Rhododendrons are totally unlike those of Ramghur and Kumaon in general; here they are very stout shrubs, reaching to the ground much as they do in England, but the branches are very strong and stout, and the outline of many of the plants are most perfect; unfortunately none were in bloom, but my friend Mr. J. G. Bellairs, of the Berenag Tea Company, who has seen them in full bloom, tells me they are a very lovely sight, many of them being as white as snow. I stayed in this place two days, and have nothing but delight to record about it. From a small place called Leti there is an exceedingly narrow, precipitous pathway, going to a large village called Munsharee, about two days distant, but as my men were heavily loaded, and the path was exceedingly steep in places, I did not care to venture that way, and so made up my mind to go the same way back as we came. I was anxious, if possible, to reach a place called Tajum, some 20 miles due east, but the descent was a stupendous one. I knew in advance I had to get down from 16,000 to about 4000 feet, so I rose about 4 A.M., and by 5 A.M. we were on the move, just as the brilliant light of the rising sun could be seen coming up below the horizon, and being a good climber myself both up and down hill, we got down in quick time to the Government road, reaching there about 1 o'clock. I urged my men on to reach the road before breakfast, and we did so, but it was no light work. There are numerous places where the slightest false move would have sent anyone rolling down places more than a mile deep, and with slight chance of stopping before the bottom was reached. Having reached the Government road, we halted three hours, and then pursued our way to Tajum, some 6 miles further on, but still a stiff down gradient the whole way; this we reached about 4.30. By the roadside is plenty of perfectly flat camping-ground, nice and grassy. Fifty yards off is a very powerful river, the Rangunga by name. This river represents the accumulative force of the many small rivulets coming down from the snows in this direction. The sun is positively hot. In front of us was a marvellous hill of great height, magnificently clothed with semi-tropical forest, and withal, nearly perpendicular. The air was so delightfully warm and balmy, that I at once donned a light woollen dressing-suit, and, armed with a towel, I made for the Rangunga, and soon took a plunge into about 20 feet of magnificent water, so transparent that every stone could be seen at the bottom, and the wonder was that I ever got out alive. Very foolishly, I quite forgot my nearness to the snows, and the rate at which the water was travelling, and consequently, it was absolutely icy-cold. It soon got about a Sahib had come, and consequently several natives turned up, and caught quite 50 lb. of splendid fish, which I had no difficulty in buying for 6d., and for 3d. I gave all my men as much as they could eat of excellent fish; here, too, I had the luck to shoot a brace of large pigeons, and so we were very well off for food. The next morning I woke about 4 A.M., more surprised than pleased. I had intended starting about 6 A.M., but everything was perfectly saturated with moisture, even inside of my double Cabul tent, and notwithstanding I burnt a good lamp all night, everything without exception had a fine deposit of dew on it, and all the guns were rusty. So soon as I got my clothes on I went outside, and could not see 1 yard for vapour. As the sun got up the vapour cleared, and my cook found his way to my tent, and said in Hindostani, "Sahib, everything is absolutely wet through, what are we to do?" "Wait till ten o'clock," I said. I found four of my men down with mild fever, and myself that way disposed, and so I made the lot take a good fair dose of quinine. By 10 A.M., the vapour had all gone, and most things were fairly dry, and so we moved off. From this point, the road speedily assumes a full south aspect, and follows the course of the Rangunga River for a long way. Hitherto, the villages have been mostly Hindoo, but here, on this side of the Rangunga, Bhootias, with hundreds of their ponies, are greatly in evidence everywhere.

About a mile from Tajum, is a very high and big range of rocky hills, and abundance of the wild Date Palm. Many of them I judged to be 70 to 100 feet high. The Rangunga is in many places quite as interesting as the Surgu, and if anything more powerful and wider. Here and there in places is to be seen some very rank vegetation, the Gourd order is greatly *en evidence* in places; numerous Cucumber and Melon-like plants were in full fruit, some of the fruit was roundish, others long, those I cut open had exactly the smell and seed of the Cucumber. As we wended our way along this road, we made a sharp descent to a small bridge, this bridge crossed a narrow, but very deep water ravine; all around are enormous forest trees, and although it was November, the place was warm. It is an out-of-the-way sort of place; there are not even native villages anywhere within 5 or 6 miles. In this place I found all sorts of things growing most luxuriantly, huge trees with simply cart-loads of Orchids growing on them, apparently about six to ten kinds, and mostly Dendrobiums and Oncidiums, but none were in bloom; huge quantities of the beautiful *Cœlogyne cristata* were to be seen, and a few yards further on the most beautiful specimen of *Monstera deliciosa* I have ever seen, occupying about 30 feet of a forest tree, and completely covering it with large healthy foliage. Several fine plants of *Aralia Sieboldi* [?] were to be seen, and some climbers like *Dipladenias*, and numerous other cultivated plants. Unfortunately, I did not expect to find such a place as this, and could not take anything away with me, as my men were all loaded, and business for the present precluded me going there in the rains, but at some future time I hope to pay the place a second visit, notwithstanding it is about 80 miles from anywhere.

Some 5 miles from this spot we came into the open country, and camped for the night; here, although three o'clock, it was uncomfortably warm. I found the natives all attention in this place. They said a sahib had not been that way for a long time, and could only imagine I must be a Government official, for it must be borne in mind this road is quite off the track, and at least 30 miles from the nearest European station. No European has business that way except for pleasure or shooting. Here, too, a man brought me about the finest comb of honey I have seen in India, quite white, and weighing several pounds. I wanted the man to state his price, but he would not for a long time, he said whatever I was pleased to give he would take, but at last I got him to state his price, which was eight annas, just about 9d. *F. W. Seers, Ramghur, June 25, 1893.*

(To be continued.)

NOTES ON ECONOMIC PLANTS IN TAHITI.

We gather from a recent report to the Foreign Office that some progress is being made in the cultivation of useful plants in the island of Tahiti. Amongst the most important of these plants Coffee appears to have attracted much attention, and it is considered likely that the natives may take up its cultivation. A beginning on a small scale has been made in the islands of Rurutu and Rimatara, and foreign enterprise also is at work in the island of Tahiti; it will be an important step if the people follow it up. This question has been agitated in Tahiti for the past three years, but with only one exception has anything beyond futile attempts been made to establish plantations. In these latter attempts the old Tahiti system was adopted, which consists of merely clearing away the undergrowth in the bush or forest and putting plants in the untilled soil without trimming, due selection or care.

Coffee-culture on recognised principles has been adopted by an Englishman with promising success. The variety of Coffee known as Tahiti Coffee is a very luxuriant grower, becoming in its natural state a tree often upwards of 20 inches in circumference and fully 20 feet in height, but it is scraggy and overgrown, and on this account usually a poor produce. The plant was first introduced to the Society Islands as early, it is said, as 1823. Subsequently in 1860

the Mocha variety was brought to Tahiti by a Frenchman named Bonnefin, who established a plantation in the district of Faava, which proved a profitable business. For some unknown reason this plantation was afterwards abandoned and has now completely disappeared. The variety is still found, however, growing wild in the islands of Tahiti and Moorea.

Recognising that the uncared-for, uncultivated Coffee tree in Tahiti was capable of producing an excellent berry, though the crops obtained did not in quantity compare at all favourably with results in other countries, where modern methods for growing were adopted, it was decided by the gentleman above referred to, to attempt the culture of Coffee upon recognised principles.

Seven acres of level valley land were carefully cleaned of bush, weeds, roots, and stumps of trees, the soil was well prepared by means of the plough and horse. Young Coffee plants were then selected from those growing wild in the bush, and the roots and branches having been properly trimmed, they were planted out in holes 10 feet apart, the rainy season being selected for the latter operation.

It was soon ascertained that shade was necessary, and Banana, Apple, and Orange trees were at once planted between the rows. In addition, to ensure permanent shade the Candle-nut tree was planted 40 feet apart throughout the plantation, and has proved the most suitable for the purpose, being well branched and moderately open, admitting just sufficient light and circulation of air. The question of proper protection from the sun is an important point in the cultivation of Coffee in Tahiti; dense shade, though giving good growth, has been found to prevent the tree from bearing. In the 7 acres of land 3500 plants were put out; the Tahitian distaste for cultivation was not indulged in, but a vigorous system of care and management was instituted. The result has more than surpassed the most sanguine expectations of the owner.

Two species of insect pests had to be contended with, the mealy-bug and a green scale, both being very injurious to young plants, but not giving serious cause for alarm in the older trees. The plantation at the date of the report, namely, March last, was commencing its third year of cultivation. The trees were most healthy in appearance, and were growing with symmetrical uniformity. The terminal buds are nipped off as the trees reach 6 feet, to prevent them growing beyond that height. By obtaining thus compact and comparatively low bushes, the picking of the crops is facilitated, and the additional shade thus given will in all probability in another two years prevent the growth of weeds, and thus reduce labour to an annual hoeing of the soil around the trees. Next season the owner intends to let the trees bear for a crop. The bushes blossomed well during the past season, but the berries were picked off at once, so as not to retard the growth. The owner fully expects to realise from the crops of the third, fourth, and fifth years sufficient to repay all the outlay he has been put to for the plantation from the beginning. During the sixth, seventh, and eighth years he anticipates that his crops will average 2 kilos (4½ lb.) per tree each season, and after the eighth year, an average of 3 kilos (6½ lb.) yearly. It is stated that the consumption of Coffee in Tahiti is far in excess of the production. It has been sufficiently proved that the lands and climate of Tahiti are well adapted to the production of excellent coffee, and it may now be assumed that a plantation under cultivation will bring back in five years, at the most, what it has cost. The prospects offered to those who may intend to embark on this enterprise in Tahiti are therefore certainly promising. But it should be remembered that, although for small plantations not exceeding 10 acres home or district labour may be depended on, it would require, before undertaking the cultivation of extensive plantations, a very careful study of the labour question, which is fully recognised to be an extremely difficult problem.

ORANGES.

The Orange tree was originally introduced into the Society Islands from Brazil by the navigator Cook, and subsequently by the early missionaries from the Australian colonies. These two varieties, though still giving a slight difference, have by acclimatisation and self-propagation become merged into one variety known in the markets as the Tahiti Orange. The fruit varies from oblong to oval in shape, being rather flattened at the top. It is a medium-sized fruit, very heavy, very juicy, sweet, and highly flavoured, thin-skinned, and the rind of a light lemon-yellow colour. The trees growing on lowlands produce an inferior fruit to those found at higher elevations, and generally supply the early portion of the produce exported on account of their easier accessibility.

The Orange tree in Tahiti is not cultivated, but grows in the wild state, propagation being carried on by raiders, such as rats, &c., scattering the seed, which, owing to the moist warm climate, germinates with certainty and rapidity. With few exceptions, occasionally found on clearings made for dwellings, plantations, and roadways, the Orange tree in Tahiti grows in the bush, straggling, moss-covered, enveloped by tendrils and creepers, and surrounded by weeds, and in this naturally weakened condition is becoming an easy prey to the many species of scale and insect pest now so prevalent, and so carelessly introduced during the last few years. The more vigorous trees found in the open are better able to resist the ravages of this evil, but the consequences in course of time to the so-called Orange groves of Tahiti must be evident to all; still the native, who so greatly depends on the Orange crop as a source of income does nothing whatever to save the trees. He makes no attempt to clear the chaos of jungle surrounding them, or to destroy the pest; he contents himself with living simply on the fruits of nature, so long as they are provided for him.

But this condition of inactivity, if continued, must bring disastrous results. To regain the markets of California, and to retain those of New Zealand, will necessitate attention being given to the cultivation of the Orange tree. As is seen now, the more attractive in appearance, though not superior or even equally good-flavoured fruit produced of late in California has driven the Tahiti Orange out of that market, and it may be that rival Orange-growing islands of the Pacific, where attention is now being given to the culture of the fruit, will before long deprive Tahiti also of the market of New Zealand. It is perfectly possible and practicable to make the culture of the Orange in Tahiti a success, and this important matter should no longer be neglected.

VANILLA.

Owing to the fall in the price of Vanilla last year (1892), some of the native planters neglected their plantations to such an extent that even during the flowering season the fertilisation of the plant was not attended to. As, therefore, there are now fewer bearing plants at a time when the demand has again increased, the more thoughtful owners of plantations reap the benefit, and also gain the advantage of the rise in price that has recently taken place.

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

PEACHES AND NECTARINES.—As fast as the trees are cleared of fruit, do not delay to cut out wood which has borne fruit, to be replaced by the new shoots laid in for the purpose in the course of the summer. This operation, besides doing away with the need of much winter-pruning, affords the inexperienced gardener or amateur an opportunity of determining the proper distance between the shoots, the foliage being now of full size. Enough space should be left to allow of thoroughly ripening the season's wood. At this season every care should be taken to keep the foliage intact, so that there may

be no check to the full development of the buds. Strong wood having lateral growths thereon requires special treatment. If the shoot has lateral growths along the greater portion of its length, the best lateral near the base of the shoot should serve as the new leader, the main shoot being cut back to that one, and in no case should the laterals be laid in with the idea of filling up vacant space with them next season. Experience will soon teach anyone that so doing is bad practice, hindering rather than assisting in the forming of symmetrical and fruitful trees. Directly a crop is finished, the tree should be thoroughly washed with a large syringe or the garden-engine to clear it of red-spider, and this kind of work is facilitated by first pruning the trees in the manner described. Any large Peach or Nectarine trees, or, indeed, any kind of fruit tree growing on the Plum-stock, which is to be transplanted at a later part of the year, may now be successfully root-pruned. For doing this a good wide trench should be taken out, not closer to the stem than 4 feet, and with a sharp knife cutting the roots back. The wounds soon form a callus, and if the transplanting be performed carefully early in the month of November, no loss of crop from the transplanting will ensue.

BUDDED APPLE AND PEAR STOCKS.—All those which were budded in July should now be examined, and if it is found that the ligatures are cutting into the bark, loosen them, or where union has taken place remove the binding materials. This is a matter which should not be neglected, as, after the stock begins to ripen, any marks made by tight binding are not easily got rid of. Buds which may have started to grow should have the shoot of the stock cut down to the bud, thus encouraging the scion to develop and mature a shoot this year.

COBS AND FILBERTS.—Like other fruits, Nuts being much earlier than usual will require to be inspected at short intervals, as they must be plucked before they get too loose in the husks. Those which will have to be kept till the spring of next year may be placed in any large earthen vessel, or large plant-pots will answer the purpose if the holes at the bottom be closed with clay. The Nuts, if gathered when quite dry, may go direct into these pots, and be covered with dry sand to exclude the air somewhat. The floor of a fruit-room is more suitable than the shelves for keeping those intended for using first. I never knew squirrels to be more numerous than this season; and these little animals and the nut-hatch have been so troublesome, that, much against my inclination, I have been obliged to have them shot.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

STOVE AND INTERMEDIATE-HOUSE WINTER-FLOWERING PLANTS.—*Centradenia floribunda*, *Centropogon Lucyanus*, *Eranthemum Andersoni*, *El. pulchellum*, *Kalanchoe carnea*, *Libonia floribunda*, *L. penrhosiana* × *Ruellia macrantha*, *R. macrophylla*, *Pentas carnea*, *P. rosea*, *Rogiera gratiissima*, *R. superba*, *Toxicophlæa spectabilis*, *Crinum*, *Eucharis*, *Pancratium*, *Plumbago coccinea*, *P. rosea*, *Poinsettias*, and winter-flowering *Gesneras* need to be watered carefully, and kept in perfect health. The great heat of the past month caused a large increase of insect pests, and these must be kept under by liberal applications of plant-manure to the roots, daily washings with clean water, and occasional dressings with insecticides and fumigation. The drainage of all plants in pots should be put in good order, or failures are certain to occur.

CARNATIONS.—As soon as possible pot-off layers of *Souvenir de la Malmaison* and other winter-flowering varieties, employing clean well-crooked pots. Pot firmly in rich sandy loam, water, and shade them from bright sunshine for a fortnight after being potted. Take care that green-fly do not infest them. Large, old plants need to be staked with stout Bamboo canes, these lasting for a longer time than ordinary sticks.

CHRYSANTHEMUMS.—These plants must not be allowed to send their roots into the coal-ashes beneath them, and they should be tied securely to horizontal rods or string. Disbud now as soon as possible, being careful not to injure the main flower-stem, which is often done if the operator is in a hurry. Afford abundance of manure-water, but do not syringe the plants daily, as some growers advise, unless troubled with mildew; then use some composition for destroying it.

SOLANUM CAPSICASTRUM COMPACTUM.—Seedling plants which have been growing in the open ground may now be lifted and potted in turfy loam, leaf-mould, and sand, placed in a cold pit or frame, and kept in a moist state; shading the plants till established. Pots of from 5 to 6 inches in diameter are sufficiently large. Low span-houses are the best to grow them in, giving daily attention to watering, syringing, and cleaning.

CINERARIAS intended for specimens should not get pot-bound; the plants raised from late-sowings are very useful, if grown in 6-inch pots, but they must be kept away from direct sunlight, and free from greenfly and mildew.

MIGNONETTE.—Thin out pots of seedlings, and make another sowing for late-flowering; it is best kept outside under the shade of a north wall as long as possible, or till there is danger from frost, setting the pots on some worm-proof substance, and sprinkling soot round about the pots to deter the slugs. Manure-water, or a pinch of nitrate of soda at times, is beneficial; and if troubled with black aphid, sprinkle the foliage with Quassia-water.

THE KITCHEN GARDEN.

By H. O. PRINSEP, Gardener, Buxted Park, Uckfield.

ONIONS.—In southern shires, the main Onion crop will be ready for lifting. As only the firm well-ripened bulbs keep well, those only should be lifted, leaving immature ones till ripe. When Onions are pulled, they should be placed on hurdles, or taken to an open shed, and spread out till dry. Failing these means of drying the bulbs, place them on a hard path. All thick-necked and unsound bulbs should be put by themselves for present use, not stored with the bulk of the crop.

CABBAGES.—Plants from early sowings will be large enough for transplanting, and the sooner they are put out the more freely will they grow. I prefer to grow a Cabbage crop after Onions, and this land if not heavily manured for the latter, should be well dressed, and deeply dug. There are various ways of planting, and each has its advantages and disadvantages, so that the cultivator must be guided by circumstances. When the ground is not required for any other crop in summer, it is well to plant one row of a large-growing and a dwarf variety alternately, the early and dwarf ones being cut, and the stumps pulled up before the larger Cabbages are ready for use; thus the latter have more space in which to grow. If planted in this manner, the rows should be about 15 inches apart, which will allow the large kinds 2 feet 6 inches to develop in. I have a preference for keeping each variety separate, planting the small sorts about 1 foot apart, and the larger 2 feet. The early ones are pulled up when fit for use, and the others are left, cutting the heads to furnish a supply of Sprouts. A slight dressing of sulphate of ammonia should be spread on the land before planting the Cabbages.

LETTUCE.—The last sowing of Cos varieties to stand the winter may now be made; Hick's Hardy White and the Brown-seeded Bath Cos are the best for this purpose. The situation should be open, but warm, or the plants will suffer during the winter. The land after the partial thinning of the plants has taken place, must be kept stirred with the hoe, and care must be taken that the plants do not get crowded. A well-drained border with a slight slope to the south, and the land made firm by regular treading, suits this crop.

SPINACH.—In some localities seed may still be sown, growth sometimes being made to a late part of the autumn; and when this is the case the early lots get crowded unless the leaves are diligently gathered, which is seldom the case where other vegetables are plentiful.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

SHADING AND RESTING PLANTS.—The shading on most of the houses in which Orchids are cultivated, will need to be used with care, especially those in which are the Dendrobiums, which stand in need of all possible light and sun, to mature the pseudobulbs, the blossoms that set on soft immature pseudobulbs being generally very small; the blinds therefore should be down for a few hours only, the brightest part of the day. Air should be afforded at the same time, and the hot-water pipes kept warm. Any plants which may have finished their growths a

few weeks ago, may be removed into an airy house, but not quite dried off for some time yet, the full development of the flower-buds being not yet finished. When the time comes for removing them from this house, afford a good watering once a week for a few weeks after removal. The species *D. Wardianum*, *D. crassinode*, *D. heterocarpum*, *D. nobile*, *D. densiflorum*, *D. Farmeri*, and *D. thysiflorum*, which were flowered early in the year, are those which may be rested. Plants of *D. nobile* may now be dried off, so that the leaves fall, as the longer these are retained the fewer the blooms. Dendrobiums in full growth will need a plentiful supply of water at the roots, and also overhead, when the weather is sunny. Examine carefully for thrips and red-spider, which, if allowed to gain a footing on the leaves, cause them to fall prematurely.

CATTLEYA MENDELI and **C. MOSSIAE**, if growing freely, should be well-supplied with water. *C. Trianaei*, having made full growth, should be watered with caution, or a second growth will start, which will not flower at the usual time. Afford air abundantly to the house containing the above—at least, in as great a degree as the weather permits. Cattleya flowers are few at this season, unless there is good stock of *C. Dowiana aurea*, *C. maxima*, *C. Loddigesii*, *C. Harrisoniana*, *C. H. violacea*, *Lælia elegans*, and varieties of *L. e. Turneri*, *L. e. prasiata*. When the above species and varieties go out of bloom, remove them to a cool airy part of the house, and afford less water. These all do best when hung up close to the roof.

MASDEVALLIA HARRYANA may be looked over at this season, and those plants which are not healthy shaken out and re-potted; but as a rule the greater portion of the stock of these plants is left untouched until February. At the present time it is good practice to dip Masdevallias in a weak solution of Fir-tree oil to rid them of thrips, and prevent "spot." As a preventive of the last-named malady, our Masdevallias are kept at about 55° during the winter.

CYPRIPEDIUMS.—These plants should be examined, and those which were not potted at an early part of the year shifted into larger pots if they are found to need it. The garden hybrids, *Ainsworthii*, *C. albo-purpureum*, *C. cardinale*, *C. grande*, and the finer form *C. g. atratum*, *C. Dominianum*, *C. Schrodæ*, and *C. Sedenii candidulum*, are plants of robust growth, and will take a good shift. For these use a good kind of peat, turfy loam, sphagnum moss, with a fair proportion of coarse silver-sand, and finely-broken crocks. The sphagnum should be kept alive, the roots delighting to run amongst it. Manure-water, much diluted with water, may now be afforded with safety to plants which have not been re-potted.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

PINERY.—Plants which have flowered, and those with fruits in various stages of development, should be afforded top-dressings of special manure, incorporated with turfy loam and a little soot. In wide structures, where the plants cannot easily be reached, and their removal is necessary to dress them, it may be advisable to depend rather on applications of liquid manure, as when Pines are rocked about and perhaps twisted at the collars, there is great risk of injury being done. Good Peruvian guano and Clay's Fertiliser are very suitable manures when mixed with rain-water, but they need great caution in the using. There need not be much decrease of temperature for fruiting plants, except when the weather is cool; 90° at shutting-up time and for some hours afterwards, with sun-heat, is a suitable warmth, but it may be allowed to fall to 70° in the morning—sun-heat should be stored and fire-heat avoided as far as practicable. Fruits which are colouring should be kept dry, and have abundance of air; but such necessitates the keeping of the plants arranged in groups according to their various stages of growth. Fruits approaching ripeness may be kept back for some weeks, if they would be more valuable later, by placing the plants in a cool airy room or a vinery at rest. A slight decrease of water at the roots will be necessary for young stock, and an average temperature of about 10° less than fruiting plants; where heat depends on manure-linings (and such is the case still in many private places, as well as in market establishments), a quantity of fermenting material should be in readiness to cope with a probable lowering of the outside warmth. Young plants are much improved when water mixed with guano

is placed in pans over the pipes. Soot dusted over the beds at shutting-up time supplies ammonia in the form of vapour, and darkens the colour of the foliage, besides destroying fungus (dowers-of-tan), which is so often present on beds of tan.

POT VINES.—The resting of pot Vines and others to supply early fruit (say in March and April) is now an important matter, and the soil should not be allowed to become wet, but neither should it get in a parched condition. The pots may be laid on their sides, so that rain does not enter. Those which are to afford succession crops should have all lateral growths removed, a free circulation of air in the house afforded, and the foliage kept healthy as late as possible. See that the drainage of the pots is clear, and discontinue the use of liquid manure.

STRAWBERRIES.—Plants now being prepared for forcing early in pots will need much attention, and those which have filled their pots with roots may be afforded liquid manure, which greatly strengthens the crowns. Too much manure may not be afforded, as it might lead to souring of the soil. Crowding the plants together at this season should not be allowed; in fact, it is a safe rule to keep the plants so far apart that the foliage of neighbouring plants scarcely touches. Other matters are the removal of runners, and prevention of roots getting out of the pots. If heavy rains often occur, the pots may be placed on their sides for a day or two; but the rain is less likely to do harm than great dryness at the roots.

THE FLOWER GARDEN.

By T. H. CRASP.

DOUBLE-FLOWERED VIOLETS.—If these plants have had attention in the matter of watering, the soil frequently stirred, and a mulch afforded during the drought, they should now be in a promising condition, the recent showery weather having caused the plants to grow apace, and they need but a few weeks fine weather to cause good crown development, the precursor of abundant bloom during the winter. Beyond cutting off the runners when seen, and keeping the soil free from weeds, nothing more will be required until preparations are made in the last week in September for planting them in cold frames. This operation should not be deferred beyond that time, or re-establishment cannot take place before the winter is upon us. It should be remembered that it is not growth of leaves that is required after the plants are in their flowering-quarters, but active root action.

VIOLAS.—If a stock of these plants for spring flowering has not as yet been obtained from cuttings, no time should now be lost in making them. The cuttings should be stuck into sandy soil under a cold frame for protection, keeping the lights close for a time. When growth commences more air must be afforded, and the points of the cuttings pinched off, for the purpose of giving a bushy form to the little plants. When side-shoots form, the plants are well rooted, and may be transplanted into a light compost in another frame; here they will strengthen, and by the early part of October good plants will have been obtained, furnished with from three to six growths each.

LAWNS, ETC.—This season the sweeping of lawns and walks will need constant attention, the leaves having fallen prematurely everywhere. Attend well to the rolling of gravel-walks, and the destruction of weeds on them by hand-picking, or otherwise. Some of the early-flowering plants will have gone out of bloom, leaving gaps in borders and beds, which are not easy to fill, unless good-sized plants in pots are kept in store. In mixed beds of flowering plants, the late-flowering varieties of Phlox, Asters, &c., may be tied less compactly, and thus made to occupy a larger space; and in that way gaps may sometimes be filled. Petunias and other plants which grow grossly should be pruned slightly, to keep them within bounds.

TRANSPLANTING.—When it is intended to remove large evergreen shrubs, a trench should be dug round each as deep as the deepest roots.

PROPAGATION OF PLANTS.—Actively proceed with the propagation of bedding plants for next year's supply, and of the following hardy border plants:—*Iberis*, *Helianthemum*, *Lithospermum*, *Dianthus*, *Phloxes*, both tall and dwarf varieties, &c. Take young side-growths, and insert these either in pots of sandy soil placed in a shady frame, or firmly dibble them out under bell-glasses in a shady spot.

EDITORIAL NOTICES.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited; but the Editor cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

FRIDAY, SEPT. 8.—Dundee Horticultural Society.

SHOWS.

TUESDAY, SEPT. 5 { Brighton and Sussex New Horticultural (two days).

National Chrysanthemum Society's Show of Dahlias and Gladioli at Royal Aquarium, Westminster (three days).

WEDNESDAY, SEPT. 6 { York Florists, Fifth Show. Derbyshire Horticultural and Agricultural (two days).

THURSDAY, SEPT. 7 { Paisley Horticultural (two days). Newtownards (co. Down) Horticultural.

SALES.

MONDAY, SEPT. 4 { Dutch Bulbs, at Protheroe & Morris' Rooms, at 12.

TUESDAY, SEPT. 5 { Dutch Bulbs, at Protheroe & Morris' Rooms, at 12.

WEDNESDAY, SEPT. 6 { Dutch Bulbs, at Protheroe & Morris' Rooms, at 12.

THURSDAY, SEPT. 7 { Dutch Bulbs, at Protheroe & Morris' Rooms, at 12.

FRIDAY, SEPT. 8 { Dutch Bulbs, at Protheroe & Morris' Rooms, at 12. Orchids, at Protheroe & Morris' Rooms, at 12.30.

SATURDAY, SEPT. 9 { Dutch Bulbs, at Protheroe & Morris' Rooms, at 12.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—69° 3.

The Islington Show.

ALTHOUGH the big show at the Agricultural Hall left much to be desired in grouping, in interest,

and in variety, as compared with many of the provincial and Scotch shows, and especially with the principal foreign exhibitions, yet to those who know the conditions and circumstances of the case, the last effort of the Royal Horticultural Society must be received with satisfaction. In the first place, the evidence of vitality, energy, and enterprise in undertaking so large a matter in a new district of this vast metropolis is decidedly a subject for congratulation. Still more encouraging was it to see greater variation introduced, and a genuine attempt to break away from the formality and monotony of arrangement, to do away with the bazaar-like and obtrusively commercial character of such exhibitions, and to introduce more tasteful grouping, and more instructive displays. Much remains to be done, but it is something to have made such an attempt. That it is possible to serve the interests of the commercial exhibitors, without whose aid no large show could be held, and at the same time so to arrange the material as to produce beautiful pictorial effect, and convey instruction to the public, is shown by the exhibitions in Paris, Berlin, and other continental cities, and may be illustrated to some extent by a view of a portion of the great quinquennial exhibition at Ghent in April last, which we give in the present number as a Supplementary Illustration. It was good policy to illustrate the importance of horticulture to the people by an exhibition in a densely-populated quarter of London, far removed from the "West End," where it may be presumed the lessons which horticulture teaches are less needed, and from the City, where it may also be presumed

that the importance of gardening industry, from a commercial and economic point of view, can be properly appreciated.

As to the building, it was, on the whole, well adapted for its purpose. It was easily accessible; it was spacious and commodious. The light was not, at all times, favourable, but that defect could hardly be remedied. The trumpery flags, the extremely dirty "velarium," excuse the word! the obtrusive advertisements, all these are matters also over which the Royal Horticultural Society had no control. The vast building was well filled, thus negating the idea that material enough could not be got together to occupy the space; the groups were, however, dwarfed by the great height of the building, and no attempt was made to overcome this by raising the Ferns and Palms, as might readily have been done. Some of the smaller groups were well-managed, especially the group of Roses arranged by Messrs. PAUL & SON, and the collection of Dahlias arranged for effect by Messrs. KEYNES, WILLIAMS & Co., and by Messrs. CHEAL. These were so excellent, that we trust they will serve as object-lessons, and effect the permanent rout of those hideously ugly rows and stands in which it is thought correct to show Roses, Dahlias, Chrysanthemums, Gladioli, Carnations, and florists' flowers generally.

The beauty of the groups we have alluded to was a subject of general admiration, and they were so arranged that it was quite possible to judge and to compare the merits of individual flowers, and thus to obviate the objections often raised on this score. Herbaceous flowers were better shown than usual; the specimens were better, less crowded, and arranged with a regard to harmony, or to the contrast of colour, in a way by no means general. A group of hardy Bamboos, shown by Messrs. PAUL, was a delightful novelty, very graceful and effective, and relieved at the base by the artful introduction of colour in the shape of brilliant Cannas and Tritomas. Groups of Lilies and Hydrangeas, though more common, were very pretty and effective.

For educational purposes, nothing could be better in their way than the large series of trained fruit trees in pots shown by Messrs. RIVERS, BUNYARD, CHEAL, and W. PAUL. They must, we should think, have opened up a new world to some of the Islington folk, some of whom (we met with such an instance) had never seen an Apple growing on a tree.

Fruit was largely shown: the Apples were excellent; Grapes have often been seen better; but for details on these and other points we refer to the report in another column. We may, however, allude to the exhibit of Mr. TROTTER, of fruits dried in a similar way to those which the trials at Chiswick have rendered familiar.

Among vegetables there was a very interesting exhibit by Dr. EMERSON, showing various subjects well suited to be more generally grown in this country, such as the Turnip-rooted Parsley, and even the Sweet Potato (Batatas). Such is the apathy of consumers—and so strong the prejudice of gardeners against innovations, that Dr. EMERSON has a hard task before him. He has our hearty sympathies in the matter.

"New Plants" were conspicuous by their absence; almost the only plant coming under this category, that we observed, was the very beautiful Agave, raised by Mr. KELLOCK, and called "Leopold II." Mr. KELLOCK exhibited a similar specimen at Ghent, and presented it to H.M. the King of the BELGIANS. Its dark linear lanceolate leaves, with their fringe of long stiff white hairs at the margins, are very effective.

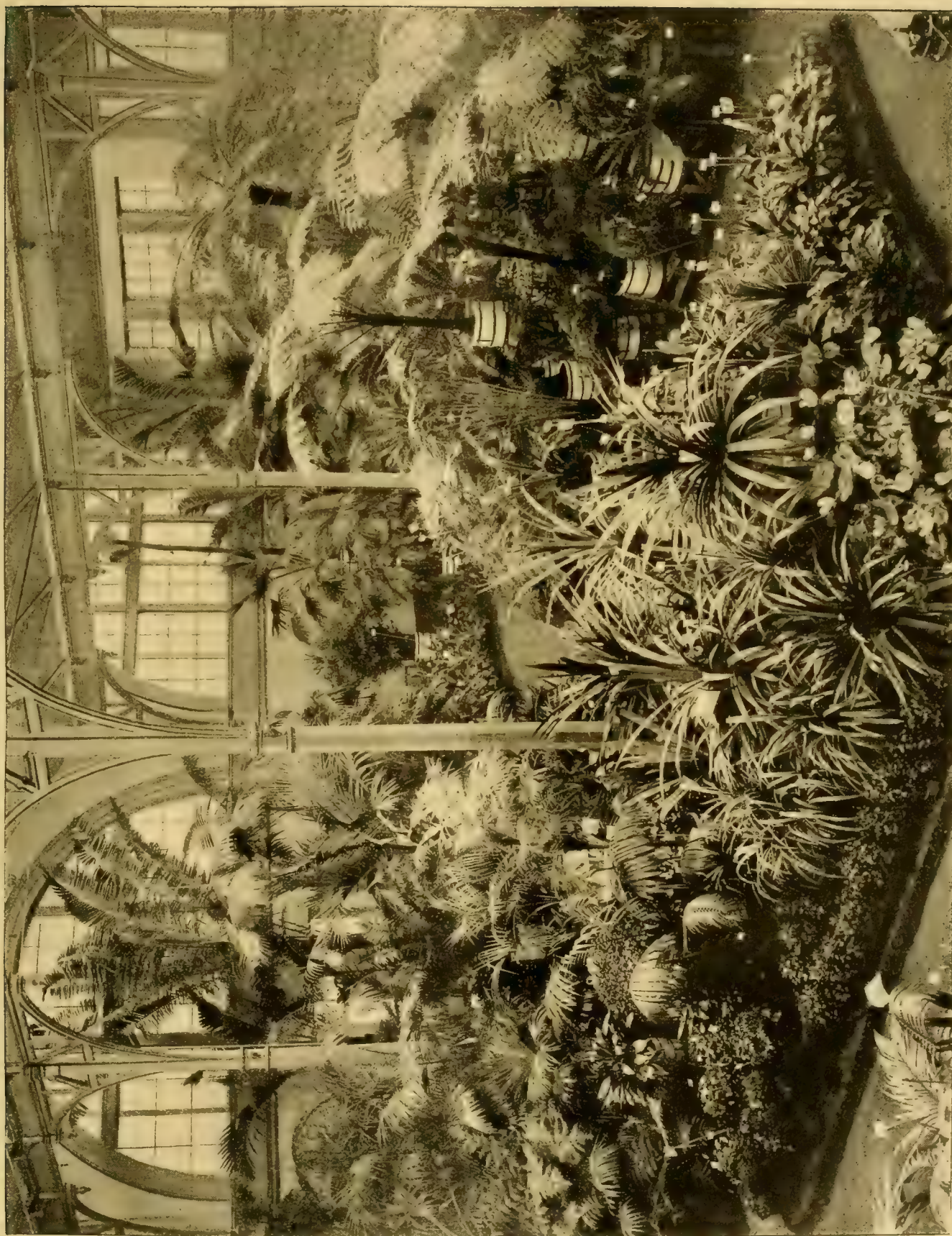
We observed no foreign exhibits on this occasion, but we were especially glad to see that from far-off Aberdeen came Roses, which were almost as fresh as those from the home counties. Messrs. COCKER, of Aberdeen, and Messrs. DOBBIE, of Rothesay, who showed Pansies, Marigolds, &c., allowed the southerners to see what could be done north of the Tweed.

There will be the usual grumbles on points of detail, no doubt, but on the whole the Society may be heartily congratulated on this fresh evidence of energy and judgment on the part of its officials. Mr. BARRON'S task, in particular, was onerous and laborious beyond what is customary, but he was by no means the less successful. The attendance of the public was not so large as had been hoped.

"JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—The first part of the sixteenth volume, edited by Rev. W. WILES and Mr. J. WEATHERS, has just been published. It contains the second report of Dr. F. W. OLIVER on "The Effects of Urban Fog on Plants," a fine piece of research, doing credit to the Society and honour to its author. Professor HENSLOW'S experiments on growing plants under glasses of different colours prove what all gardeners had found out for themselves, that the pure light of the sun is the best of all light, and culture in the open ground far preferable to that under glass. The injurious effect of glass is due to the excess of heat stimulating respiration and reducing assimilation. Mr. SELFE LEONARD'S rambles with a trowel is an attractive and suggestive bit of writing. Mr. CHESHIRE'S experiments, based in principle on the Rothamsted experience, are defective, inasmuch as they give no idea of the quantities to be used. For American blight, Mr. PILLIN recommends creolin, a product from coal-tar, and which may be bought in the form of JEVES' concentrated fluid; this is used in early spring, in the proportions of half-a-pint of creolin to a gallon of water. This fluid is carefully painted in the cracks of the bark with a brush two or three times, at intervals of a week or ten days; or 2 oz. of creolin, 20 grains of corrosive sublimate, and a pint of water may be mixed, allowed to stand for a day, and then used in the same way, remembering always that the mixture is highly poisonous. Dr. BONAVIA shows the existence of the Citron in Egypt between three and four thousand years ago. A new feature in the *Journal* consists of reviews of books, and the remainder of the part consists of reports of the Society's meetings.

HORTICULTURE IN THE UNITED STATES.—President SMITH, in his opening address to the Society of American Florists at St. Louis, gave the following statistics, showing how important an industry the Society represents:—

"The census report for 1891 shows that there are 4659 floral establishments in the United States, employing 16,847 men and 1958 women. There are 1323 floral societies, florist clubs and horticultural societies in the various States and territories of the Union. Their fuel costs over 1,000,000 dols.; their advertising about the same—that is, independent of catalogues; they pay for postage 767,438.21 dols.; for freight and expressage, 1,088,612.41 dols. The sales of cut flowers, hardy shrubs, Roses, and other miscellaneous ornamental plants amount to 26,211,805.77 dols. It is safe to say there is an increase of 20 per cent. on the above figures since then. We made application to the State and Treasury Departments at Washington for correct information as to imports, and ascertained that we send to the Netherlands, Germany, England, France, Belgium, and Bermuda, over 1,750,373 dols. for bulbs, plants, and seeds. It becomes a question for every patriotic American to consider how much of this sum can we retain on this side of the Atlantic. We seek no special protection. Intellect and industry with cheap land as against cheap labour should be our agents. This Society, socially, and by the aid of printer's ink, diffusing proper information as to what is wanted and how to grow it, will soon secure the desired result. California has already taken up the subject of producing such seeds, bulbs, and plants as her climate is suitable for. On Long Island, in the State of New York, we saw, two weeks ago, on one estate alone, 90 acres of fine, healthy Gladioli—millions of bulbs. To the Long Island florists, we are told, is due the credit that the Gladioli has been changed from an import to an export item of trade. Ten years ago they were



INTERIOR OF THE GREAT HALL, GHENT EXHIBITION.

all imported. Their price has been reduced to 10 dols. per 1000. I am told by experts that many millions of tuberos bulbs are grown in North Carolina and several other Southern states for domestic and export business. A few years ago they were all imported—their price 10 dols. per 1000. I would like to call the attention of growers to the millions of Roman hyacinths used, and ask, "Can't they be grown somewhere on this side of the Atlantic?"

THE LATE MR. W. D. LLEWELYN.—The deep sympathy of his numerous friends among the horticultural community will be extended to Sir JOHN LLEWELYN in his most sad bereavement. Mr. W. D. LLEWELYN met with his death when out shooting.

A DICTIONARY OF BIRDS.—This is a publication issued by Professor NEWTON of Cambridge, assisted by Messrs. GADOW, LYDEKKER, ROY, and SCHUFELDT (ADAM and CHARLES BLACK). The first part only is before us, others are promised with little delay. The work is based upon articles contributed to the *Encyclopædia Britannica*. Dr. GADOW is especially responsible for the anatomical portions. The alphabetical arrangement is adopted in preference to the systematic, because the Editor entertains great doubts whether the newly proposed systems are any better; indeed, he says they are a good deal worse than any they are intended to supersede. That is a point upon which our readers will not expect us to give an opinion. What we may fitly do is to commend the work to their notice, and to assure those interested in birds that they will derive pleasure, interest, and instruction from every page. Perhaps, before the work is finished, it may be possible to give a brief synopsis indicating the principal articles on anatomy, classification, &c., so that they may be read if desired as a continuous series.

GLOXINIA.—In an ordinary Gloxinia the deepest colour is on the inner surface of the corolla tube, the outer surface being of a relatively pale colour. M. ED. PYNAERT sends us a flower in which from the outer part of the tube project petaloid outgrowths, pale on the surface next to the tube, dark maroon on the free surface. We may represent the arrangement thus:—

The thick black lines indicate the position of the deeply coloured portions, and the thinner ones that of the paler portions. The condition is not uncommon, and was described many years ago by one of M. PYNAERT's compatriots, a former Professor in the University of Ghent, M. CHARLES MORREN, *Bull. Acad. Roy. de Belgique*, tom. xvi., n. 12. See also EDWARD MORREN, *Chorise du Gloxinia*, *Bull. Acad. Roy. de Belgique*, 2ser. tom. xix., n. 2; *Gard. Chron.*, 1865, p. 865; *Masters' Vegetable Teratology*, German edition (1886), figs. 238, 239, p. 510. The condition is carried to such an extent in some cases that there is a complete second corolla outside the first. In the corona of *Narcissus* a similar outgrowth has been observed. In these and similar cases of enation it is usual for the arrangement of the tissues to be reversed.

THE HORTICULTURAL COLLEGE AND PRODUCE COMPANY, LD.—At a meeting of the Experimental Committee of the Kent County Council, held at the Horticultural College, Swanley, on August 24, local taxation of agricultural land, and the effect of the drought on the crops, were discussed. The next meeting is fixed for Thursday, September 7, when the trial plots of the different manures on Beans, and of different varieties of Strawberries, are to be visited; and Professor CHESHIRE is to give an account of some cultural methods he has recently observed in France.

VERSUS WORMS.—Mr. PORTER sends us samples of wire-netting to be placed below the crocks in potting, so as to prevent the ingress of worms. Such contrivances are serviceable against unwelcome visitors of other kinds.

SHAM EDELWEISS.—To meet the desire of the tourist "doing" Switzerland, who would fain take a piece of Edelweiss home with him, some ingenious

person has devised an excellent imitation of the plant. This substitute satisfies the average globe-trotter, and saves the trouble of collecting or cultivating the real thing. The artificial blossom is made, according to the August number of *Nature Notes*, of the "white woollen felted material of military coats, worn chiefly by Austrian soldiers; this, when cut into suitable strips, very much resembles the characteristic upper leaves of the plant, more especially, of course, when the colour is somewhat mellowed by exposure The strips of cloth are carefully cut out, and skilfully grafted on a foundation of any weed that comes handy which may have a superficial resemblance to the Edelweiss in habit. The specimens are then pressed and dried, and the pious fraud is complete."

THE MUSK ROSE.—*Rosa moschata* is a native of N. Africa and Spain, and perhaps of Nepaul. HAKLUTT says (1582—1600), "The turkey-cocks and hennes were brought about fifty yeres past, the Artichowe in time of King HENRY VIII., and of later times was procured out of Italy the Muske Rose plant, the Plumme, called the Perdigwena, and two kindes more by the Lord CROMWELL after his travel." Cited in ELLACOMBE'S *Plant-lore and Garden craft of Shakespeare*. BACON mentions the Musk Rose also. GERAARD, 1597, describes and figures the Muske Rose:—"The flowers growe on the tops of the branches of a white colour, and pleasant sweete smell, like that of Muske, whereof it tooke his name." The double form is figured also in *Passæus Hortus Floridus Autumnalis*, t. 2 (1614).

THESSALY.—"The rugged north-west of Thessaly is as yet practically unknown, and the explorations of the geologist HILBER and the botanist VON HALLACI, who have been sent there by the Vienna Academy of Science, will be fruitful in interest, apart from the specific objects of pursuit. A botanist is also going to Albania to study the distribution of the mountain flora. The vegetation of the Balkan Peninsula is of a peculiar character, and well worth especial study."

THE LIVER-MOSSES.—Until recently the Hepaticæ or Liver-mosses have been much neglected; yet anyone who takes them up as a hobby will be rewarded by these interesting plants, especially if they study them scientifically, for they offer a field for new discoveries, which is not only rich but attractive. Dr. BRAITHWAITE recently spoke of them as deserving of more attention than they get. They stand rather lower in the scale than the Sphagna or Peat-mosses, as is evident from the number of species never passing beyond the shallow stage of development, e.g., *Marchantia*, *Riccia*, *Lunularia*, *Grimaldia*, &c.; all these differ widely from each other in the form of fruit.

SYNSPERMY IN GINKGO BILOBA.—Professor PIROTTA, of Rome, reports the occurrence of the union of the seed-coats of this plant, leaving the kernels and embryos independent.

THE CONVENTION OF THE SOCIETY OF AMERICAN FLORISTS.—The ninth annual meeting of the Society was opened at St. Louis, Missouri, on Wednesday, August 9, when Mr. W. R. SMITH opened the proceedings with an address setting forth the importance of horticulture from an æsthetic point of view, detailing the enormous advance made in America, and urging the stay-at-homes to abandon their practice, and take part in these gatherings of the fraternity. The Society is mainly composed of traders, of whom no fewer than 829 are members. Besides the presidential address, papers were read by Mr. BERTELMANN, on "Horticultural Exhibitions;" by Mr. A. F. TESSON, on "Rose Growing;" by Mr. J. GURNEX, on "Old and Neglected Plants;" and by Mr. C. H. ALLEN, on "Carnations."

PERIODICITY IN TREE GROWTH.—From a number of careful observations it has recently been found that the increase in the thickness of the branches of trees is, like their length, subject to a certain periodicity. Herr L. JOST states that two,

maxima and minima, are exhibited as regards growth in thickness every season. No particular period, however, can be stated generally as that at which either the maximum or the minimum occurs, for in the different examples which were placed under observation, these occurred at various periods of the year. In the paper in which his observations are described, and which may be consulted in the *Berichte Deutsch. Bot. Gesellschaft*, xx., p. 587, Herr JOST shows that no connection can be established between the period of this growth in thickness and the period of the development of the leaves in each particular species, although the period of the commencement of the formation of the wood coincides with that of the unfolding of the leaves.

THE EFFECT OF THE ELECTRIC LIGHT ON VEGETATION.—A number of herbaceous plants have been observed by Mons. G. AMNIER whilst under the influence of the electric light, the illumination being kept up continuously for some months. Under glass, he found that this artificial light greatly accelerated growth and produced an intense green. If the light is strong and prolonged, the new organs formed in the plant present remarkable modification of structure in their various tissues, but are always rich in chlorophyll. The direct electric light is, on account of its ultra-violet rays, injurious to the normal development of tissue, even when the lamps are at a distance of 6 to 9 feet. When Pines, Beeches, Oaks, and Birch trees are exposed to a strong electric illumination without interruption by day and night, they appear to become exhausted by the continuous respiration thus induced. Further details of this interesting investigation may be found in the *Comptes Rendus*, cxv., pp. 447, 475.

THE QUINCE IN CHINA.—Professor TERRIEN DE LACOUPERIE has a paper in the June number of the *Babylonian and Oriental Record*, wherein he states that the first knowledge of the Quince dates from about 700 B.C., when it was introduced from Media to Greece. Soon after, there is evidence of its existence in China. The Greeks attributed various virtues to it, and some authors have considered that the Apple disputed by HERA, APHRODITE, and ATHENE, was a Quince. By the Hindus and Mahometans all over the East, the Quince is still highly valued, and in China fruits of a large size are brought to Peking from Shantung. The first appearance of the Quince in Chinese literature is, according to the Professor, in an ode dated about 660 B.C., where it is mentioned as forming a complimentary present. Here it is called Mah-Kua, or Tree Gourd, a name also given to the Papaw, but which was introduced many centuries after. The history of the Quince is traced for twelve centuries, and its importation by the South Sea traders to the emporia of the south coast of Shantung. It must not, however, be forgotten that Quince-like fruits are native to China. Thus, *Pyrus japonica* in one or other of its forms is found, according to HEMSLEY, both in the north and south-west of China; whilst under the name *Pyrus cathayensis*, HEMSLEY, a species is noted, called the "Chinese Quince" by Dr. HENRY, and found by that botanist in Central China—this is the *Cydonia chinensis* of THOUIN, and is figured in *Bot. Reg.*, t. 905. LOUREIRO is said to have confounded this with the common Quince. The *Pyrus sinensis* of Lindley (*Bot. Reg.*, t. 1248) is a different plant.

INFLUENCE OF SOLAR RADIATION ON PLANTS.—In the *Comptes Rendus* for August 7, M. LANDEL details some experiments made in the laboratory of vegetable biology at Fontainebleau under the direction of M. G. BONNIER, on the influence of solar radiation on plants. The author mentions several plants, duplicate specimens of which were grown in the sun and in the shade respectively, and he minutely chronicles the differences in growth, colouring, &c., displayed by the plants under these two systems of cultivation. The general conclusions arrived at are as follows: "Variations in the intensity of solar radiation seem always to act in the same way, so far as regards the number of flowers, and the proportion of red pigment which colours the

various parts of the plants. The variations are of very unequal extent, according to the species. With some, the red pigment is well developed in the shade, while others, under the same conditions, remain entirely green. The inflorescence of certain species does not seem to undergo any appreciable modification in the shade; in others the number of the flowers is less—among certain Composites, in fact, this decrease affects not only the number of the flowers, but also that of the flower-heads. This diminution in the number of flowers on plants growing in the shade induces a decrease in the reproductive power, but this result can also be attained in a more direct way, by reducing the number of seeds in the fruits, or by the abortion of the fruits themselves."

FRUIT-GROWERS' ASSOCIATION OF ONTARIO.—We have before us the twenty-fourth annual Report, containing an account of the proceedings at the annual meeting. Regarding Apples, the dictum enforced by several speakers was, "first and last, feed the Apple tree." Spraying, too, is taken up with much more energy than it is here, and the dictum in this case is "spray early." Attached to the Report is a similar document reporting the progress of the Entomological Society of Ontario.

DEUTSCHE DENDROLOGIE.—Under this title Dr. EMIL KOEHNKE has published a valuable descriptive catalogue, with illustrations, of the trees and shrubs which are found to be hardy in Germany. So far as we have been able to test it, the book has been carefully elaborated, and the synonymy adjusted. The book is written for Germans, but as it would be very serviceable to most of the nations of Europe, and of the northern United States—a far larger area, and with a far more numerous population than that of the Fatherland, it is to be regretted that the Latin language was not employed, at least for the diagnoses. As it is, an English translation is most desirable.

PROTECTION.—One of our American contemporaries, in a spirit of patriotism, announces that, in order to protect home trade, it will accept no advertisements from foreign florists, nurserymen, or seedsmen! Circumstances are doubtless widely different in the States; but here, if we wanted to damage, rather than benefit, horticulture, we should shut out all foreign articles, from Dutch bulbs to Colombian *Odontoglossums*.

TCHICHATSHEFFIA ISATIDEA.—In a recent number of the *Garden*, Mr. MAX LEICHTLIN describes and figures a very pretty little hardy Armenian Crucifer, well suited to the rockery; it bears close tufts of bright rosy-lilac fragrant flowers. The worst thing about it is its name. We once asked the distinguished traveller how his name should be pronounced, and received the following indications as nearly as we can write them—Tshi-hats-off, with a strong accent on the second syllable.

HOME CORRESPONDENCE.

ROYAL SCOTTISH ARBORICULTURAL SOCIETY'S EXCURSION.—Seeing in your issue of August 19 an account of the Royal Scottish Arboricultural Society's excursion to Windsor, it occurred to me that much good might result by the practical foresters who took part in it expressing their views in the *Gardeners' Chronicle* regarding the arboriculture of the districts visited, the programme of proceedings being so large that members had no time to engage in friendly discussion on the interesting features, where possibly a difference of opinion might exist, the excursion thus losing much of its usefulness. As an individual member, I must say I was rather disappointed with the woods at Windsor, where one naturally expects to see the best of management. True, Nature has been lavish in her gifts, and for beautiful scenery few places can equal Windsor; and though the sylvan aspect might please arborists, still I imagine arboriculturists might reasonably expect something better. As an ancient forest, it is right that the ancient appearance should be pre-

served by planting mainly Oaks, Beeches, &c., still I think a greater number of other varieties might be judiciously introduced, judging by the success of the few specimens of *Abies nobilis*, *Cupressus*, &c., to be seen. The parks are mainly furnished with very old trees, and I consider there is a necessity of inserting something for a succession crop, which might be done without in any way interfering with the amenity of the scene. As to the general management of the woods we got little enlightenment—there was no system of thinning pointed out, and we saw no sample of pruning. One little item I would mention, that is, the cruel treatment of the tree known as Queen Adelaide's Beech. One would almost imagine the management had a grudge against this queen's memory, and wished to destroy the tree by fixing those two large iron plates on the trunk, the sight of which is enough to make one shudder. Surely some other system of marking trees might be adopted, such as the pillar at the Maiden Oaks at Cranbourne Chase, for example. In your report the largest tree at Windsor is given as being 35 feet in circumference, while William the Conqueror's Oak is stated to be 36 feet 9 inches. This seems rather confusing, but the fact is, the latter tree was measured at 5 feet up, where it was much riven, and has large abnormal growths. The trunk proper may be seen at from 2 to 3 feet up, where 26 feet would be nearer the circumference. This only proves the fallacy of measuring at a fixed height, especially old gnarled pollards. *A. Pitcaithley, Forester, Sudbourne Hall, Wickham Market, Suffolk.*

THE VICTORIA REGIA.—About twenty-five years ago, I should think, or a little less, an old gentleman came to end his days in the Isle of Wight, for its climate's sake, and pitched his tent near to me. We soon came to be on very friendly terms, and I learned a great deal from him about plants, and gardeners, and gardens, and such like. Mr. Howarth (or Haworth, I do not remember which it was) was a tenant of the late Duke of Devonshire, and had a beautiful place near Hassop, in Derbyshire, and was acquainted with the Duke, and also knew Sir Joseph Paxton quite well before and after his rise. He told me that when the first blossom of the Victoria regia at Chatsworth opened it was in the night or evening, and the Duke was at his marine residence at Eastbourne. Paxton was so delighted with the flower, and he thought the Duke would be so delighted with it, that he chartered an express train, and went off at once to Eastbourne with his prize. He arrived there just before the breakfast-time of the Duke, and he put it on the table so as to be the first thing which would greet him in the morning. "Well done, Paxton!" was the laconic but sufficient commendation of the Duke, and the great gardener went back to Chatsworth with delight. Mr. Howarth was so intimately acquainted with Sir Joseph Paxton, and he lived so near to Chatsworth, that I feel there can be no mistake in this story, which I had from his lips. *Henry Ewbank, St. John's, Ryde.*

I do not wish to be too hard on "W. W.'s" fanciful theories about this plant, but I assure him he is mistaken about its leaf-development. I have seen the Victoria at Kew, Regent's Park, Glasgow, Sheffield, Chatsworth, and Dalkeith, and had the care of it at one of these places for long enough, and in every case the leaves seemed to behave in the way I have described. "W. W.'s" admission this week, that the leaves of weak plants do lie flat upon the water, is fatal to his case. Strong and weak plants unfold their leaves in exactly the same manner, only in the latter the growing force is sooner spent, and the leaves flatten out sooner. The young leaf stands almost clear of the water at first, like a young hedgehog, and then begins to unroll. Photos are of no use in this case. The reason the leaves are generally seen with a turned-up edge is, that the older leaves soon begin to get ragged at their edges, and are removed to make room for the younger leaves. The plants I had the care of produced leaves over 6 feet in diameter, so they could not be called weak. "W. W.'s" reduction of his "sailors'" ages by a half, is what I expected. His statement this week, that Sir Joseph Paxton's Victoria produced one hundred and fifty leaves and one hundred and twenty-six flowers, is another staggerer. The growing season begins about February, when the seed is sown, and ends by December, so that the rate of development must have been miraculous. Knowing the Chatsworth tank well, I am puzzled to know where they were accommodated, and I venture to say that the like has not been seen there since. A leaf is not produced in a day or even in a week, and when the flowers begin to appear,

the leaves grow less and less. In short, the Victoria behaves like the Nymphaeas, the leaves of which unfold in just the same way, only the flowers of the Nymphaea are much larger in proportion to the leaves of the plant than those of the Victoria. *Vic.—P.S.* "W. W.'s" statement that Paxton's plant "in exactly a year from the opening of the first flower (Nov. 5), it had produced one hundred and fifty leaves, and 126 flowers," is a puzzler, as it shows that the plant was at its best in the dead of winter, when, as all practically acquainted with its culture know, the plant fades and dies off. *V.*

PRICES OF PEACHES.—"Alpha's" complaint as to the prices of Peaches in the market has, in an instance that was the other day brought before my notice, such an obverse side, that I ask leave to give it. A gardener friend earlier in the season, wanting specially a dozen Peaches for a particular dinner party, asked a neighbouring gardener who had several Peach-houses and started early especially for market sale, to send him over a dozen fruits, and he would pay him later on. The fruits sent were not particularly fine ones, but they served the purpose. Some ten days since the gardeners met, and when the latter asked of the former what he owed for the Peaches, instead of saying, as so many gardeners kindly do with fellow-gardeners, "Oh, when I want something special I will ask you to send it in place of the Peaches," he said the price was 24s. and that sum my friend paid out of his own pocket. I hope for the credit of the profession the seller in question is the only gardener in the kingdom who would do so mean an act. *D.*

JUDGES AND SCHEDULES.—I suppose that so long as flower-show judges are poor mortals, they will make egregious blunders, although those Mr. Pettigrew refers to are quite inexcusable. But badly-drawn schedules have much to answer for, especially when conditions governing classes are affixed that are inexplicable, or are so remotely placed in the schedule that they are overlooked. A curious case occurred the other day where a class for "hardy fruit" was competed in by some eminent gardeners, one of whom having much the best collection, staged several dishes grown under glass. I was appealed to for an opinion, but although it may have been the intention of the drawers of the schedule to have only outdoor fruit, it was not so expressed, and I had to say that the judges could not go beyond the schedule in their awards. It would have been so easy to have required the fruits exhibited to have been grown outdoors. *A. D.*

A DWARF SUNFLOWER.—Herewith I send you a specimen flower of a new dwarf single Sunflower which I have raised and grown now for three years. I have also raised another variety with a single row of detached petals, both varieties growing only 2 feet high. I had intended to send the enclosed with plant to the Royal Horticultural Society, but found that it would not last so long. *W. Sellers, 2, Foleshill Road, Coventry.* [The flower is a good one, and the variety may be useful, on account of its dwarf character. *Ed.*]

MAIZE (Indian Corn).—We have grown this, more or less, for the last fifteen years, and during the whole time we have only ripened the cobs in two years. The fault has evidently been in the variety grown, as, until this year, our tallest specimens have been under 6 ft. high, and the cobs, when they have ripened, have been very small. We have had an annual hunt for a variety which would grow strongly in a temperate climate, and I may give the credit of our success this year to Messrs. Clibran, of Altrincham, who have found us a variety which comes to us named *Zea Caragua*. Growing in the open it is now 8 ft. high, with large cobs, showing it has the rank tropical appearance which Maize has in its natural climate, and one plant, lifted from outside, is now 13 ft. high under glass. To those who admire the beauty of this plant, and who like green Corn to eat, *Zea Caragua* appears to be the variety to grow. I have been a great and constant trouble to Messrs. Clibran in this matter, and can only express my satisfaction that they have at last succeeded in finding a variety which suits our climate perfectly. *Thos. Fletcher, Grappenhall, Cheshire.*

CATALPA SPECIOSA.—For the sake of exact record, I am glad to see Mr. John Booth's statement. It then appears that not having heard or read of any previous flowering of this tree, I was too incautious, and should have done better to write "probably for the first time." It seems that the wonderful climate

of Tourraine and the fertile sand of Berlin has brought the trees to an earlier condition of flowering than the clayey soil of Baden-Baden, for all these came from the first batch of seedlings raised after the discovery of the plant. The honour of drawing attention to this tree, and the subsequent most liberal distribution of plants and seeds, is due to Chas. S. Sargent, Professor and Director of the Arnold Arboretum, Jamaica Plain, America. I will inquire at Neustadt-Eberswalde, Tharand, Bamberg, and Vienna to know what has become of the plants, which at Mr. Sargent's request I sent there and reported upon. As the trees seem to thrive well at Berlin, it is worth while to call attention to the plant as a splendid landscape, alley, and timber tree for all middle Europe. *Max Leichtlin, Baden-Baden.*

HYBRID CLEMATIS.—With regard to the Clematis described by M. André in the *Revue Horticole*, I beg to state that I have raised a hybrid between *C. coccinea* and *C. lanuginosa*, the latter being the seed-

they were fastened upon a glass stool, with Hercules working a generator at her. *John and Joan Greengage, of Applegarth.*

AUTOMATIC TEMPERATURE RECORDER.—The writer of the article on the above subject appears to be unaware that an instrument for this purpose has been commonly known and used for many years past. It is similar in size and appearance to the barograph, or self-recording barometer, the stock patterns of both instruments running one week. I have had one of these, known by the makers as a thermograph, fixed outside my conservatory for some years past, and enclose one of the charts obtained during the week ending July 17, the week running from Monday to Monday. The only objection to these for exact work is, that the recording pen is liable to gradually rise, and give tracings above standard readings; for this reason it is necessary to compare each week's chart with the record of a standard verified thermometer, and if necessary, to reset the pen. The motion of

Anthurium was a young one, and there was little or no pollen visible on its spadix when I first applied the Richardia pollen with a small paint-brush. On the second application, made some days after, I certainly noted that Anthurium pollen had appeared, hence the production of the scarlet-spathed seedlings, along with the five scarlet and white hybrids. As there are so many distinct flowers on each spadix, I presume it is possible for some of them to be fertilised with the Richardia pollen, while the others are fertilised with that of the Anthurium. Another of my hybrids is showing a white spathe, and if it comes to maturity I shall have great pleasure in forwarding the spathe to you. *O. O. Wrigley, Bridge Hall, Bury, Lancashire.*

LILIUM TIGRINUM SPLENDENS.—Of this magnificent hardy Chinese Lily introduced in 1804, we have this year a splendid bed, which for show or brightness of colour certainly excels all else in the flower garden. The stems are near upon 6 feet high, and many of them carrying from twelve to twenty flowers of bright deep orange, profusely besprinkled with black spots. What this bed is edged with, or with what it is surrounded, I must not enter upon any description here, or I should get myself into a labyrinth of detail out of which I would have difficulty in finding a way. Suffice it, therefore, to say that this gorgeous "clump" of Lily—as Capability Brown used to say—was brought to its present state of excellence with but little care or trouble. During the autumn of 1889 I gathered a quantity of those little bulblets which form in the axils of the leaves. These were sown in pans in October of the same year, and planted out thinly in May, 1891, where they have remained ever since. I have no difficulty in giving the age of these plants, as from the weather-beaten label I have taken the above dates. I do not particularly wish to write a libel on our old friends the Dahlia or the Hollyhock, but for clumps, masses, or the back of herbaceous borders, nothing that I am acquainted with can compare with this Tiger Lily. That these Lilies will become popular I have not the least doubt, especially if the simple method of propagating becomes more generally known; as a show plant in autumn, there is nothing to approach them. They are hardy, and appear to enjoy perfect immunity from all insect pests, both above and below-ground. In a large room, and in proportionately large flower-vases judiciously placed, with two or three spikes in each, they make quite a "burning and a shining light;" and for effect, it is questionable whether they could be beaten by any of the far more expensive flowers of the Orchid family. *W. Miller, Combe Abbey.*



FIG. 49.—DWARF ALMOND, *AMYGDALUS NANA*: SHOWING THE FRUIT.

A, husk removed to show the stone; B, longitudinal, and D, transverse section through fruit; C, Embryo showing one cotyledon and the plumule.

parent; it has flowered for the last three years, on young shoots sprouting from the root, and dying down in autumn. The flowers are intermediate, cup-shaped, half open, of large size, and of a bright rosy-purple colour. *Max Leichtlin, Baden-Baden.*

MARKET PRICES.—Your correspondent "Alpha" does not overstate the truth, and we can confirm, and even outdo, his price-list, for good Grapes of ours were sold—or said to be so—at 8s. per lb. in June. While everything flies in the lump to Covent Garden, that very foul hole must be crammed, and all its contents trodden on. Meanwhile, to the public the price of fruit is as monstrous as ever, at least, if they get it from the west-end tradesmen, who will not deal with the grower direct, because they can get his produce for next to nothing from the salesmen. These latter undertake ten times as much work as they can properly discharge, and dash through it anyhow, to the ruin of their consignors. While this system lasts, it must be nothing but a cruel mockery to talk of the "profitable growth of fruit" in the neighbourhood of London, or anywhere in the south of England, for which Covent Garden rules the prices. We could tell tales by the dozen which would make the hair of Justice stand on end, as if

the pen is caused by the action of varying temperatures on a compound bar of steel and brass, similar in construction to the compensation balance of a watch. The twisting caused by unequal expansion of the two metals causes a strain which slowly alters the form of the compound bar, the free end of which is connected to the recording pen, thus causing a gradual error, which requires correcting at intervals. The use of this instrument will explain why apparently severe night frosts sometimes do comparatively little damage, when at other times a higher temperature as shown by an ordinary minimum thermometer, does a considerable amount of mischief. In the former case the thermograph will show that the low temperature has had a very short duration, whereas in the latter it will have continued throughout the night. An ordinary minimum thermometer is misleading, as it does not show the duration of the cold period, but simply marks the lowest temperature, which may not have lasted for half-an-hour out of the twenty-four hours. *Thos. Fletcher, Grappenhall, Cheshire.*

HYBRID ANTHURIUM.—In respect to the fertilising of the Anthurium with the pollen of the Richardia, I can only say that the spathe of the

AMYGDALUS NANA.

A VERY old inhabitant of our shrubberies is the dwarf Almond, *Amygdalus nana*. It flowers generally every year, but the fruit is so rare that we avail ourselves of the kindness of a correspondent, who has grown the plant for sixty years without previously seeing the fruit, to give a figure of it. The drupe is like that of an ordinary Almond, but the stone is not so deeply pitted and furrowed. The dwarf Almond is a native of Northern Asia, the Caucasus, and Southern and Central Russia and Armenia. We are not aware whether the experiment has been tried, but it would seem as if from its hardihood and dwarf habit that it might be useful as a stock for Peaches and Plums, though its habit of producing suckers would be objectionable.

TREES AND SHRUBS.

BLUE CONIFERS.

IN the Scone Arboretum there are three Conifers that are of such a deep glaucous hue that they may well be termed blue, or, rather, azure-coloured. They are the Oregon variety of *Abies nobilis*, *Picea pungens glauca*, and *Abies concolor violacea*. The tallest *nobilis*, Mr. McKinnon said, was 83 feet in height. *Pinus monticola* also succeeds in this famous arboretum. There were several tree-like specimens; the tallest was 70 feet. The distinct-foliaged *A. Albertiana* reached a height of 52 feet; according to Mr. Hunter, it is so hardy that it will withstand the winds of bleak Rannock. *Vagabond.*

SOCIETIES.

ROYAL HORTICULTURAL.

Great Show at the Agricultural Hall, Islington.

AUGUST 29, 30, 31, and SEPTEMBER 1.

Floral Committee.—On this occasion there were present, George Paul, Esq., in the chair; and Messrs. H. B. May, Chas. T. Drury, J. D. Pawle, R. H. Williams, Chas. Pearson, Robert Owen, Chas. Jefferies, W. Bains, Geo. Stevens, T. Godfrey, A. Dean, J. H. Fitt, R. B. Lowe, C. J. Salter, J. Jennings, H. Turner, Frank Ross, Peter Barr, Chas. Noble, and Geo. Gordon.

Messrs. J. Veitch & Sons, Chelsea, were awarded a First-class Certificate for *Cornus brachypoda* variegata, also for *Clerodendron trichotomum*, a hardy shrub, generally known, and of good decorative quality. W. B. Kellock, Esq., showed *Agave Leopold II.* and *A. univittata marginata*, both very pretty and attractive hybrids. In each case a First-class Certificate was awarded.

Mr. Reynolds, gr. to the Messrs. de Rothschild, Gunnersbury Park, Acton, obtained an Award of Merit for Carnation Mrs. Leopold de Rothschild, a pink flower, full, and of good size. Sir Trevor Lawrence, Barford Lodge, Dorking, exhibited a plant of *Exacum macranthum*, not often seen, although known some time. Its flowers, of a dark blue, are very showy in a stove (Award of Merit). Also *Pentstemon Clevelandii*, a pretty plant, producing long spikes, bearing slender tubular, scarlet flowers (Award of Merit).

From Mr. Anthony Waterer, Knapp Hill Nursery, near Woking, came *Weigela Eva Rathke*, a variety producing very fine dark red or crimson flowers. If it will bloom at so late a period, it will be valuable (First-class Certificate).

An Award of Merit was given to *Pink, Ernest Ladhams*, shown by Mr. B. Ladhams, apparently a very desirable border variety. Several Lilies were shown by Messrs. Wallace & Co., St. John St., Colchester, and to *Lilium Henryii* was granted an Award of Merit. The same distinction was given to *Helianthus rigidus* var., Miss Melliish, exhibited by the Rev. W. Wilks, a large flower of bright yellow.

Messrs. Barron & Sons, Elvaeton Nursery, Borrowash, Derby, contributed a rather large collection of foliage picture-trees and shrubs, which included most of the finer species and varieties with variegated or other than green-coloured foliage, of Acer, including *A. negundo aurea* variegata, *Fagus, Cornus, Quercus, Symphoricarpos, Ulmus, Hydrangea, Berberis*, and *Sambucus*.

Messrs. J. Peed & Son, nurserymen, Norwood, S., had an excellent small table of *Caladiums*, some *Bertolonias*, and *Strobilanthes Dyerianus*.

Mr. Ant. Waterer, Nurseries, Knapp Hill, Woking, showed a number of perfect specimens averaging four feet in height, of the Blue Spruce of Colorado, *Picea pungens glauca*, an admirable Conifer for garden and park planting.

COMPETITIVE EXHIBITS.

Groups.—Groups of Palms and foliage plants, to occupy a space not exceeding 800 sq. feet.—A group of Ferns, Palms, Crotons, &c., the Palms forming the backbone, was staged at the south end of the building by Mr. H. B. May, Dyson's Lane Nursery, Edmonton, and, like the rest, was confined to a straight-lined figure, which, if it was not displeasing, had nothing to recommend this mode of arrangement. With some amount of allowable filling-in with common forms of Ferns, and as forming a groundwork, the best things and finest-grown specimens and rarities were lightly spread about, Ferns alternating with *Dracenas*, *Crotons*, *Palms*, and *Marantas*. Of Ferns shown in this group, we may mention *Platycerium stemmaria*, a fine West African evergreen species, of easy culture and propagation; *P. grande*, a fine piece of a striking Malayan species; *P. alci-corne*; *Adiantum cardioloba*; many forms of *Adiantum*, *Pteris*, and *Davallia*; some of the first two crested and tasselled; *Gymnogramma Mayi*, a beautiful form of silver Fern; *Meniscium oligophyllum*, a broad fronded species that is rendered very effective when the narrow fertile fronds appear covered with black sori; *Aglaomorpha Meyeriana*, is a beautiful Fern of robust habit, the frond simply pinnate, the fertile ones narrow and the sori of a brown colour.

Phrynium variegatum (*Maranta*), with white and green foliage, is a highly decorative subject, and was

observed in some quantity. *Crotons* were rather numerous, the best being *Neumannii*, *Alexandra II.* (a very brightly coloured leaf), *Musaica*, *Flamingo*, and *Mortefontainei*. In *Palms* were noticed *Kentia Forsteriana*, *K. Belmoreana*, *Seaforthia elegans*, *Cocos Weddelliana*, *Areca crinita*, *Geonoma Schilleriana*. Other plants consisted of variegated *Ananas*, *Ficus elastica variegata*, *Marantas Makoyana*, and others; *Dieffenbachia Reginae*, *Pandanus Veitchii*, and *Dracenas* in variety (1st prize).

A group was furnished by Messrs. W. Cutbush & Son, Highgate Hill, N., with *Palms* as a background, and *Lilies*, *Bouvardias*, *Pancratiums*, *Dracenas*, &c., as filling material. Like many of the other groups, it had a poor effect.

H. Tate, Esq., Park Hill, Streatham (gr. Mr. Howe), showed a group of twelve stove and greenhouse Ferns, fine well-grown specimens, not too large, but ranging from 3 to 4 ft. in diameter. The finest of them were *Gymnogramma schizophylla gloriosa*, an elegant species; *Goniophlebium sub-auriculatum*, *Adiantum Williamsi*, *A. Wigandii*, a nice Fern with sub-divided pinnae; *Microlepia hirta cristata*, *Dicksonia antarctica*, and *Nephrolepis exaltata* (1st prize).

Messrs. MacArthur, 4, Maida Vale, W., showed a group of twelve Ferns of medium size, of stove and greenhouse species. We may mention *Adiantum concinnum latum*, *A. decorum*, *Davallia Mooreana*, *D. elegans*, *Gymnogramma schizophylla gloriosa*, *Pteris scaberula*, *Microlepia hirta cristata*, and *Nephrolepis triplinatifida rufescens*. The plants did the exhibitor much credit (2nd prize).

Messrs. B. S. Williams & Sons, Victoria and Paradise Nurseries, Holloway, showed two specimen *Palms*.

Twelve *Palms*.—In this class, Messrs. B. S. Williams & Sons showed a group of plants in pots not more than 10 inches in diameter, healthy and vigorous examples of *Rhaphis flabelliformis*, *Seaforthia elegans*, *Areca lutescens*, *Cocos Weddelliana*, *Phoenix rupicola*, *P. tenuis*, &c. This firm exhibited a fine large group of foliage plants in considerable variety. Amongst them were *Tillandsia musaica*, a nice plant; *Phyllotanium Lindenii*, a very fine mass; *Dracena lentiginosa*, *Crotons* in variety as affording the desirable amount of colour soils to the green. Intermixed with the foliage plants were such Orchids as *Cattleya Gaskelliana*, *C. maxima Backhousiana*, *Burlingtonia fragrans*, *Celogyne Massangeana*, *Miltonia vexillaria*, *Dendrobium Phalaenopsis Schroderiana*, various *Cypripediums*, and some *Nepenthes* in pitcher. The rest of the group consisted of ordinary furnishing materials.

A very pleasing group, rather unusually arranged, was that furnished by Mr. J. Hudson, gr. to Messrs. Rothschild, Acton, on a space of 300 square feet. The plan consisted of a low ground-work of *Maidenhair Fern* and other plants of low stature, dotted about over which, their pots hidden by the greenery, were specimens of *Lilium speciosum album*, and *L. s. roseum*, *Agapanthus umbellatus*, *Campanula pyramidalis*, *Francoa ramosa*, *Bouvardias*, *Rochea falcata*, *Caladiums*, *Ophiopogon spicatus*, *Pandanus Veitchii*, *Ericas*, *Vallota*, &c., and at the back of the group a number of *Palms* of greater height than the rest of the plants. This was the only one shown in this class, and was awarded 2nd prize, but was well worthy of a 1st.

A group of plants covering 150 square feet, and consisting of flowering and foliage plants, was arranged by Mr. J. Nicholson, gr. to J. W. Mells, Sewardstone Lodge, Chingford. It was a lovely group of what is termed furnishing plants, arranged in close order, with a great many *Crotons* intermixed, simple enough truly, but with a certain kind of effectiveness. Some *Palms* formed a background to the whole (1st prize).

Mr. J. Hudson, gr., Gunnersbury House, showed an excellent group, covering 150 square feet, of scented-leaved *Pelargoniums*, mostly in bush shape, the only exceptions being two fan-trained examples of *P. fragrans*, 6 feet long by 5 feet high, less than three years old. The plants were strong, healthy, and well furnished with foliage, but sparsely, in all instances, with flowers. As examples of good culture they were unique in their way. Intermixed with these were a few standard plants of *Aloysia citrodora*, which showed the remains of numerous flower trusses (1st prize).

A group of eight *Crotons* was shown by Messrs. B. S. Williams & Sons, plants of 3½ feet high and in diameter, consisting of the finer varieties in good form (2nd prize awarded).

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, had a telling mass, in pyramidal form, of *Pelargoniums Dahlias*, &c. Among the first-named was Mrs. W.

Wright, a so-called blue-coloured variety, but not considered so good as *Blue Peter*, really a purplish-magenta, it has a fine large truss. The flowering plants were set in a mass of *Maidenhair Fern*.

The end group at the north of the building was contributed by Messrs. E. D. Shuttleworth & Co., Peckham Rye and Fleet, Hants. It consisted of large *Palms*, *Aralias*, *Cycads*, *Coleus*, *Ficus elastica* variegata, *Caladiums*, *Crotons*, and *Dracenas*, the whole being effective as a screen or finish at that part of the hall.

Groups of *Lilies* in pots or as cut spikes on a space of 150 square feet.—This was a group arranged with foliage-plants, the work of Messrs. Bunting & Son, nurserymen, London Road, Colchester. The group consisted of *L. auratum platyphyllum* in excellent bloom, and *L. a. virginalis* at the back part, and in the middle and foreground, *L. longiflorum*, *L. tigrinum fl.-pl.*, *L. speciosum album*, and *L. s. roseum*, *L. Fortunei*, and *L. Batemanii* (1st prize).

Two *Cycads*, viz., *Encephalartos caffra* and *Cycas circinalis*, were shown by Messrs. B. H. Williams & Son. The former had a stout stem of two feet in height and leaves six feet in length; and the latter was a remarkably fine plant, with a stem one and a half feet high, and numerous leaves.

A novel group was the one set up by Messrs. G. Paul & Son, Old Nurseries, Cheshunt, consisting of *Bamboos* and tall grasses shown in pots as grown. There were mixed with these some poor specimens of *Tritoma Uvaria*, and new varieties of *Canna* bearing flowers.

Group of *Coleus*, specially well grown, came from J. W. Mells, Esq., These were mostly grown as bushes, and the colours left nothing to be desired. In size the plants ranged from 3 to 4 feet in diameter, and rather less in height (1st prize).

CUT FLOWERS.

This division, which included the whole of the cut flowers, was well-filled, and of itself made an exhibition of high character; the light was good, and the *Dahlias* especially were seen to great advantage. It is not too much to conclude that at this season of the year there is an abundance of stove and greenhouse flowers, and yet the class for twenty-four bunches, distinct, did not bring a single exhibitor. In the class for twelve bunches, the 1st prize was awarded to Mr. J. Gibson, gr. to T. B. Atkins, Esq., Halstead Place, Sevenoaks, with massive bunches of *Eucharis amazonica*, *Pancratium fragrans*, *Dipladenia Brearleyana*, *D. amabilis*, and *D. boliviensis*; *Clerodendron fallax*, *Lapageria rosea* and *alba*, *Anthurium Scherzerianum*, *Ixora Fraseri*, *Allamanda Schottii*, &c. 2nd, Mr. Howe, gr. to H. Tate, Esq., Park Hill, Streatham Common, who had *Gloriosa superba*, *Eucharis amazonica*, *Allamanda Schottii*, *Valotta purpurea*, *Odontoglossum grande*, *Cypripedium barbatum superbum*, *Stephanotis floribunda*, *Gloxinias*, *Bouvardias*, *Streptocarpus*, &c.; 3rd, Miss R. Debenham, St. Albans.

Gladiolus.—The exhibits of these plants were in very fine form, and the spikes grown by Messrs. J. Burrell & Co., Howe End Nurseries, Cambridge, were really superb, and consisted of some 200 spikes of bloom. Among them were some very fine new varieties, viz., *Orlando*, *Gertrude*, *Cassandra*, *Bernice*, and *Leonora*, *Conquerant*, *Baroness Burdett-Coutts*, *Pollux*, *Chameleon*, *Iolanthe*, *Cygné*, *Flambeau*, *Amitié*, *Carnation*, *Tour du Monde*, *Matador*, *Rayon d'Or*, *Pyramide*, *Igne*, *Jeanette*, *Enchantress*, *Formosa*, *Belladonna*, *Crepuscul*, *Grande Rouge*, *Sorcerer*, and *Pasteur*—as fine a collection as anyone can well desire to grow; and a collection of hybrids of *G. Lemoinei*. 2nd, Messrs. Kelway & Son, nurserymen, Langport, who also had a very large collection, the leading varieties being *James Kelway*, *Sir F. Bolton*, *Ovid*, *Conquerant*, *Dr. Benson*, *Princess Royal*, *Mr. D. Mainwaring*, *Ormonde*, *Berron*, *Mrs. Gladstone*, *Baroness Burdett-Coutts*, *Duchess of Buccleuch*, *Clemence*, *Maid of Orleans*, *Princess Olga*, &c.

Dahlias were numerous, of very good quality, and the collections arranged for effect took up a considerable amount of space, and were highly effective, the blooms generally being clean, fresh, and bright. Messrs. J. Cheal & Sons, nurserymen, Crawley, were 1st with show *Cactus*, *Pompon* and single varieties, arranged in cones and sloping stands, and also in striking bunches and in boxes, hardy flowers, *Palms*, and *Ferns* being suitably intermingled. 2nd, Messrs. Keynes, Williams & Co., Salisbury, who had in the centre an archway of bark, lined with scarlet *Dahlias*, also cones and panels of various *Dahlias*, show, decorative, pompon, and single; also stands and bouquets of the same, finished off in the front

with bark and moss, various foliage being employed for effect. These were the only competitors.

With a collection of sixty show and fancy Dahlias, 1st, Mr. John Walker, nurseryman, Thame, with large, fresh, bright-looking blooms of fine quality. He had Majestic, William Rawlings, Colonelist, Burgundy, Henry Walton, Harry Keith, Earl of Ravensworth, Crimson King, John Walker, T. J. Saltmarsh, Prince of Denmark, John Henshaw, Fred. Smith, W. Keith, Mrs. Gladstone, Mrs. D. Saunders, Matthew Campbell (fancy), J. T. West, Harrison Weir, Shirley Hibberd, John Heckling, J. N. Keynes, John Standish, Dr. Moffat, Mrs. Harris, and James Stephens, several being in duplicate. 2nd, Mr. S. Mortimer, Swiss Nursery, Farnham, who had Mrs. J. Downie, Burgundy, Dandy (fancy), John Hickling, John Walker, Rev. J. Godday, Maud Fellowes, Comte de la Saux (fancy), Matthew Campbell (fancy), Willie Garratt, Mr. G. Harris, Mr. Gladstone, Wm. Rawlings, Mrs. D. Saunders, Major Bartelott, Rebecca (fancy), Sunbeam, T. J. Saltmarsh, Nugget, George Rawlings, George Barnes, Gloire de Lyon, Diadem, and Glowworm. 3rd, Mr. C. Turner, Royal Nursery, Slough. Messrs. Keynes & Co., also exhibited.

Cactus Dahlias were shown in superb bunches. The best eighteen came from Messrs. Keynes & Co., who had Lady Penzance, soft yellow; Black Prince, St. Catherine, Baron Schroder, Kaiserin, Apollo, a bright scarlet; Countess of Radnor, Delicata, very beautiful; Dawn, lemon deepening to orange, slightly shaded in the centre; Countess of Pembroke, Lady Skelmersdale, Duke of Clarence, Lady Henry Grovenor, Sir Roger, Miss Violet Morgan, Chancellor, crimson, suffused with purple; Countess of Gosford, orange-salmon, deep lemon centre; and Bertha Mawley, very rich and bright. 2nd, Messrs. J. Cheal & Son, who had fine and striking bunches of Kaiserin, Bertha Mawley, Countess of Gosford, Delicata, Duke of Clarence, Kynerith, Beauty of Eynsford, Earnest Cheal, fine scarlet; Professor Baldwin, Marchioness of Bute, Robert Cannell, Duchess of York, deep orange; Beauty of Arundel, Black Prince, Countess of Radnor, Lord Rosebery, and Juarez. 3rd, Mr. C. Turner, who had bold bunches of Amphion, Lord Rosebery, Black Prince, Professor Baldwin, Blushing Bride, Beauty of Brentwood, Sir Hugo, Mrs. Hawkins, Kynerith, Delicata, and St. Catherine.

Equally striking were the bunches of Pompon Dahlias. With twelve bunches, Messrs. Keynes & Co. were 1st with Crimson Beauty, Lady Blanche, Little Jack, Little Frank, Midnight, Whisper, Janet, Sovereign, Admiration, White Aster, Isabel, Ceres, Darkness, Lælia, Grace, George Brinkman, Bacchus, and Madge. Messrs. Cheal & Son were 2nd with Arthur West, George Brinkman, Sunshine, Darkness, Goldfinder, Martial, Phoebe, Lady Blanche, Isabel, Boule d'Or, Marion, E. F. Jungker, Whisper, Grace, Cecil, Eva, Tommy Keith, and Favourite. 3d, Mr. C. Turner, with Rowena, Fairy Tale, White Aster, Captain Boynton, Irene, Dart, Lady Blanche, Phoebe, Whisper, Eric, and H. E. Searle. Single Dahlias in bunches of ten blooms were highly effective also, and again Messrs. Cheal & Son were awarded the 1st prize with refined and even bunches of Guilielma, A. Hughes, Bride, James Scobie, Evelyn, Lowfield Beauty, Yellow Satin, Mrs. Glasscock, Ruth, Aurora, Amos Perry, W. C. Harvey, Duke of York, Lady Whitehead, Kitty, Formosa, Victoria, and Northern Star. 2nd, Mr. E. F. Such, nurseryman, Maidenhead, with James Scobie, John Cowan, W. C. Harvey, Fashion, Victory, Duchess of Anhalt, Maure Queen, Lutea grandiflora, Sir G. Wolseley, J. S. Ware, Northern Star, Lady Montefiore, Lowfield Beauty, Mr. Rose, Miss Henshaw, and Eclipse. These were the only exhibitors.

Show and Fancy Dahlias were capitally shown by amateurs in the class for twenty-four blooms. Mr. J. T. West, gr. to W. Keith, Esq., Cornwallis, Brentwood, who had finished blooms of Harry Keith, Alice Emily, J. T. West, Wm. Rawlings, Dorothy, Ethel Britton, Edwd. Sharman, Geo. Rawlings, John Walker, Willie Garratt, Maud Fellowes, Arthur Rawlings, Sunbeam, R. F. Rawlings, Harry Keith, Prince of Denmark, Frank Pearce (fancy), and Mrs. Gladstone. 2nd, Mr. J. Vagg, gr. to J. Theobald, Esq., J.P., Bedford, Havering, Romford, who had George Barnes, Maud Fellowes, Harry Keith, T. J. Saltmarsh, Duchess of Fife, R. T. Rawlings, Prince of Denmark, Mrs. W. Slack, Mr. J. Downie (self, and also in its fancy form), Rev. J. B. M. Camm (fancy), T. W. Girdlestone, Arthur Ocock, J. T. West, Mrs. Glasscock, Mrs. Langtry, and Mr. McIntosh (fancy). 3rd, J. Gurney Fowler, Esq., Woodford, Essex.

Amateurs also exhibited twelve bunches of Cactus and decorative Dahlias, Mr. J. T. West being again 1st, with fine bunches of St. Catherine, Joseph Chamberlain, &c.; 2nd J. G. Fowler, Esq., with King of Cactus, Mrs. Hawkins, Cannell's Favourite, Lady Marshall, Cardinal, Marchioness of Bute, Sir Hugo, Atopheon, &c.; 3rd, Mr. Jas. Hudson, gr. to Messrs. De Rothschild, Gunnersbury House, Acton.

Special prizes were offered by Messrs. Keynes, Williams & Co., for twelve bunches of true Cactus Dahlias, the only exhibitor being Mr. R. Maher, gr. to A. Waterhouse, Esq., Yattenden Court, Newbury, who was awarded the 2nd prize. His best were Panthea, R. Maher, Marchioness of Bate, Lady Marshall, Juarez, Mr. Hawkins, and Honoria.

The best twelve bunches of Pompon Dahlias shown by amateurs were Mr. J. T. West's, who had bunches of Eva, Fair Helen, Arthur West, Eurydice, Mary Kirk, Achilles, Little Sweetheart, Fanny Keith, Gipsy, and Winifred; 2nd, Mr. Jas. Hudson, who had Hector, Mabel, Iolanthe, Ariel, Janet, Favourite, &c.

Hardy Perennials.—Very fine and effective were the banks of hardy perennials and bulbous plants. The 1st prize fell to Mr. B. Ladhams, Shirley Nursery, Southampton, who had an excellent collection, consisting of *Coreopsis grandiflora*, *Stokesia cyanea*, *Lilium* of various types—*L. auratum*, *L. tigrinum*, *L. speciosum*, &c.; *Malva moschata* alba, *Tropæolum speciosum*, *Rudbeckia purpurea*, *Scabiosa caucasica*, *Gaillardias*, *Pentstemons*, *Anemone japonica* in variety, *Helianthus*, both double and single-flowered, *Liatris pycnostachya*, *Matricaria inodora* fl.-pl., *Hyacinthus candicans*, *Trollius europæus*, *Platycodon autumnale*, *Catananche* (silvery), *Phloxes*, *Delphiniums*, *Clematis erecta*, *Lychnis Haageana*, &c. 2nd, Messrs. Paul & Son, Old Nurseries, Cheshunt, who had massive bunches of *Helianthus* in variety, *Lilies*, *Aconitum autumnale*, *Montbretias* in variety, including *crocosmæiflora*, *pyramidalis*, *aurea*, *superba*, &c.; *Chelone barbata*, *Physostegia speciosa*, *Gladiolus* in variety, *Anemone japonica* alba, *Rudbeckia purpurea*, &c. Equal 3rd, Messrs. James Cocker & Sons, Sunny Park Nurseries, Aberdeen, and Mr. E. F. Such, nurseryman, Maidenhead.

In the amateurs' classes for the same, Mr. G. H. Sage, gr. to Earl Dysart, Ham House, Petersham, was 1st, with twenty-four bunches, having excellent examples of *Phlox*, *Solidago altissima*, *Pyrethrums*, *Delphiniums*, *Rudbeckia Newmanni*, *R. purpurea*, *Gaillardias*, *Iris* Lord Beaconsfield, *Malva moschata* alba, *Chrysanthemum latifolium*, *Montbretia crocosmæiflora*, *Anemone japonica* alba, *Helenium autumnale*, *Gaura Lindheimeri*, *Aster bessarabicus*, *Statice speciosa*, &c.; 2nd, the Rev. F. Page Roberts, Scolt Rectory, Norfolk, who had a very fine bunch of *Tropæolum speciosum*, *Statice latifolia*, *Solidago altissima*, *Lilium* in variety, *Rudbeckia Newmanni*, *Papaver nudicaule*, *Plumbago Larpentæ*, *Colchicum autumnale*, *Gaillardias*, *Dianthus monspessulanus*, *Phlox*, *Clematis coccinea*, &c.; 3rd, Miss R. Debenham, St. Albans.

With twelve bunches, Mr. J. Hudson was placed 1st, showing *Phloxes*, *Delphiniums*, a very fine form of the Bulrush, *Helianthus multiflorus*, *Gaillardias*, *Anemone japonica* alba, *Helenium pumilum*, *Nymphaea alba*, *Rudbeckia Newmanni*, &c., he being the only exhibitor.

The class for herbaceous flowers, in which Messrs. Kelway & Son offered special prizes, did not bring a single entry.

Bunches of herbaceous *Phloxes* were finely shown by Messrs. Paul & Son, they being placed 1st with twelve in not less than nine varieties, excellent quality characterising all. Messrs. Paul & Son had a dozen distinct varieties, and a better selection for a collection than the following could scarcely be made:—viz., *Boule de Feu*, *Granville*, *John Forbes*, *Baculo*, *Fiambeau*, *Comtesse de Castree*, *Molière*, *William Muir*, *Amazona*, a fine white; *Roxelane*, *Caron de Aske*, and *Eugène Dangaverelles*. 2nd, Messrs. Harkness & Sons, nurserymen, Bedale, who had as their best varieties *Lothair*, *Snowdon*, a fine white, *David Syme*, and *James Grieve*.

Collections of Sunflowers, annual and perennial, inclusive of *Haropalium*, *Helenium*, and *Helipais*, were shown by Messrs. J. Burrell & Co. and G. H. Sage, the leading award going to the former, who had bold and striking bunches of *Helianthus multiflorus maximus*, *plenus*, *doronocoides*, *præcox*, *latiflorus*, *Bouquet d'Or*, *rigidus*, and *grandipennis*; *Rudbeckias Newmanni*, *purpurea*, and *laciniatus*; *Heleniums*, *pumilum*, *grandiflorum*, and *grandicephalus striatus*, and *Helipais scabra*. Mr. G. H. Sage was 2nd, and he included a number of annual varieties in his collection, in the evident belief they were required by the schedule, and they were present

in both double and single forms; also several perennial *Helianthus*, *Rudbeckia*, and *Helenium*.

Violas in twelve pretty sprays were shown by three exhibitors, the 1st prize falling to the lot of Mr. A. J. Rouberry, The Crescent, South Woodford, who had Countess of Hopetoun, Ardwell Gem, Blush Queen, one of Dr. Stuart's new varieties, and sweetly fragrant; *Lillias Improved*, Lady Dundonald, Duchess of Sutherland, Lemon Queen, Archie Grant, Duchess of Fife, Gipsy Queen, White Flag and Goldfinch. Messrs. J. Cocker & Sons, Aberdeen, were 2nd, with larger flowers of Mrs. Gray, Duchess of Fife, Archie Grant, Mrs. H. Bellamy, Clipper, Morningfield Rival, Dawn of Day, Countess of Kintore, Bullion, Countess of Hopetoun, Robert Pirie, and Lucy Ashton. Mr. J. Nicholson, gr. to J. W. Melles, Esq., Sewardstone, Chingford, was awarded a 3rd prize, with varieties similar to the foregoing.

Four collections of Roses, arranged for effect, were staged, the 1st prize going to Messrs. Paul & Son, Old Nurseries, Cheshunt, for an imposing one, arranged on the floor. It did seem astonishing that after such hot weather, and so late in the season, such beautiful blooms should have been forthcoming. Standard Roses and baskets of cut blooms were used, with dwarf pot plants, and raised baskets also, and arranged with Ferns. The blooms of hybrid perpetuals, Teas, and garden Roses were very fine. Messrs. Jas. Cocker & Sons were 2nd, with flowers of wonderful quality, especially among the H.P.'s; the collection consisted of baskets and boxes of cut blooms, interspersed with bunches of Teas, and likewise arranged with Ferns. Mr. Geo. Mount, nurserymen, Canterbury, was 3rd, with a delightful bank of blooms, freely arranged, with Ferns at back and front. This was a welcome representation, as showing how effectively cut blooms can be arranged to secure decorative effect. Mr. W. Ramsey, nurseryman, Waltham Cross, also exhibited a remarkably good collection, which well deserved an Award. There was no competition in the class for Roses arranged for effect by amateurs.

Of miscellaneous collections of cut flowers there were several, prominent among them being a large and valuable representative collection of Roses from Messrs. W. Paul & Son, nurserymen, Waltham Cross. From Messrs. Dobbie & Co., seedsmen, Rothesay, Dahlias in great variety of all types, some of the show varieties being arranged in panels of colours; bunches of hardy perennials, early *Chrysanthemums*, *Marigolds*—French and African, *Sweet Peas*, *Asters*, *Violas*, and choice selections of vegetables—an exhibit that was a worthy exhibition in itself. Messrs. Barr & Son, King Street, Covent Garden, had a large collection of cut flowers, including many choice bulbous plants, *Gladiolus*, *Pyrethrums*, &c. From Mr. E. F. Such came eleven stands of show Dahlias, including a number of blooms of the new white self, John Walker. Messrs. Cutbush & Sons, nurserymen, Highgate, had a large and interesting collection of hardy flowers, Dahlias, &c.; and a similar collection was arranged by Messrs. E. D. Shuttleworth & Co., nurserymen, Peckham Rye. Messrs. Kelway & Co. had collections of fine quilled *Asters*, *Gaillardias*, &c. Messrs. H. Cannell & Sons, nurserymen, Swanley, had a large group of Cacti, *Begonias*, *Cactus Dahlias*, and bunches of *Carnations*; and Mr. R. Rawlings, Old Church, Romford, had several stands of fine show Dahlias.

Awards.—Several Awards of Merit were made to seedling Dahlias; the only show variety to gain this distinction was Mrs. Mortimer, a singularly novel and distinct fancy, having a clear bright golden-ground colour, the petals tipped with white, which is suffused with pink, in some cases deepening to brown; it was exhibited by Mr. Mortimer, Swiss Nursery, Farnham. To the following Cactus Dahlias, shown by Messrs. Keynes, Williams & Co.:—*Gloriosa*, bright scarlet, large, and with a tendency to become coarse in petal and outline; *Lady Penzance*, a lovely variety, of the build of *Delicata*, clear, soft yellow, very distinct—a decided acquisition; and *Chancellor*, claret, suffused with purple, very distinct in build and colour, and very fine; and to Messrs. J. Cheal & Sons, nurserymen, Crawley, for *Ernest Cheal*, deep bright scarlet, rich in colour, and a true Cactus. To Mr. C. Turner, Royal Nursery, Slough, for Pompon Dahlia *Rowena*, golden ground, heavily tipped with deep orange-red—fine shape and distinct. To Messrs. J. Burrell & Co., Cambridge, for the following: *Gladioli*, *Orlando*, rosy-salmon, with slight flakes and featherings of pink—fine form and substance; *Gratitude*, a beautiful light delicate blush variety, feather, with soft pink on the petal edges—very pretty and pleasing; *Cassandra*, cream,

suffused with the most delicate pink, yellow throat—very fine and distinct; and Bernice, having a deep cream ground, with slight flakes of pink, and a deep yellow throat. The same award was made to China Rose Duke of York, a deep-coloured variety, having the build of Tea Homère, very fine and distinct, and apparently a great acquisition as an autumn-flowering variety, from Messrs. William Paul & Son, nurserymen, Waltham Cross. Also to Pink Ernest Ladhams, a strong-growing variety, bearing large delicate-blush flowers, with dark centre; apparently an almost perpetual-blooming variety, but, alas! with the characteristic of most Pinks—a woeful pod-splitter.

Orchid Committee.

Present: Sir Trevor Lawrence, Bart., in the chair; and Messrs. Jas. O'Brien (Secretary), Dr. M. T. Masters, F.R.S., Harry J. Veitch, Thos. Statter, F. Sander, E. Hill, H. Ballantine, and H. M. Pollett.

The exhibits of Orchids were confined to two groups, together with the various specimens submitted to the Orchid committee; although in other groups, such as that of Messrs. B. S. Williams & Son, Messrs. McArthur of Maida Vale, and others, they were used to lend additional attraction to the miscellaneous arrangements.

Messrs. F. Sander & Co.'s collection, for which a Silver Banksian Medal was awarded, embraced many rare species, the most striking of which was the fine *Habenaria carnea*, with its large wax-like, flesh-coloured flowers and prettily-spotted leaves, and a figure of which was given in the *Gardeners' Chronicle*, Dec. 19, 1891, p. 729. It received a First-class Certificate. Another remarkable plant in Messrs. Sander's group was *Aërides Ballantini* aureum, white and carmine, with bright yellow lip and spur (Award of Merit); and specially noteworthy were the rich violet and purple *Calanthe Sanderiana*, *Aërides Lawrenceanum*, *Zygopetalum (Pescatorea) Klabochorum*, *Peristeria aspersa*, *Acineta Barkerii*, *Miltonia spectabilis* Moreliana, *Lælia × Oweniana*, *Cypripedium × Maynardi*, *C. × Macfarlanei*, *C. × radiosum*, *C. × picturatum*, *C. × Marshianum*, and the pretty *C. × Thayerianum*.

Messrs. W. L. Lewis & Co., Southgate, N., staged an effective group of showy Orchids, among which were some very peculiar and distinct forms of *Cattleya Leopoldi*, *C. Gaskelliana*, *C. labiata*, *C. bicolor*, a pan of *Cypripedium × polystigmaticum*, various species of *Odontoglossum*, *Lælia pumila* Dayana, *Oncidium Jonesianum*, *O. serratum*, *Dendrobium Phalaenopsis Schroderiana*, and various other *Dendrobies* and hybrid *Cypripediums* (Silver Banksian Medal).

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr., Mr. Murray), showed *Cypripedium × Sanderi-superbiens* (*Sanderianum* ♀, *superbiens* ♂), a first cross with *C. Sanderianum*. It was raised from seeds produced by Captain Vipan, Stibington Hall, and presented to Mr. Cookson. In foliage the plant somewhat resembles *C. Curtisii*, and the flower, *C. × Morganii*, but it is broader in the petal and exhibits some of the undulation on the upper part of the petal, as in *C. Sanderianum*; but altogether the difference is not so pronounced as might have been expected (Award of Merit).

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed *Cypripedium × Edwardii* (*superbiens* ♀, *Fairrieanum* ♂), with much of the form of *C. × vexillarium*, but with a whiter ground colour, and brighter rose-purple markings (Award of Merit). Mr. Statter also showed flowers of *C. × Chas. Canham*, *Cattleya granulosa superba*, and *C. g. tigrina*, exceptionally good.

Messrs. McArthur, the London Nurseries, Maida Vale, showed a form of *Cypripedium niveum*, with some rayed purple lines, named *C. n. radicans*. The Hon. Mrs. Foley, Fordingbridge, Hants (gr., Mr. Moxham), showed *Cattleya Leopoldii*, *Pernambuco* var.; and Major Joicey, Sunningdale Park, Sunningdale (gr., Mr. Fred. J. Thorne), sent a good form of *Cattleya Alexandræ*, and *Cypripedium × barbatum × selligerum*, the latter a very pretty dark hybrid, not very far removed from one of the large forms of *C. barbatum*.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. H. Balderson, P. C. M. Veitch, Geo. Taber, G. W. Cummins, Alex. Dean, Henry J. Pearson, W. H. Divers, John A. Laing, F. Q. Lane, Geo. Wythes, S. T. Wright, Robert Hogg, J. Cheal, Geo. Reynolds, J. Wright, J. W. Bates, Geo. Woodward, William Bennett, and J. Willard.

Miscellaneous.—There were collections from most of the leading nurserymen, and from some amateurs,

several of the groups of orchard-house trees, and fruit from outside and inside being especially good and attractively set-up.

The only Gold Medal was awarded to Messrs. T. F. Rivers & Son, Sawbridgeworth, for a collection of fruit trees in pots, and a few samples of orchard-house fruit. The trees were of the usual form exhibited by the firm, and attracted considerable attention. There were Vines well fruited, including Gros Maroc, Golden Queen, Gros Colmar, and Dr. Hogg, the latter being but poor. A seedling Peach was a splendid crop on one finely-formed tree, and the fruit is exceptionally large and good looking. Another seedling is of a pretty Apricot colour. Amongst the fruits exhibited were excellent Apples, Pears, Plums, and some varieties of Crabs.

Messrs. Jas. Veitch & Sons, Chelsea, staged a collection of Apples, Pears, and Plums, in 200 dishes, exclusive of a few baskets. Particularly noticeable amongst the Apples, were Frogmore Prolific, Seaton House (a very pretty variety), Lord Suffield, Peasgood's Nonsuch, Alfriston, Cellini Pippin, Lord Derby, Tower of Glamis, American Mother, Ribston Pippin, Benoin, Worcester Pearmain, Scarlet Russet, Scarlet Pearmain, Calville Nonpareil, Kerry Pippin, and Devonshire Queen. The Pears are not quite so large this season. A good collection of Plums, including many of the leading kinds, was included, and some nice little Fig trees for forcing (Silver-gilt Knightian Medal).

A very fine collection of fruit, with a row of excellent orchard-house trees down centre of table, was shown by Messrs. Geo. Bunyard & Co., including Apples, Pears, Plums, Peaches, Vines, &c.

Amongst the fruit shown in dishes, such Apples as Duchess of Oldenburg, The Duchess Favourite, Lord Suffield, Lady Sudeley, Yorkshire Beauty, Grenadier, the highly-coloured Duchess of Gloucester, and several others, were noticeable. Of Pears, the best specimens were Grosse Calebasse, Dr. Jules Guyot (a capital Pear), Beurré Clairgeau, Madame Treyve, Doyenné Boussoch; a few Nuts, Damsons, Grapes and Plums were included, also some Fig trees in pots just nice for forcing, and some well rooted runners of Strawberries (Silver-gilt Knightian Medal).

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, had also a capital collection of fruit, and a few trees in pots. The quality of the Apples and Plums was of equal merit to the other collections, and a Silver-gilt Knightian Medal was awarded here also.

A large collection of fruits, and also a first-rate group of orchard-house trees, were staged by Messrs. Wm. Paul & Son, Waltham Cross, Herts (Silver-gilt Knightian Medal). For a collection of fruit of good quality, Messrs. S. Spooner & Sons, Hounslow, were awarded a Silver Knightian Medal.

A first-rate lot of Apples came from South Wales, shown by Mr. Bytheway, Llanelly, Carmarthenshire. They were of excellent quality, and large size, especially Sandringham, The Queen, Mère de Ménage, Peasgood's Nonsuch, Tom Putt, Tower of Glamis, Cellini, Bramley Seedling, Warner's King, &c. (Silver Knightian Medal).

Collections of fruit also were from Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood Road, S.E. (Silver Banksian Medal). A collection of Onions from Mr. T. Wilkins, Inwood House, Henstridge (Silver Knightian Medal). A collection of Onions from Messrs. H. Cannell & Son, Swanley (Silver Banksian Medal). A collection of dried fruits and vegetables from W. A. Trotter, Esq., Broomperrow (Silver Knightian Medal); and a collection of Grapes grown without artificial heat, from Mr. J. Clarke, Albion Nursery, Farnham (Silver Banksian Medal).

Miscellaneous Vegetables included a collection of twelve varieties of large Onions, from Mr. Wilkins, which included Ailsa Craig, Wroxton, Sutton's A1, Cocoa Nut, Excelsior, Rousham Park Hero, and Royal Jubilee. Messrs. H. Cannell & Sons had also a collection in considerable heaps of Improved Wroxton, Ailsa Craig, Cannell's Globe, Somerset Hero, &c., also Shalots and other bulbs. Mr. Young showed a handsome white seedling Kidney Potato, Barton Court Perfection; and Messrs. Dobbie & Sons set up a handsome collection of vegetables including Champion Leeks, very fine selected red and white Celeries, Golden Ball Turnips, a beautiful sample of fine Parsnips, Beet, and other roots, and some admirable garnishing Parsley in pots.

Messrs. Alex. Cross & Sons, 19, Hope Street, Glasgow, had a collection of fruits, showing the effect of using their "Cross's Garden Fertiliser."

Mr. Jos. Fitt, Panshanger Park Gardens, had two bunches of Bananas, which were Culturally Com-

mended. Seedling Melons were shown by Mr. Owen Thomas, of the Royal Gardens, Windsor. E. Hart, Esq., Fairlawn, Totteridge, Herts (gr., Mr. J. Smith), and the Earl of Shrewsbury, Ingestre Hall (gr., Mr. Gilman). Tomatos were sent by Messrs. Carter & Co., Holborn, and by Mr. Jno. Allsop, The Gardens, Dalton Hall; and Messrs. Hazel Bros., 35, The Broadway, Crouch End, London. Mr. W. H. Divers, Ketton Hall, Stamford, sent a seedling Peach; and several exhibits of Apples from growers within the 4 miles circle, were Culturally Commended.

Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esher, had two good dishes of Peaches; and there were several seedling Peaches from Messrs. Robert Veitch & Son, Exeter.

COMPETITIVE CLASSES.

The fruit competition was well sustained generally, and an immense amount of produce was of first-rate quality. The weakest in this division were the Grapes and Pears, the latter being a little small.

In the first-class, that for a collection of twelve kinds of fruits, there was but one exhibitor, Sir J. W. Pease, Bt., Hutton Hall, Guisborough, Yorks (gr., Mr. J. McIndoe). The collection contained good Peaches, excellent Apples, a fair Melon, and average quality Grapes. The exhibit generally, though, was not quite up to Mr. McIndoe's usual standard, and a 2nd prize only was awarded. The same exhibitor, however, was 1st in the collection of six kinds, and in sharp competition. He had, of Grapes, Black Alicante (very fine), and Muscat of Alexandria; also Peaches, Nectarines, a Melon, and Williams' Bon Chrétien Pears. The 2nd place was taken by the Countess of Camperdown, Weston House, Shipston-on-Stour (gr., Mr. J. Masterson); his Muscat of Alexandria Grapes were good, and the collection was a good one. Ralph Saeyd, Esq., Keele Hall, Newcastle, Staffs. (gr., Mr. J. Wallis), was 3rd, and there were two other entries.

Messrs. De Rothschild, Gunnersbury Park, Acton (gr., Mr. G. Reynolds), were 1st for three bunches of Muscat of Alexandria Grapes, open only to amateurs, and obtained a Silver Cup, value £5, presented by the Turner Memorial Trustees. Mr. J. Masterson was 2nd; and Mr. Lewis Jordon, Holdenby House Gardens, Northampton, was 3rd. The Muscats, though good, were not exceptional.

For three bunches of Black Grapes (*amateurs*), a similar Silver Cup to that awarded in the preceding class was obtained by E. Miller Mundy, Esq., Shipley Hall, Derby (gr., Mr. W. Elphinstone), large in berry and bunch, and of good colour; Messrs. Rothschild were 2nd; and Mr. W. Messenger, Woolverstone Park Gardens, Ipswich, 3rd.

Messrs. Rothschild were 1st for three bunches of any white Grape other than Muscat, with Buckland Sweetwater; and L. J. Baker, Esq., Ottershaw Park, Chertsey (gr., Mr. T. Osman), was 2nd with Mrs. Pearson.

In the same class for black, other than Hamburgs (*amateurs*), C. Lee Campbell, Esq., Glewston Court, Ross, Herefordshire (gr., Mr. S. T. Wright), was 1st, with excellent Alicante; H. Tate, Esq., Park Hill, Streatham Common (gr., Mr. W. Howe), 2nd, also with Alicante; and Messrs. de Rothschild, 3rd, with Gros Maroc.

The next class was an open one for four dishes of Peaches, distinct, six fruits to a dish, and the 1st prize was obtained by J. T. Hopwood, Esq., Ketton Hall, Stamford (gr., Mr. W. H. Divers), who had Princess of Wales, Barrington, Sea Eagle, and Prince of Wales. They were very fine well-coloured fruits. Roger Leigh, Esq., Barham Court, Maidstone (gr., Mr. Geo. Woodward), was 2nd; and Sir Mark Collet, Bart., St. Clere, Kemsing, Sevenoaks (gr., Mr. R. Potter), 3rd, who showed a very fine dish of Exquisite.

W. K. D'Arcy, Esq., Stanmore Hall, Great Stanmore (gr., Mr. Wm. Tidy), had the best two dishes in the amateur class, with Late Admirable and Sea Eagle; Mr. McIndoe was 2nd, and Mr. Elphinstone, 3rd.

Messrs. de Rothschild had the best eight varieties of Grapes, two bunches of each (open), consisting of Chasselas Napoleon, Madresfield Court, Muscat of Alexandria, Black Hamburg, Trebbiano, Gros Maroc, Alicante, and Mrs. Pearson; C. Bayer, Esq., Tewkesbury Lodge, Forest Hill (gr., Mr. Bury), was 2nd; Mr. J. Wallis, 3rd.

The premier position for four dishes of Nectarines distinct, six fruits to a dish (open), was taken by Mr. J. McIndoe, who showed Byron, Pineapple, Spencer, and Humboldt; but in our opinion, they were inferior to the collection for which Mr. Geo. Woodward was awarded 2nd, these fruits being considerably larger and better coloured. They were

Stanswick Elruge, Rivers' Orange, Pitmaston Pine-apple, and Humboldt. Sir Mark Collet was 3rd.

In the class for two dishes (amateurs), Mr. W. H. Divers was 1st, with Spenser and Pine-apple, and Mr. J. Wallis 2nd. The two best Melons (amateurs), were staged by Mrs. McIntosh, Havering Park, Romford, Essex (gr., Mr. A. Ocock), who had one fruit of Countess, and a seedling. Mr. W. Messenger was 2nd, and Mr. J. Masterson, 3rd.

Mr. J. McIndoe had the best four dishes of Plums (amateurs), nine fruits to a dish, showing excellent Washington, Prince Englebert, Jeffersons, and Magnum Bonum; and Jno. Hargreaves, Esq., Maiden Erlegh, near Reading (gr., Mr. Thos. Turton), was 2nd. In the latter exhibit, Pond's Seedling was very fine. The only competitor in the class for a collection of Plums (open), was Mr. J. McIndoe, who staged a very fine lot, including a good number of varieties, and was awarded 1st prize.

For six dishes of Apples, distinct, six fruits to a dish (open), the best lot was from Mr. Geo. Woodward, who had fruits of excellent size and quality. They were Peasgood's Nonsuch, Emperor Alexander, Warner's King, New Hawthornden, Washington, and Lord Suffield. The 2nd place was well taken by Mr. Geo. Chambers, Beech Farm, Mereworth, Maidstone; and Viscountess Portman, Buxted Park, Uckfield, Sussex (gr., Mr. H. C. Prinsep), was 3rd.

Pears were shown in a class for three dishes, and the 1st prize was taken by the Earl of Cowley, Draycott House, Chippenham, Wilts (gr., Mr. J. Gibson), who had very large but green fruits of Pitmaston Duchess, Duchess of Angoulême and Beurré Clairgeau. Mr. Geo. Woodward was 2nd, his fruits were smaller but ripe, the varieties being Dr. Jules Guyot, Durondeau, and Williams' Bon Chrétien. Mr. J. Masterson was 3rd.

For a collection of hardy fruits (amateur), the best lot were sent by Mr. Geo. Woodward, who showed of Apples, Peasgood's Nonsuch, Northern Dumpling, Yorkshire Beauty, Stone's, Ribston Pippin; Pears, Triomphe de Vienne, Dr. Jules Guyot, and Pitmaston Duchess; also five dishes of Peaches, three dishes of Nectarines, and two dishes of Plums—a first-rate collection. Mr. McIndoe was 2nd, and he included other than those represented in the 1st prize collection, Apricots, Gooseberries, Red Currants, Cherries and Nuts; Mr. S. T. Wright was 3rd.

In the open class for a collection of Apples, Messrs. Geo. Bunyard & Co., Maidstone, took leading position, staging 120 varieties. The general quality was good, some varieties below average, and others very much beyond. Warner's King was a very strong dish, but Peasgood's Nonsuch was small, whilst Pott's Seedling is not quite up to first-class form this season. Golden Spire, Okera (a new Russian variety), and Ribston Pippin, were especially noticeable. The exhibit created an immense display, and the same firm took leading honours in a similar class at Birmingham on the same day, also staging 120 varieties there; the 2nd prize was obtained worthily by the English Fruit & Rose Co. (Cranston's Ltd.), King's Acre, Hereford, who had one hundred varieties and in good quality, and the 3rd position fell to Messrs. Paul & Son, Cheshunt.

The best three dishes of dessert Apples (to include Lady Sudeley) amateurs, came from Mr. Geo. Woodward, who had Washington, Lady Sudeley, and Ribston Pippin; and the same exhibitor was also 1st in a similar class for kitchen Apples, with large fruits of Peasgood's Nonsuch, Stone's, and Warner's King. Mr. Geo. Chambers was 2nd, and Mr. Thos. Turton 3rd.

Messrs. Banyard & Co. were the only exhibitors in the class for nine orchard-house trees in fruit, distinct varieties (open), but the plants were of good quality and well fruited.

The last competitive class was for a collection of orchard-house fruit (amateurs), Peaches and Nectarines excluded. The 1st prize lot shown by Mr. J. McIndoe, was of exceptional quality, and well deserved the premier position; the competition being rather keen. He had very fine Oranges, Lemons, also Apples, especially Gascoigne's Seedling, Figs, Plums, and Pears, also a dish of the edible Passiflora, and one of Guava. Mr. R. Potter was 2nd, and his collection was a good one, a dish of Beurré Baltet Pear was exceptionally strong; J. W. Melles, Esq., Sewardstone Lodge, Chingford, Essex (gr., Mr. J. Nicholson), was 3rd.

VEGETABLES.

The exhibits in this section were limited in number, but the quality was generally excellent, some indeed being first-class. In the competition for twelve distinct kinds, three competitors

showed in round baskets, and seriously injured what is usually regarded as effect in staging. Mr. Waite, gr. to the Hon. Colonel Talbot, Glenhurst, Esher, was placed 1st, his collection being in one large flat. It comprised very fine Early Rose Celery, Ailsa Craig Onions, Autumn Mammoth Cauliflowers, very handsome Student Parsnips, Intermediate Carrots, Snowball Turnips, Globe Artichokes, Glenhurst Favourite Tomatos, Pragnell's Beet, Satisfaction Potatos, Ne Plus Ultra Runner Beans, and Champion Leeks, altogether a capital lot. Mr. Wilkins, another champion grower, gr. to Lady Theodora Guest, Inwood House, Henstridge, had his exhibits in two smaller baskets, and included huge Ailsa Craig Onions, Giant White Celery, huge Satisfaction Potatos, Lyon Leeks, Ne Plus Ultra Peas, Perfection Beet; and Mr. Robert Watson, Lanark, N.B., whose collection was laid on the table, was placed 3rd. Only one exhibitor, Mr. C. Payne, gr. to W. A. South, Esq., Neasden, competed in the class for six kinds, his quality being moderate. Mr. Waite was again 1st in the class for six kinds, prizes given by Messrs. Jas. Carter & Co., all good things. Mr. Payne was the only other exhibitor. Mr. Waite was the only competitor with a collection of salads, having a big flat basket handsomely filled, and dressed with Celery, Cucumbers, Tomatos in variety, Radishes, Lettuces, various Beet, Mustard and Cress, Shalots, &c.

There were five competitors in the class for twelve dishes of Potatos, the 1st prize going to a well-known Kentish grower—Mr. Chopping, of Sittingbourne, who had beautiful samples of Satisfaction, Sutton's Seedling, Fidler's Monarch, Prime Minister, and Epicures' Delight, white; and Lord Raglan, and Mottled Beauty, purple blotched; Edgcombe Purple, and Herde Laddie, purple; Lillie Langtry, and Reading Russett, red. Mr. Waite was a very good 2nd, having clean samples of Reading Giant, Snowdrop, Sutton's Supreme, Cole's Favourite; Vicar of Laleham, Mr. Bresee, and others. Mr. W. Young, The Gardens, Barton Court, Berks, was 3rd. Mr. Chopping was again 1st, and Mr. Waite 2nd, for six dishes, the same kinds as mentioned being employed. This competition was for Messrs. Jas. Carter & Co.'s prizes. Five lots of three dishes of Tomatos were staged, all good, and all so greatly alike. The finest came from Mr. W. Howe, gr. to H. Tate, Esq., Streatham Common, who had Ladybird, Sutton's Perfection, and Silver's Invincible; Mr. Ryder, Northumberland Nursery, Orpington, was 2nd, with Hamgreen Favourite, Perfection, and Trophy; Mr. Tidy, gr. to W. R. D'Arcy, Esq., Great Stanmore, was 3rd with six of the largest and handsomest Onions of Deverill's strains. Prizes presented by H. Deverill, Banbury, Mr. Wilkins 1st with huge Lord Keeper, Mr. Waite coming 2nd, with smaller but very handsome Ailsa Craig, the requirements of the schedule evidently being found hard to fulfil. For Dobbie's Champion Leek, very liberal prizes being offered by Messrs. Dobbie & Sons, Rothsay, N.B., six fine lots were staged, Mr. D. Gibson, gr. to C. M. Dabs, Esq., Lymington, Ayrshire, was 1st, having splendid examples, blanching pure white, 12 inches long, and of good size; Mr. Findlay, Beaulieu, Hants, was 2nd; Mr. R. Watson, 3rd.

HORTICULTURAL APPLIANCES, BOILERS, GREEN-HOUSES, &c.

The exhibits under this head were arranged around the Hall, under the galleries, and considering that this is the first exhibition of just this character which has been held in this place, it must be pronounced that the various trades connected with horticulture, have supported the Royal Horticultural Society very well indeed. There was, it is true, space for many more exhibits, and had the exhibits been grouped *en masse*, a far more imposing display would have been made, but this was impracticable, and as it was, plenty of space was afforded for inspecting each stand.

Horticultural Erections and Heating Apparatus.—

Amongst the more practical exhibits were those of Messrs. Foster & Pearson, Beeston, Notts, who are well-known for the good quality of their work. They exhibit specimens of houses, well-constructed and arranged as regards the heating apparatus and ventilation. The Beeston "amateur's" house is rather excessive in width, making it awkward to reach the plants against the front lights from the central pathway, but this is a detail which might easily be remedied. The exhibit of a fruit-case is an excellent design for the purpose of protecting tender wall-fruits. Their cold-frames are, as regards arrange-

ment and structure, all that one can desire. Various patterns of boilers are shown both for large and small houses. One of the latter is in work, and shows effectiveness with economy in the use of fuel. The firm also exhibit their pattern of valves, which are great improvements as regards the ease with which the cleaning can be done, and in durability. An award of a Silver-gilt Flora Medal for general excellence was made, the house was Commended, and the frames Highly Commended.

Messrs. Messenger & Co., Loughborough, also exhibited well and extensively in this section. They had an erection wherein are shown different systems of ventilation and other interior arrangements. The side-ventilation, by means of a revolving screw, is one of the best systems of gearing yet brought out; it is self-locking in its working, it being impossible to shift the lights, yet the screw works with the greatest ease. The same adaptation is shown for top-ventilating gear. Another method of side-gearing is taken from the usual form of switch-handles of the points on railways, that is, with a spring; this is also a good plan. The wiring and arrangements for in-straining, as well as for tightening the roof, in place of the old tie-rods, are very light and effective. A slate-bed for houses is exhibited also; far more of this material should be used, being much cheaper in the end than wood. Award for this house and its arrangements, including heating arrangement, Silver-gilt Flora Medal.

Messrs. Sam Deards & Co., Harlow, exhibited their system of dry-glazing in operation, with water running down the roof, the house being at the same time light inside. They also showed their large coil boilers, which are powerful and effective. Another very useful arrangement was an adaptation of a self-feeding arrangement and coil to the interior of the "Prince" boiler, very serviceable for small cultivators and amateurs generally, economising fuel with the least amount of attention. This last-named boiler is an improvement upon Walker's slow combustion-stove, and a Silver Banksian Medal was awarded to it.

Heating by gas was shown in operation, and for small houses will, no doubt, be useful. Messrs. C. Toope & Son, Stepney Square, E., showed in this section several of their designs, which are of excellent make and finish; these received a Silver Banksian Medal for their practical utility. Messrs. Fenlon & Son exhibited their patent gas-boiler, in which rapidity of action and economy of gas are conspicuous, the arrangements for the former being excellent (awarded Silver Banksian Medal).

New Automatic Damper.—This exhibit, by Mr. C. Lascelles, 97, Fleet Street, E.C., was the only one of its kind; it is simple, ingenious in construction, and efficient in working. The expansion of the water in the feed-cistern, as it gradually increases in heat, causes the damper to close in a corresponding degree by means of a float on its surface, the temperature being furthermore regulated by a screw arrangement to adjust the damper. A Silver Banksian Medal was awarded to this novel exhibit.

Summer-houses, and seats of rustic make, were shown by Mr. G. W. Riley, Herne Hill, S.E. These are of first-rate make, strong, durable, and useful, and far better than formal buildings for the purpose. Awarded a Silver Banksian Medal.

In gardening implements, the "Standard" Manufacturing Company, Derby, received a Silver Flora Medal for further improvements in their tree pruners, which are both powerful and labour-saving, and for other exhibits of a similar kind, all of good workmanship.

Messrs. Clark & Co., Park Street, Islington, showed gas and oil heating stoves, useful in small plant-houses, but more so in seed shops and warehouses, or in offices and entrance halls; these are of upright construction, and occupy but little room. The judges Commended this exhibit.

Other exhibits in the foregoing sections comprised a number of small greenhouse erections in various patterns, with heating apparatus and frames as well, by Mr. W. Cooper, Old Kent Road; those for small growers and beginners are all one could desire. The Stott Patents (Barton House, Deansall, Manchester, John J. Scott, Secretary) are shown; these are so well known, being largely used in many gardens and nurseries, as to need no further recommendation. These implements bear on the face of them the stamp of first-class workmanship. Messrs. Newton & Co., Horticultural Builders, Hitchin, show their improvements in the erection of houses with steel roof-bars, blinds and shadings, the glazing of the roofs being without putty, the various arrangements being all of sound and durable make. A

section of a roof is shown, constructed of partly-bent sheets of glass, the top of the house consisting of ordinary flat panes, whilst the angle is got rid of by the use of bent-steel T sash-bars, and plates bent to fit them. It is light and strong, and elegant in design.

Miscellaneous exhibits of horticultural sundries were extensive and comprehensive. Messrs. Osman & Co. received a Silver Flora Medal for all sorts of accessories for the garden, chief amongst which were well-made implements of different kinds, light and strong boxes for parcel-post, improved iron stakes, as well as boxes for carrying cut blooms to exhibitions, and boards to arrange them on; a trap for catching wire-worms is of simple but sensible make; smaller sundries are also included, amongst which were a capital sample of Raffia, garden knives, &c. Messrs. H. & E. Albert, Gracechurch Street, E.C., showed their chemical manures, and results therefrom. Mr. J. T. Anderson, Commercial Street, E.C., had an extensive stand of sundries of all kinds, but more particularly samples of shadings of the best patterns, garden mats, which are an important part of the business, Bamboo stakes, garden netting, sacks, and bags, with implements.

Insecticides and Manures, Twines, and Cords.—Messrs. Coates & Everett, Tanners Hill, S.E., had an exhibit of their Fur-line Anti-incrustator, which should prove most valuable in the case of furring in pipes where the water is hard. Mr. W. Colchester, Ipswich, had samples of Ichthemio guano, an excellent fertiliser, in which the high percentage of nitrogen is the chief constituent. Messrs. Cooper, Dennison, & Walkden, St. Bride Street, E.C., showed "Improved Paper, Fruit, and Flower Baskets" in variety; useful and light articles as well as strong. Messrs. Corry & Co., Finsbury St., E.C., had a large number of horticultural exhibits of all kinds in which garden tools, insecticides, manures, and stakes are the chief features, making in all an excellent display. Messrs. A. Cross & Son, Glasgow and Mark Lane, showed their fertilisers, which are proving to be amongst the best (J. H.) in present use. They also show their insecticides, that for mealy-bug being most effectual.

Another exhibit here was composed of spray syringes, which effect a great saving in the liquid when using various compositions. Mr. W. G. Davis, 104, High Holborn, W.C., showed chemical and other manures, which as regards their efficacy, were exemplified by specimens of growth shown side by side.

Mr. J. George, horticultural sundriesman, Putney, had a large stand, on which were shown excellent examples of his Mushroom spawn, of Orchid and other peats of the best qualities; Thomson's Vine Manure, for which he is the London agent, and fumigating with other well-tried insecticides, also everyday garden requisites. Messrs. Sly, Dibble & Co., Colonial Avenue, Minories, E.C., had a large stand of sundries in variety, amongst which are artificial wreaths; these do not encourage floriculture, unless it be to create a desire for real flowers in their stead. Messrs. W. Wood & Son, Wood Green, N., had a large and showy stand, over which was erected a light framework of Bamboos, to show their utility other than as flower-stakes, of which also large quantities in different sizes are shown; wood-wool for packing purposes was to be seen here in the best quality; the firm also staged their manures, which are so well-known in gardens; peat of the very best quality and variety, and insecticides also were included, the whole an excellent exhibit. Mr. W. Cooper had also an exhibit of sundries, comprising useful requisites for the garden. All important for the garden was the disinfecting Compound Liquid of Messrs. B. Lawes & Co.

ROYAL SCOTTISH ARBORICULTURAL.

(Continued from p. 246.)

The New Forest.—Early on Thursday morning the steam-ferry conveyed us over Southampton Water to Hythe, where carriages were in waiting to take us over the wide open moor of Beaulieu Heath to the pretty village of Beaulieu, and on to the New Forest. Here the long lamentations of the proverbially thrifty began, the contemplation of the vast area of waste land, all of which might at least bear Scots or Douglas Fir, being provocative of much strong language. The quaint village of Beaulieu, at the head of the estuary of the Exe, which has a course of $9\frac{1}{2}$ miles to the Solent, with the picturesque ruins of the Cistercian Abbey, temporarily changed the current of our thoughts. Round the green turf of the cloister garth, the ruined walls presented a charming aspect. Clematis, Myrtle, and Magnolia,

all in full flower, clustered over crumbling white Binestead stone from the Isle of Wight, and slender shafts from that of Purbeck. The huge rough timbers of the open roof of the great dormitory, supposed to be Chestnut, revived a controversy broached on the previous day at Windsor; and, after inspecting the site of the great Minster Church, in a visit to the museum in the ambulatory, sharp eyes detected some of the original resin adhering to the Purbeck marble matrix of a monumental brass. The refectory, now the parish-church, is noteworthy from the fine stone-pulpit with a groined arcaded approach, with Purbeck shafts, and from its gracefully-proportioned lancet windows.

Re-joining our carriages, and regaled by Apples kindly given us by Mr. Phillips, of Penlee, we then entered the New Forest, driving due northward to Lyndhurst. Each member of the party had been previously provided with a copy of W. H. Rogers' excellent Guide, and with a paper entitled "A Brief History of the Arboriculture of the New Forest," by the deputy-surveyor, the hon. Gerald Lascelles, from which we take the liberty to make somewhat copious extracts.

The Forest covers 92,345 acres, but this includes 27,658 acres of private property, leaving 64,737 acres, or over one hundred square miles of Crown land. Of this, 40,478 acres, nearly two-thirds of the whole, is open heath and pasture, and of this Mr. Lascelles writes: "About 30,000 acres were described in 1849, by one of the most eminent firms of land agents in this country, as being 'unfit for either agriculture, growth of timber, or pasturage.' If this description was applicable at that date, it is infinitely more so now, when prices for all kinds of farm and forest produce are at their lowest ebb." If at their lowest ebb, it may be urged that prices must rise; but if not, prices do not affect the actual fertility of the land (apart from the question of immediate monetary return); whilst it is noteworthy that as to the worthlessness of these 30,000 acres, Mr. Rogers adds the saving clause "except for the growth of Scotch Fir." Mr. Rogers speaks of "the ancient natural woods;" but, though no one seeing the barren sands and gravels can believe the legend that the Conqueror laid waste a fertile agricultural district to make a woodland, it may well be doubted whether any "natural woods" now remain in Hampshire. Mr. Lascelles attributes all the old woods to early enclosure, which (without stating his authorities) he states was known as "encoppicing." The deer and cattle were, he says, excluded by a fence, natural regeneration relied on, and the right of cutting the underwood leased for a term of years. All timber was taken for the navy, and no "shrouding" (or lopping) or cutting "by the ground" (or coppicing) was allowed to be done by the tenant. James I., our first Scottish king, ordered a survey of the Forest in 1608, when 123,927 trees fit for naval purposes were found, containing 197,405 loads of timber. In 1707, after a century of neglect and waste, only 12,476 such trees remained, containing 19,873 loads. In 1698, the first Enclosure Act was passed, apparently an excellent measure, by which it was provided that 200 acres should be enclosed annually for twenty years, and that as soon as any of the land thus enclosed was safe from damage by cattle, it should be thrown open, and the like area enclosed in its stead. Pollarding was then abolished. Between 1761 and 1787 nearly £88,000 worth of timber was cut in the Forest; and in 1776, though only tentatively at first, the Scots Fir was introduced, Ocknell clump being planted on the worst soil and with the worst exposure in the Forest.

Under the influence of the great wave of utilitarian enclosures of waste land then prevailing, the Act known as the Deer Removal Act was passed in 1851, by which some 32,000 acres in all were to be enclosed for timber, in exchange for the cessation of the exhaustion of the commoners' pasturage by the protected deer. "The manner in which these enclosures were carried out gave," we are informed by Mr. Rogers, "great dissatisfaction. It was the custom when a tract was selected for enclosure to first clear it 'smack smooth' of every tree of whatever kind that might be upon it, and then to plant it, either with Firs, or with Oaks and Firs in alternate rows. The commoners complained that they were unfairly (!) deprived of the best grazing ground for their cattle, and every lover of the picturesque, and student of nature, shuddered with horror at learning that so quickly were the most beautiful old woods disappearing, that in twenty-five years nearly half of them had been cut down, and that so extensive had the votes of enclosure become, that any day, at one vote, all the rest might be con-

demned to the axe." To this Mr. Lascelles replies that the felling was in part due to no timber having been supplied to the navy since 1833; that the plantations then felled had been made in William III.'s time, expressly to be cut when mature for the navy; that every wood felled "was replaced by a young plantation, which is in most cases now producing a crop of Oak that, at an equal age, will vie with, or surpass, the older wood which it has replaced;" and that the commissioners were bound to grow wood for naval purposes, and therefore to select the best soil for that purpose.

These arguments seem to us unanswerable. The unpicturesque character of regular plantations with coniferous nurseries is only temporary; and, if there is not an unbroken succession of Oak and Beech plantations, in the full beauty of approaching maturity, it is owing to past neglect or irregularity of management, the only sound method of remedying which was that then adopted.

The disuse of Oak in naval architecture, and the increased æsthetic value of open spaces and picturesque woodlands, did undoubtedly to some extent justify the reaction which culminated in the formation of the New Forest Association in 1867, the Select Committee of 1875, and the New Forest Act of 1877; but this Act, under which the Forest now suffers, was based on hopelessly false principles, and is utterly unworkable. It requires "that the ancient ornamental woods and trees of the Forest shall be preserved, and * * shall remain open and unenclosed," and at the same time "that no fresh land shall be taken for enclosure." This is to require an impossibility. Planting and clearing being alike practically put an end to, the beautiful old woodlands, which are certainly artificial in origin, and not primeval or natural forest, are in the course of nature falling into decrepitude and decay, whilst no provision is allowed for their renewal. "Arboriculture is," as Mr. Lascelles says, "for the present dead, in the chief national forest."

While we were arriving at these somewhat depressing conclusions our vehicles were slowly traversing the rough road past the barrows that mark the prehistoric occupants of Beaulieu Heath, and past the lawn-bordered woodland, known as the Bishop of Winchester's purlieu, which tradition relates to have been the guerdon of a crawl round the estate performed by an ancient holder of the see in a single night, on to the central village of Lyndhurst. Here we were met by Mr. Lascelles, and sat down to lunch in the New Forest Picture Gallery, under the chairmanship of Colonel Bailey, the ancient Verderer's Hall not being large enough to accommodate us.

The hall was, however, visited after luncheon, and the ancient axe-hewn prisoners'-dock, and the celebrated "Rufus' stirrup" were duly inspected. The latter is a large and somewhat singularly shaped stirrup, probably in reality of Tudor date, which was long used as a gauge for small dogs which might be kept in the Forest, as not harmful to the deer. Any dog unable to pass through the stirrup was "expedited," i.e., had the ball of the foot cut off, to prevent its doing any mischief. The Hall is part of the Queen's House, the official residence of Mr. Lascelles as deputy-surveyor.

Having rejoined our carriages, we soon dismounted again for a rapid walk across Cuffells, the estate of Reginald Hargreaves, Esq. Here the first tree of interest was a fine specimen of the Luccombe Oak. A well-grown Redwood (*Sequoia sempervirens*) and a Wellingtonia, over 60 feet in height, and stripped artificially of its lower branches, as is done by Nature in the closer quarters of the Yosemite Valley, next attracted attention. Crossing the terrace, where the house-front was adorned with fine Myrtles, Lemon Verbena (*Aloysia citrodora*), and the less common *Edwardsia grandiflora* of New Zealand, a magnificent Douglas Fir was the next stopping-place. It proved to be 10½ feet round and 80 feet in height. Noting that here the Cherry Laurels were as much laden with ripening fruit as are almost every species of tree during the present season, we drove on, passing Bank, the residence of the novelist universally known as Miss Braddon, and Alum Green, to the old toll-gate at the lovely stream known as Highland Water. Soon after crossing this we again had a short walk into the enclosure in which stands the celebrated Knightwood Oak. This magnificent tree, still in vigorous growth, girths 19 feet 8 inches, at 5 feet from the ground, and besides several gigantic erect limbs, for it is a pollard, sends out one horizontally to a distance of about 24 yards. Crossing the high road, we then drove through the interesting enclosures known as Rhinefield, where the Forest nurseries were situated, and

where many fine ornamental Conifers, such as Silver Firs, Pinsapo, Douglas Fir, and others have been planted experimentally. These fine trees amidst the Rhododendrons and Barberry bushes, bright with fruit, were interesting as trees; but had an essentially exotic and garden aspect, rather than that of a forest plantation.

Retracing our steps through a part of Knightwood enclosure (successfully planted with Pinus Laricio, and passing some newly-planted Scots Firs, notched in on the site of a recent fire, which in this dry season had largely fallen victims to the Pine-weevil), we reached the two fine Beeches of Mark Ash. One of these giants is quite dead, and the other seems very nearly so; and some conversation arose as to how far this was merely the effect of old age, and how far it was that of starvation in the poor soil, intensified (as this evil influence is) by a carriage-track beneath the tree. The appearance and slaughter of one of the adders which abound in the forest created a diversion, and shortly afterwards we reached the yet more interesting district of Bolderwood. Here there was a rush to the woodman's cottage for some water, the heat being very trying, and, though all the party saw the well-known "King" and "Queen" Oaks, the fine Yews, and some of the other Conifers, some of them got separated, and lost the sight of some specimens of Cupressus Lawsoniana, really worthy of consideration as timber-trees. The King and Queen Oaks are merely wrecks, though once grand trees; one of the Yews is 16 feet in girth; the lofty Silver Firs form one of the landmarks of the Forest, and there are also some shapely specimens of Abies nobilis.

This concluded the work of the day, as the party had a long return-drive to accomplish, through Emery Down and Lyndhurst, back to their headquarters at Southampton.

(To be continued.)

SHROPSHIRE HORTICULTURAL.

AUGUST 23, 24.—*Cut Flower Section*.—The cut-flower classes formed a very attractive and important feature at the above, and of which a report of the principal plant, fruit, and vegetable classes was given in our last issue.

Roses.—Messrs. Jas. Cocker & Sons, Aberdeen, were 1st for a collection of Roses, staging a good all-round lot of blooms for the season; Messrs. Croll, Dundee, were 2nd. Only two lots were shown in this class. The same firms occupied the like position in the class for twenty-four single blooms.

Dahlias made a grand show in themselves, especially in the classes confined to nurserymen. Prizes were offered for collections of all sections of the Dahlia to cover a space of 15 feet by 6 feet, and several good lots were staged. Messrs. Keynes, Williams & Co., were well ahead, both in quality of blooms staged and the artistic style in which they were set up. In the back-ground were five pyramids, with the blooms stuck thinly into moss with intervening upright pieces of cork, in two or three heights, draped with Ampelopsis, and having a few blooms of the single Dahlias stuck therein, with stands of show, fancy, Cactus, &c., in the front, edged with cork. The Society's Silver Medal was awarded to the 1st prize collection. Mr. George Humphries Chippenham (who was 2nd in the preceding class), was 1st for twenty-four Dahlias in variety; Messrs. Harkness, Bedale, being 2nd.

Gladiolus.—Several good collections in variety were staged, each collection covering a length of staging 24 feet by 6 feet.

Messrs. Harkness & Sons were a good 1st, their spikes of blooms being very fine indeed; Messrs. Jones and Sons, Shrewsbury, were 2nd. Messrs. Harkness were also to the front for eighteen spikes.

Collections of Hardy Border Flowers made a grand display.

Messrs. Cocker & Sons were a good 1st, staging grand exhibits, the flowers being fresh and well-developed, and the colours and sizes well arranged, *Lilium longifolium*, *L. giganteum*, *Achillea ptarmica* plena, and the heath-like flowers of *Veronica longifolia rosea* showed to advantage. Messrs. Harkness & Sons, Laxton Brothers, Bedford, Dicksons of Chester, Biddle & Co., Loughborough, following in that order, a couple of extra prizes having been awarded.

Carnations.—Collections of Carnations were shown under the same conditions as indicated in preceding classes, by Mr. M. Campbell, High Blantyre, N.B., Messrs. Laing & Mather, Kelso, and Mr. John Forbes, Hawick, N.B., who took the prizes in that order.

Bouquets.—Prizes (and Silver Medal) were

offered for ball and bridal bouquets, one of each. 1st, Messrs. Jenkinson & Son, Newcastle Staffordshire. The exhibits were shown in vases about 2 feet high, with fine spikes of *Odontoglossum crispum* hanging over down to the staging, the composition of the arrangements consisting of *Phale-nopsis amabilis grandiflora*, *Epidendrum fragrans*, &c. Messrs. Perkins (Coventry) were a capital 2nd.

In the class for a special floral display, some grand arrangements were made, long spikes of *Odontoglossum crispum* being freely employed, and with excellent effect. In this class a Gold Medal went with the 1st prize.

Messrs. Perkins' 1st prize arrangement (collection of a series of floral devices, it might be called) was a most artistic piece of floral workmanship; Messrs. Jenkinson & Son were 2nd, and Messrs. Jones & Sons, and Messrs. Phelps & Co., Cardiff, were placed equal 3rd in this fine class.

The exhibitors in most of the above-mentioned classes were also successful in several other classes of less importance.

GARDENING AND FORESTRY EXHIBITION.

Gladiolus and Dahlia Show.

AUGUST 23, 24.—The large marquee was well filled on this occasion with exhibits of unusual excellence. As at previous shows, the miscellaneous productions formed a large feature in the show.

Gladiolus.—In the large class for 100 spikes of Gladiolus, Messrs. J. Burrell & Co., Cambridge, were the only competitors, but their exhibit could hardly have been beaten for general excellence. The spikes were of extra vigour and length, and the varieties quite up to date, many of their own seedlings being very prominent. The best of the named kinds were Castilda, pale sulphur with maroon feathering; Tessa, bright salmon-pink; Muriel, dark red with white centre; and Fiametta, soft pink—a lovely shade. Other good ones were Baroness Burdett Coutts, Atlas, Iolanthe, Conquerant, and Pasteru.

Mr. D. Whitlan, Brechin, Scotland, was first for twelve spikes in the amateurs' class, the finest being Pyramid, Soleil Couchant, and Enchantress, the whole being a capital exhibit.

Dahlias.—For twenty-four show and fancy Dahlias, Mr. Mortimer, nurseryman, Rowledge, Farnham, was placed 1st; his finest flowers were Mrs. Saunders, John Walker, Muriel, Major Bartelott, Buttercup, David Saunders, Nugget, and Maud Fellowes; Mr. Chas. Turner, Slough, was a very close 2nd, his best blooms being Colonist, J. Bennett, Mrs. Slack, Prince Bismarck, and Primrose Dame. These two exhibits were remarkably even and close.

Mr. Vagg, gr. to J. T. Theobald, Esq., M.P., Bedford, Havering, Essex, was 1st for twelve varieties in the amateurs' class with compact blooms, the best being Prince of Denmark, James Cocker, and Rev. J. B. McCamm; Mr. Ocock, gr. to Mrs. McIntosh, Havering Park, Romford, being an excellent 2nd, a fine bloom of Harry Keith being of deep colour.

The best lot of Cactus and decorative varieties (nine varieties) in a strong class, was that shown by Messrs. J. Cheal & Son, Crawley; these were of first-class quality, the finest being Countess of Gosford, Kaiserin, Bertha Mawley, and Duke of Clarence, all new kinds. Mr. W. Seale, Vine Nursery, Sevenoaks, was a good 2nd; the finest here were Kaiserin and St. Catherine.

Mr. Seale was 1st with an excellent exhibit of Pompons, in twelve varieties, the flowers of medium size but of capital quality; the finest of these were Hilda, Whisper, Lella, Red Indian, Lilian, and Eva. Mr. Charles Turner was 2nd, but almost equal to the winner: the finest here were Fairy Tale, Eric, Irene, Ariel, Darkness, and Rowena; also a rich orange, paler at base of petals. This forms a dozen of the best Pompon or garden Dahlias.

Messrs. J. Cheal & Son were 1st for twenty-four single kinds, with a superior exhibit, the best being Aurora (new, orange-scarlet and buff), The Bride, Eclipse, W. C. Harvey, Miss Linnaker, and Lowfield Beauty; Mr. Seale was 2nd.

Asters were poor, and need no further comment, the season being against them.

Fruits.—In the class for hardy fruits, Mr. McIndoe, gr. to Sir J. Pease, Bart., Hutton Hall, Yorks, was 1st, with very fine produce, the dishes of Souvenir du Congrès and Pittaston Duchess Pears being extra good; Cox's Pomona Apples, Elrune Nectarines, good Peaches, Apricots, and Plums, all of

the best quality. Mr. Wythes, gr. to the Duke of Northumberland, Syon House, was an excellent 2nd, the finest dishes being those of Morello Cherries, Peaches, Nectarines, Pears and Apples, with good Plums. (This latter exhibit was strictly within the wording of the schedule, as intended by the committee, outdoor fruits being intended, whereas in the 1st prize lot were some probably from orchard-house trees, the Pears in particular).

Miscellaneous exhibits came from various sources. Messrs. W. Paul & Son, Waltham Cross, were awarded the Gold Medal for a fine group of fruit trees in pots bearing well, also of dishes of Apples, &c., in good variety, and a fine lot of autumnal Roses. Messrs. Kelway & Son, Langport, staged a large assortment of Gladioli, in excellent style and variety of colours; also of Gaillardias, Asters, Cannas, and hardy herbaceous flowers. Mr. Wythes had well-grown healthy plants of Nepenthes, including N. Mastersiana X, N. Dicksoniana X, N. Curtisii, and other rare kinds; good Crotons, well coloured, were included. Mr. Hudson, Gunnersbury House, showed fine specimens of scented-leaved Pelargoniums.

A large collection of Melons came from Mr. T. J. Stacey, Caversham, Reading; of Apples and Pears from Messrs. Spooner & Sons, Hounslow; and Peaches and Nectarines from Mr. Rickwood, gr. to Lady Freake, Twickenham; whilst Messrs. Barr & Son had a large assortment of hardy flowers; and Mr. Salmon, West Norwood (an amateur grower), an excellent exhibit of garden flowers. Several other smaller exhibits were staged.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 1, 1893.		Total Fall since Jan. 1, 1893.	
	Above (+) or below (—) the Mean for the week ending August 26.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 1, 1893.	Below 42°, difference from Mean since January 1, 1893.	More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1893.
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.			
0	2 + 95	0	+ 552	— 57	6 + 148	23.8	28	25	
1	1 + 103	0	+ 355	— 21	5 + 122	16.5	41	33	
2	3 + 125	0	+ 413	— 62	2 — 104	13.1	45	37	
3	2 + 134	0	+ 500	— 37	1 — 101	12.4	48	44	
4	2 + 128	0	+ 635	— 47	2 — 100	12.5	57	42	
5	2 + 144	0	+ 544	— 43	1 — 95	12.3	52	46	
6	2 + 111	0	+ 495	— 63	4 + 119	22.7	49	37	
7	2 + 128	0	+ 665	— 91	0 aver	108	16.8	47	37
8	2 + 135	0	+ 675	— 70	2 — 99	18.9	61	48	
9	1 + 107	0	+ 553	— 104	4 + 130	20.9	43	32	
10	1 + 118	0	+ 609	— 109	3 + 116	19.9	49	36	
* 3 + 156	0	+ 768	— 52	1 — 103	14.1	55	57		

The districts indicated by number in the first column are the following:—

0, Scotland. N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 26, is furnished from the Meteorological Office:—

"The weather during the earlier part of this period was very unsettled in the western and northern parts of the kingdom, and rain fell daily; in the more

southern and eastern districts the conditions were generally fair and dry, although slight rain was experienced during the earlier part of the time.

"The temperature continued to decrease, and was much lower than that of the preceding week, but was still above the mean, the excess ranging from 1° in Ireland and the east of Scotland, to 3° in 'England, N.E.,' and the Channel Islands. The highest of the maxima were recorded on the 20th, when they ranged from 79° in 'England, E.,' and 78° in 'England, S.,' to 69° in 'Scotland, N.,' and 'Ireland, S.,' and to 68° in 'Scotland, W.' The lowest of the maxima were registered during the middle part of the week in Scotland, but at the end of the week in most parts of England and Ireland; they were much lower than any recorded of late, ranging from 40° to 41° in Ireland, from 42° to 49° in Scotland, and from 41° to 49° in England. In the Channel Islands, however, the thermometer did not fall below 56°.

"The rainfall exceeded the mean in Ireland and Scotland, and just equalled it in 'England, N.W.,' in all other districts the fall was slightly less than the normal.

"The bright sunshine again exceeded the mean, the percentage of the possible duration ranging from 61 in 'England, S.W.' 57 in the 'Midland Counties,' and 56 in the 'Channel Islands,' to 41 in 'Scotland, E.,' and to 28 in 'Scotland, N.'"

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

CONIFER QUERIES.—What was the tree called the "China Fir" in Miller's Dictionary, ed. 8?

"GARDENERS' CHRONICLE," June 23, 1883.—Can some reader oblige a fellow-reader with a copy of the *Gardeners' Chronicle* for the above date, and which is now out of print? Address the Editor.

ERGOT OF WHEAT, BARLEY, OR RYE.—Mr. F. W. Burbidge, 91, Haddington Road, Dublin, would be grateful for fresh specimens of ergot for botanical and museum purposes, as growing on the inflorescence of any species of Grass or corn.

MARKETS.

COVENT GARDEN, August 31.

LARGE quantities of Apples and Plums have reached our Market during the week; many of the former being drops, and the latter coming very ripe after the scorching heat of the previous fortnight. Prices for which, although very low, have been made with difficulty. *James Webber, Wholesale Apple Market.*

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Arum, per doz. bl.	2 0-4 0	Orchids:—	
Aster, dozen bun.	3 0-6 0	Cattleya, 12 blms.	6 0-12 0
Aster (French), bun.	0 9-1 3	Odontoglossum	
Bouvardia, per bun.	0 6-1 0	crispum, 12 blms.	2 0-6 0
Calceolaria, doz. bun.	4 0-6 0	Pelargoniums, scar-	
Carnation, doz. bun.	4 0-9 0	let, p. 12 bun.	3 0-6 0
—dozen blooms	1 0-3 0	—12 sprays	0 6-0 9
Cornflower, 12 bun.	1 0-2 0	Poppy, doz. bunches	1 6-4 0
Eucharis, per dozen	3 0-4 0	Primula, dble, p. bun.	0 6-1 0
Gardenia, per dozen	2 0-4 0	Pyrethrum, 12 bun.	2 0-4 0
Heliotrope, 12 sprays	0 3-0 4	Roses, doz. bunches	3 0-8 0
Lilium lancifolium,		—Tea, per dozen	0 6-2 0
p. doz. blooms	2 0-4 0	—coloured, dozen	2 0-4 0
—Harrisii, p. doz.	2 0-5 0	—yellow (Maré-	
Maiden Hair Fern,		chals), per doz.	1 6-6 0
12 bunches	4 0-6 0	—red, per dozen	1 0-1 6
Marguerite, 12 bun.	1 6-3 0	Stocks, per bunch	0 4-0 6
Mignonette, 12 bun.	2 0-4 0	Sunflower, various,	
Myosotis, 12 bunches	2 0-3 0	dozen bunches	2 0-6 0
Peas, Sweet, various,		Sweet Sultan, 12 bun.	2 0-4 0
doz. bunches	3 0-6 0	Tuberose, 12 blms.	0 4-0 6
Pansy, per doz. bun.	1 0-2 0		

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Adiantum, per doz.	6 0-12 0	Heliotrope, per doz.	4 0-6 0
Aspidistra, per doz.	15 0-30 0	Hydrangea, per doz.	12 0-24 0
—specimen, each	7 6-21 0	Ivy Geranium, doz.	4 0-8 0
Asters, dozen pots	4 0-8 0	Lilium Harrisii	18 0-24 0
Balsams, per doz.	4 0-6 0	—lancifolium, dz.	12 0-18 0
Campanula, per doz.	6 0-12 0	Lobelia, per doz.	3 0-8 0
Cockscombs, per doz.	4 0-6 0	Marguerite, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, per doz.	
Dracæna, each	1 0-5 0	—pots	4 0-6 0
Ferns, various, doz.	4 0-9 0	Nasturtiums, p. doz.	4 0-6 0
Ferns, small, per		Palms, various, each	2 0-10 0
100 ...	4 0-6 0	—specimens, each	10 6-84 0
Ficus elastica, each	1 6-7 6	Pelargonium, p. doz.	6 0-12 0
Foliage plants, doz.	12 0-42 0	—scarlet, p. doz.	3 0-6 0
Fuchsia, per doz.	6 0-9 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Apples, per bush.	1 0-6 0	Peaches, per doz.	1 0-6 0
Cobs, per 100 lb.	30 0-...	Pine-apples, St. Mi-	
Grapes, per lb.	0 6-3 0	chael ...	2 0-5 0
Lemons, per case	18 0-30 0	Plums, p. half-sieve,	1 3-4 0
Oranges, per case	20 0-30 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d.	s. d.	s. d.	s. d.
Beans, French, lb.	0 6-...	Mushrooms, punnet	2 0-...
Beet, red, per dozen	2 0-3 0	Mustard and Cress,	
Carrots, per bunch	0 4-0 6	punnet ...	0 4-...
Cauliflowers, each	0 3-0 6	Parsley, per bunch	0 3-0 6
Cucumbers, each	0 2-0 6	Shallots, per lb.	0 6-...
Endive, per dozen	2 0-3 0	Tomatoes, per lb.	0 6-0 8
Herbs, per bunch	0 9-1 0	Turnips, per bunch	0 4-0 6
Lettuces, per doz.	1 6-2 0		

POTATOES.

Arrivals are still very heavy and demand limited, except for finest samples, which realise 4s. 6d. to 5s. Ordinary samples hard to clear, except at very low prices. *J. B. Thomas.*

SEEDS.

LONDON: August 30.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report an improving demand for seeds required for present sowing. Trifolium, both English and foreign, is getting into comparatively narrow compass; fine samples are now obtainable at tempting rates. Winter Tares are hard to buy, and hard to sell; the inquiry for them is for the moment small. Low prices prevail for the new Essex Giant Seed Rye. As regards Mustard-seed, the tendency continued downwards. Rapeseed keeps exceedingly reasonable. The market for Canary-seed is steadier. There is no change in Hempseed. Blue Peas go cheaper. Choice Haricot Beans are now obtainable for very little money. Linseed is unaltered.

FRUITS AND VEGETABLES.

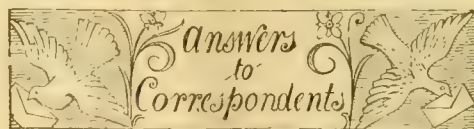
BOROUGH: August 29.—Quotations:—Cabbages, 5s. to 8s. per tally; Parsley, 1s. 6d.; Carrots, 3s. to 4s.; Turnips, 4s. to 5s. per dozen bunches; Onions, 5s. to 5s. 6d. per cwt.; Plums, 1s. 6d. to 2s. 6d. per half-sieve; Apples, 6s.; Pears, 2s. 6d. to 5s. per bushel.

PITFALFIELDS: August 29.—Quotations:—Cabbages, 5s. to 8s. per tally; Turnips, 4s. to 5s.; Carrots, 3s. to 4s. per dozen bunches; Onions, 5s. to 5s. 6d. per cwt.; Apples, 2s. 6d. to 6s.; Pears, 2s. 6d. to 3s. per bushel; Plums, 1s. 6d. to 3s. 6d.; Damsons, 1s. to 1s. 9d. per half-sieve.

STRATFORD: Aug. 29.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done at the undermentioned quotations:—Cabbages, 4s. to 6s. per tally; Collards, 3s. to 5s. do.; Cauliflowers, 1s. to 1s. 6d. per dozen; do., 4s. to 7s. 6d. per tally; Turnips, 3s. to 4s. per dozen bunches; Carrots, household, 50s. to 80s. per ton; Mangels, 32s. to 34s. do.; Onions, Dutch, 4s. 6d. to 5s. per bag; do., Port, 7s. to 8s. per case; Apples, English, 1s. 6d. to 4s. per bushel; Pears, English, 2s. 6d. to 5s. do.; Plums, 2s. 6d. to 4s. do.; do., 1s. 9d. to 2s. 3d. per half-sieve; Tomatoes, English, 3d. to 4d. per lb.; Grapes, 6d. to 8. per lb.

FARRINGTON: August 30.—Quotations:—Cabbages, 5s. to 8s. per tally; Carrots, 3s. to 4s.; Parsleys, 6d.; Turnips, 4s. to 5s., per dozen bunches; Onions, 5s. to 5s. 6d. per cwt.; Beans, 2s. 3d. to 2s. 6d. per half sieve; Marrows, 1s. 6d. per dozen.

FARRINGTON: Aug. 31.—Quotations:—Apples, 3s. per bushel; Pears, Hazel, 4s. do.; Williams, 6s. do.; Tomatoes, 4d. per pound; Melons, 5s. 6d. per case; Walnuts, 4s. per pot; Grapes, Lisbon, 11s. per box.



ACACIAS: *V. & Co.* How could you mistake the Acacias of Australia and the Riviera for the Robinias or false Acacias of the U.S.? *Clethra tomentosa* is *C. alnifolia*.

EXHIBITING BEANS: *M. H.* It is not usual to pit kidney or French Beans against Runner Beans. These are shown in separate classes.

EXHIBITING FRUIT: *A., Devon.* If the schedule says nine varieties, but not more than two distinct varieties of any one kind of fruit, it would be allowable to show two dishes of Peaches or two of anything else, provided these were different varieties. We should suppose that the exhibitor who showed nine kinds of fruits would, other points being equal, beat the exhibitor who showed fewer kinds.

FUNGI ON MUSHROOM BED: *F. B.* The specimens are fragile, and so broken up in transmission, that they cannot be identified. Seem to be a species of *Hypholoma*, not edible, but probably not poisonous. Not developed from the Mushroom spawn, but independent. Other species sometimes take possession of Mushroom beds, because the conditions are favourable. The information given is so meagre that we cannot advise what to do.

If only a few clusters appear, they are better removed at once; but, if the whole bed is appropriated by the strangers, then the bed will have to be sacrificed, and entirely cleared away, or they will establish themselves permanently. *M. C. C.*

LAPAGERIA: *Faversham.* A matter of taste. Some people would admire it, and for variety's sake, it is certainly worth propagating.

MELON ROOTS: *A. D.* A bad case of eel-worms, so often described and figured. There is no cure, but burn all the plants, turn out the soil, and start afresh.

MUSHROOMS: *J. H.* The specimen had decayed quite beyond recognition. Anything of this nature should be packed when quite dry, and it is always best to send them in the middle of the week. These had been delayed owing to Sunday intervening.

NAMES OF FRUITS: *J. F.* 1, Not recognised; 2, Calville St. Sauveur; 3, Lord Derby; 4, Pear Williams' Bon Chrétien; 5, Decayed.—*R. M. W.* 1, Hawthornden; 2, Scarlet Nonpareil; 3, Claygate Pearmain; 4, Cellini; 5, Cat's-head; 6, Golden Noble.—*Webb & Brand.* 1, Alfriston; 2, Gloria Mundi.—*W. P.* 2, Peach Barrington; 1, Was crushed, but probably same as No. 2; Pear Monsallard.—*W. A.* 1, Lord Derby; 2, Hawthornden; 3, New Hawthornden; 4 and 5, Kerry Pippin; 6, Braddick's Nonpareil. [A number are unavoidably held over until next week. Ed.]

NAMES OF PLANTS: *W. S.* *Miltoia Clowesii*,—*J. D.* *Saccolabium Blumei*, now placed under *Rhynchosytleis*.—*W. A. C.* *Conoclinium ianthinum*.—*T. M.* 1, *Chimonanthus fragrans*; 2, *Berberis vulgaris*; 3, Perhaps *Plumbago rosea*, specimen insufficient.—*Maxwell.* *Cotoneaster frigida*.—*J. S.* Apparently *Basella* sp.—*G. H. S.* 1, *Picea excelsa* *Clanbrasiliana*; 2, *Aralia japonica*; 3, *Ginkgo biloba*; 4, *Cupressus thyoides*; 5, *Picea excelsa*; 6, *Cephalotaxus drupacea*; 7, *Cupressus Lawsoniana*; 8, *Bocconia cordata*.—*D. R.* *Berteroa incana*, an introduced weed.

RESTING OF CYMBIDIUM GIGANTEUM: *J. R.* *Cymbidiums* do best in the *Cattleya*-house, and as *C. giganteum* blooms in the winter, it should not be removed to a cooler house at that period. The resting of the plant may be attained by placing it in a cool part of the house, and affording only a moderate quantity of moisture at the roots.

SUBSTANCE IN POND: *Correspondent.* The specimen is a fresh-water Bryozoon, and is commonly known in England under the name of *Alcyonella fungosa*, *Pallas*; but more recent authorities regard this species as a mere variation in mode of growth of *Plumatella repens*, *Linnaeus*. The best figures and descriptions are in *Allman's Monograph of Fresh-water Polyzoa* (Ray Society), 1856, p. 93, pl. V.; and Van Benedin, *Mem. Acad. Roy. Belg.*, 1848, vol. xxi., p. 18. [This reply has been delayed, owing to the absence of the referee. Ed.]

TIME OF FLOWERING OF CYRTOPODIUM PUNCTATUM: *J. R.* The flowers appear with the young growth in the spring. The plant requires much heat generally, but no harm will ensue if it be placed in a cooler house when the inflorescence is out.

VINES: *E. B.* The canes may be planted as soon as the foliage begins to turn of a yellow colour. Spread out the roots at various levels, between 4 and 8 inches from the surface. Water after planting, and afford a light mulch, a heavier one being put on at the beginning of winter. Remove the unripe tips of canes in December, and disbud after growth has begun. The canes may carry 8 to 10 lb. of fruit.

VINE DISEASE: *B. R. J.* Undoubtedly another case of browning (*Plasmidiophora vitis*), although the decay of the Grapes may possibly be not directly due to this, as they are filled with the mycelium and fruit of *Cladosporium viticolum*. These, along with the insects, make the plants in a deplorable condition. *G. Massee.*

COMMUNICATIONS RECEIVED.—*R. D. B.*—*E. G. B.*—*M. D.*—*N. L.*—*T. F.*—*C. G.*—*Graham's Town*.—*M. F.*—*A. G. M.*—*G. Truffaut*, Versailles.—*F. W. B.*—*Max Leichtlin*, Baden.—*Baden*.—*C. Naudin*, Antibes.—*H. E.*—*C. B.*—*Troyes*.—*C. W. D.*—*Helen*.—*G. H. G.*—*W. Bacon*, Derby.—*E. T. L.*—*Smith*.—*S. Ely*.—*T. Fletcher*.—*J. R.*—*shortly*.—*S. E.*—*T. F.*—*R. D.*—*J. D.*—*J. S.*—*E. M.*—*M. T.*—*W. D.*—*E. T. C.*—*A. W. C.*—*P. D.*—*A. D.*—*J. R. T.*—*J. G.*—*M. C. C.*—*W. D.*—*F. V. D.*—*J. J. W.*—*R. E. W.*—*J. M. E.*—*W. S.*—*G. M.*

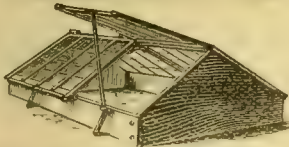
PHOTOGRAPHS RECEIVED.—*J. W.*—*G. S. G.*—*J. A.*

SPECIMENS RECEIVED.—*V. & Co.*—*J. Laing & Co.*—*W. T.*

BOLTON & PAUL

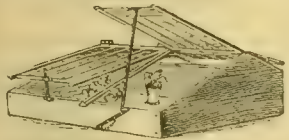
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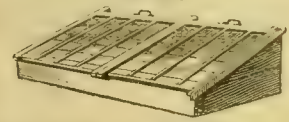
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8 ft. by 6 ft. 4 4 0 | 16 ft. by 6 ft. 7 4 0

No. 74. THREE-QUARTER SPAN GARDEN FRAME.



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8 ft. by 6 ft. 4 5 6 | 16 ft. by 6 ft. 7 8 6

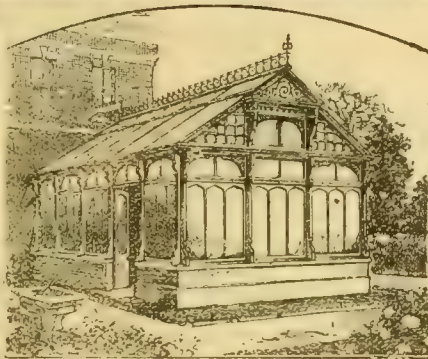
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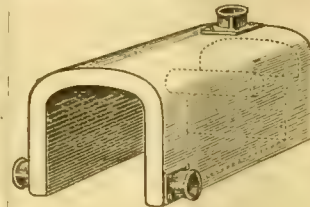
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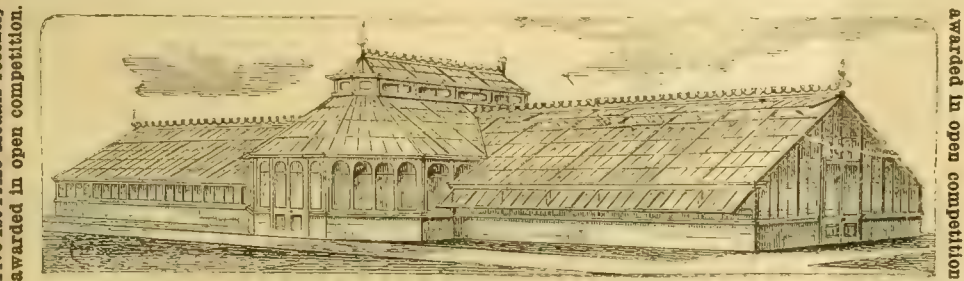
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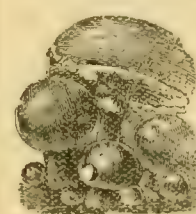
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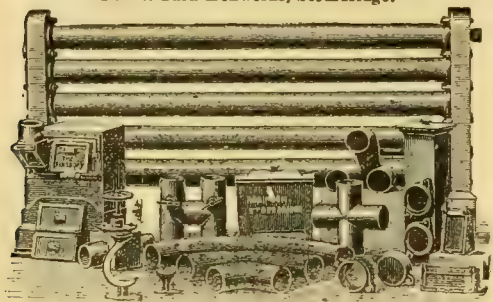
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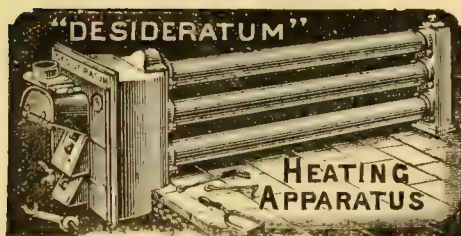
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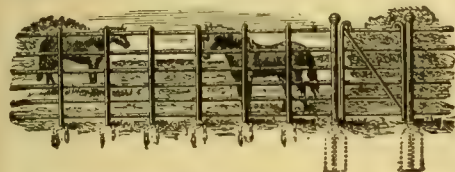
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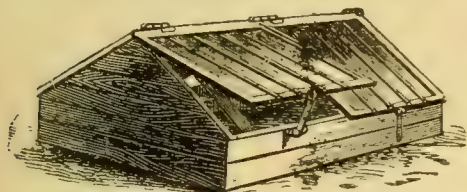


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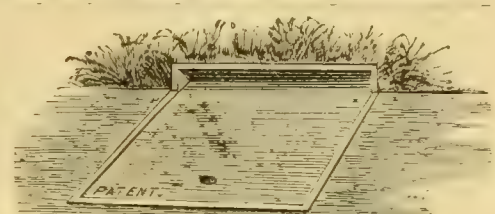
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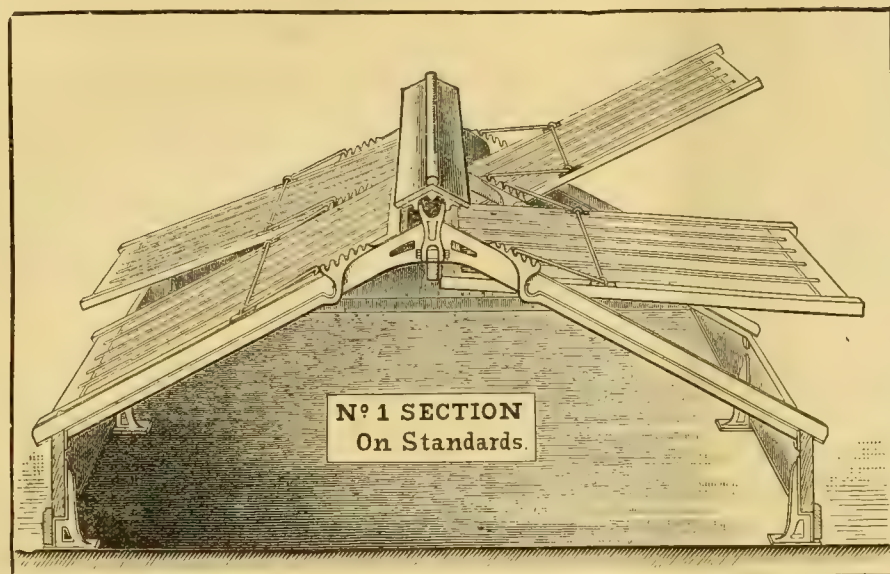
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ESTABLISHED 1841. No. 2750.

No. 350.—VOL. XIV. {THIRD SERIES.}

SATURDAY, SEPTEMBER 9, 1893.

[Regt. as a Newspaper. {PRICE 3d. POST-FREE, 3½d.}

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Continued Increase in the Circulation.

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MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons, to **SELL BY AUCTION**, on the Premises, the Burnt Ash Road Nurseries, Lee, Kent, S.E., adjoining Lee Railway Station, and within a mile of Blackheath, or Grove Park Station, S.E. Railway, on **TUESDAY NEXT**, September 12, at 11 o'clock precisely, without Reserve, a remarkably well-grown stock of **WINTER-FLOWERING HEATHS**, and other **STOVE** and **GREENHOUSE PLANTS**, consisting of—

15,000 <i>Erica hyemalis</i>	5,000 <i>Solanum capsicastrum</i> , well berried
2,000 " <i>gracilis</i>	1,000 <i>Adiantum cuneatum</i>
1,000 " <i>Cavendishii</i>	1,000 <i>Lomaria gibba</i>
1,000 " <i>coccinea minor</i>	800 Tea Roses, in pots
600 " <i>Caffra</i>	2,000 <i>Bouvardias</i> , of sorts
All well set with bloom-buds.	1,000 Palms, of sorts
2,000 <i>Ampelopsis Veitchii</i>	1,000 <i>Cyclamen persicum</i>
1,500 <i>Epacris</i> to name	5,000 <i>Crotons</i> , beautifully coloured
1,000 <i>Boronia megastigma</i> , and others	500 <i>Aralia Sieboldii</i>
1,000 <i>Grevillea robusta</i>	
4,000 <i>Genistas</i>	

With a large quantity of young *Erica Cavendishii*, *Aralia Sieboldii*, Ferns, and *Genistas*, all in 60-pots for growing on.

The Stock is now on view. Catalogues may be had on the Premises; at the Seed Warehouse, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Upper Edmonton.

Five minutes' walk from Angel Road, and eight minutes' from Silver Street Railway Stations.

EIGHTH GREAT ANNUAL UNRESERVED TRADE SALE OF POT PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to **SELL BY AUCTION**, on the Premises, Dyson's Lane Nurseries, Upper Edmonton, on **MONDAY NEXT**, September 11, at 11 o'clock punctually (there being upwards of 1500 lots), the following unusually well-grown stock:—

TEA ROSES, in Pots, the grandest lot ever offered, including extra strong well ripened plants of M. Niel, W. A. Richardson.

CLIMBING NIPHETOS, **CLIMBING PERLE DES JARDINS**, and other best sorts for forcing, these are especially fine.

FERNs, many thousands, in various sizes.

TREE CARNATIONS, including Duke of York (fine new crimson), Winter Cheer, Miss Joliffe Improved, Mrs. A. Hensley, and other best winter-flowering sorts, also large quantities of Old Crimson Cloves, &c.

BOUVDIARs, large quantities of all the best sorts.

FICUS ELASTICA VARIEGATA, an extra fine stock of this beautiful plant.

CROTONs, a splendid lot of beautifully coloured plants.

PALMs, consisting of fine specimens of *Kentias*, *Arecas*, *Cocos*, *Seaforthias*, &c., also great quantities of smaller plants.

GENISTAS, unusually fine bushy stuff.

SOLANUMs, bushy and well-berried.

CYCLAMEN, **DOUBLE PRIMULAS**, **EUPHORBIAS**, **POINSETTIAS**, **AZALEAS**, **CAMELLIAS**, and other useful Flowering Plants.

HYDRANGEAS, well-ripened for early forcing.

LAPAGERIAS, **AMPELOPSIS**, and **PASSIFLORAS**.

CLEMATIS, **JACKMANI SNOW WHITE**, **JACKMANI**, and other leading sorts.

IVYs, choice Variegated sorts.

ASPIDISTRAS, **ARAUCARIA EXCELSA**, **FICUS ELASTICA**, **GREVILLEAS**, **ARALIAS**, and a great variety of other useful flowering and foliage plants. Large quantities of small *Heaths*, *Genistas*, &c., for growing on.

May be viewed. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G.E.R. **TWENTY-FIFTH ANNUAL TRADE SALE OF STOVE and GREENHOUSE PLANTS.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller, to **SELL BY AUCTION**, on the Premises, the Brimsdown Nurseries, Green Street, Enfield Highway, N., on **THURSDAY NEXT**, September 14, at 11 o'clock punctually, there being upwards of 1300 lots to sell in one day. About

50,000 **STOVE and GREENHOUSE PLANTS**, remarkably well-grown, mostly in 48-pots, and fit for immediate sale, consisting of

20,000 **WINTER-FLOWERING HEATHS**, including *Hymalis gracilis*, *Cavendishii*, hybrids, &c.

2000 Tree and other *Carnations*, Duke of Fife, Duke of Clarence, Winter Cheer, &c.

1500 Tea Roses, in pots, The Bride, Niphetos, C. Mermet, Climbing Niphetos, Maréchal Niel, Gloire de Dijon, Perle des Jardins, W. A. Richardson, &c.

1000 *Ampelopsis Veitchii*, *Clematis Jackmannii*, &c.

600 *Epacris*, to name

5000 *Crotons*, beautifully coloured

5000 *Solanums*, exceptionally well berried

3000 Ferns, *Adiantums*, *Polypodiums*, *Pteris*, *Lomarias*, &c.

3000 *Bouvardias*, leading sorts

5000 *Genista fragrans*

1000 Palms, in variety

1000 Zonal *Geraniums*, new and leading varieties

2000 *Cyprus distans*

1000 *Passifloras*

1000 *Grevillea robusta*

Large quantities of *Ficus*, *Aspidistras*, *Anthericums*, *Poinsettias*, *Plumbagos*, *Callas*, *Aralias*, *Abutilons*, New Hybrid *Crasulads*, *Stove Climbers*, *Dipladenias* of sorts, *Bougainvilleas*, *Allamandas*, *Stephanotis*, &c.

May be viewed any day prior to the sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 & 68, Cheapside, London, E.C.

N.B.—The whole of the stock is in first-rate condition. The *Ericas* are specially well set for flower, and the *Solanums* unusually well-berried, and are undoubtedly the finest lot offered at this nursery for many years.

Lea Bridge Road.

UNRESERVED SALE.

ANNUAL SALE of fine WINTER-FLOWERING HEATHS, CYCLAMEN, BOUVDIARs, GENISTAS, SOLANUMS, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex, on **WEDNESDAY NEXT**, September 13, at 11 o'clock precisely, by order of Mr. John Fraser, without reserve, in consequence of the number of Lots, many thousands of

WINTER-FLOWERING and other PLANTS, including—

20,000 *Erica hyemalis*

3,000 *Erica hyemalis alba*

2,000 *Erica Caffra*

2,000 *Erica Cavendishii*

4,000 *Erica gracilis*

3,000 Tree *Carnations*

6,000 *Genista fragrans*

6,000 *Ampelopsis Veitchii*, 4 feet

1,000 New Scarlet Trumpet Honeysuckle

1,000 *Ceanothus azureus*, best varieties

2,000 *Lapageria rosea superba*

6,000 *Cyclamen persicum*, Fraser's superb strain

2,000 *Passiflora Constance*

Elliott anderulea (Ivies)

6,000 Variegated and other

And a great number of *Erica ventricosa*, large-flowering white *Jasmines*, *Boronia heterophylla*, *Escalonia macrantha*, *Escalonia Ingramii*, *Aralia Sieboldii*, *Chosoya ternata*, *Taesonina Von Volzemi*, *Lonicera Hallii*, *Abutilons*, *Plumbago*, *LAPAGERIA ALBA*, *Magnolias* of sorts; *Ficus elastica* variegata, and other plants. Also a large quantity of young *Genistas* and *Heaths* for potting on, and other stock.

May be viewed the day prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—Hoe Street Station on the Walthamstow Branch of Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

East Grinstead.

IMPORTANT to the TRADE and PRIVATE BUYERS.

FOURTH ANNUAL SALE of well-grown STOVE and GREENHOUSE PLANTS, by order of Mr. A. Clark (late Roberts Bros.).

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, The Mount Nursery, East Grinstead, close to the East Grinstead Station, on **TUESDAY**, September 19, 1893, at half-past 11 o'clock, without Reserve.

10,000 unusually well-grown **STOVE and GREENHOUSE** Plants, including:—

3500 Tea Roses in pots, the best lot ever offered at this Nursery, comprising

Perle des Jardins, Niphetos, Gloire de Dijon, &c.

300 Maréchal Niel Roses, rods 5 to 6 feet long

Stephanotis, Azaleas, Imatophyllums, Chrysanthemums, Specimen *Eucharis*, Mixed Ferns, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sidcup, Kent, S.E.

About 10 minutes' walk from the New Eltham (late Pope Street) Station, S.E.R.

GREAT ANNUAL TRADE SALE of WINTER-BLOOMING HEATHS, particularly well-grown and beautifully set with flower; *ROSES*, and other **STOCK**.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the Longlands Nursery, Sidcup, S.E., on **FRIDAY NEXT**, September 15, at 11 o'clock, by order of Messrs. Gregory & Evans, an enormous quantity of unusually well-grown plants, comprising

35,000 **WINTER-BLOOMING HEATHS**, in excellent condition and well set with flower-buds, including:—

10,000 *Erica hyemalis*

2,000 " *alba*

5,000 " *gracilis*

6,000 " *Cavendishii*

3,000 " *coccinea minor*

3,000 " *magnifica*

50,000 **HEATHS**, of sorts, in 60-pots for growing on, 15,000 **GENISTAS**, in 60-pots,

a magnificent lot of 12,000 **ROSES IN POTS**, the finest ever offered at this Nursery, consisting of

3,000 W. A. Richardson, 10 to 15 feet long

2,000 Gloire de Dijon, very fine

1,000 Climbing Niphetos, 10 feet long

3,000 Maréchal Niel

1,000 Perle des Jardins

1,000 Niphetos

1,000 Sunset

Also

5,000 *Bouvardias* in 48-pots, clean and healthy plants

2,000 *Kentias* in 48-pots

1,000 *Kentias* in 60-pots

And a great variety of useful Ferns.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Stock this Season is particularly well-grown, special attention being invited to the **HEATHS**, also the **SOLANUMS** and **ROSES**, which are the best ever offered at this Nursery.

Benfleet, Essex.

A short distance from Southend. Overlooking the Thames, and with magnificent views of the Kentish Hills.

MESSRS. PROTHEROE & MORRIS will **SELL BY AUCTION** in a Marquee on the Estate, on **THURSDAY**, September 14, at 2 o'clock. Three attractive **RUNGALOWS** and 80 large Plots of **LAND**, adapted for Fruit Growing and Market Gardens, or for Building. Immediate possession. No Law Costs. Payment by instalments. Plans and Railway Tickets of Mr. R. VARTY, 90, Leadenhall Street, E.C., and of the Auctioneers, 67 & 68 Cheapside, E.C.

In Bankruptcy, Re J. Gough.—Sunbury, Middlesex.

About a mile from the Sunbury Railway Station.

ABSOLUTE CLEARANCE SALE of the GREENHOUSE and OTHER PLANTS in Pots, by order of the Trustee.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, The Osborn Nursery, Sunbury, Middlesex, on **WEDNESDAY**, September 20, at 11 o'clock punctually, in consequence of there being upwards of 1100 lots, absolutely without Reserve:—

6550 **MAIDENHAIR FERNS**, In 48, 32, and 24-pots; 250 **AZALEA MOLLIS**, **PRIMULAS**, 150 **GREVILLEAS**, 200 **PTERIS TREMULA**, 200 **PELAGONUMS**, 800 **GERANIUMS**, 750 Oak-leaved ditto.

2600 **ARUM LILIES**, in 48-pots.

1200 **LILIUM CANDIDUM**, 1000 **LILIUM LONGIFLORUM**, 1300 **SOLANUMS**, 1000 **CYPERUS ALTERNIFOLIUS**, 300 **HYDRANGEAS**, 1100 **MARGUERITES**, in 48-pots.

3000 **CYCLAMEN PERSICUM** in 48-pots.

200 **BOUVDIARs**, 500 Tree and Other **CARNATIONS**.

12,000 **CHRYSANTHEMUMS**, comprising all the best sorts for cut flower purposes.

100 **FICUS ELASTICUS**, 100 **ORCHIDS**, various.

1100 **EUCCHARIS AMAZONICA** bulbs.

CAMELLIAS, **AZALEAS**, 600 **TEA** and other **ROSES**, 1000 **PALMS** in variety.

including *Kentias*, *Arecas*, *Seaforthias*, *Chamaerops Fortunei*, *Cocos Weddelliana*, and other stock.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises; of R. J. WARD, Esq., the Trustee (Messrs. WARD and WILLING), Chartered Accountants, Bloomsbury Mansions, Hart Street, W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The SALE of the **OUTDOOR NURSERY STOCK**, including a large quantity of Fruit Trees and *Roses*, will take place on the Premises in **OCTOBER NEXT**.

Turnham Green.—Without Reserve.

ABSOLUTE CLEARANCE SALE, the Land having been Sold for Building.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, Chiswick Nursery, Turnham Green, two minutes' walk from Turnham Green Station, on **MONDAY**, September 18, at 12 o'clock, by order of Mrs. Ewen, 1000 ponticum and Cunningham's white RHODODENDRONS, 1000 AZALEA MOLLIS, a choice assortment of GREENHOUSE PLANTS, ornamental PALMS, 300 EUCCHARIS AMAZONICA, 300 CALLAS, 600 BOUVDIARs, 80 AZALEA INDICA ALBA, including several fine specimens; 1000 LILIUM SPECIOSUM ALBUM in pots, 600 old Clove CARNATIONS, Also the erections of nine Greenhouses, 390 feet of Hot-water Piping, mostly 4-inch, Bricks, several Pits, Lights, Boilers, Tandem Safety Bicycle, Mowing Machine, and other effects.

May be viewed Friday and Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Important to the Trade. LILIAM HARRISI.

Received direct from Bermuda,
FOR UNRESERVED SALE.
ENORMOUS IMPORTATION OF 43,000 BULBS.
Also 775 LILIAM LONGIFLORUM,
And other LILIES.

The consignment comprises 239 Cases, and they will be offered one case in a lot, as received, the contents varying from 50 to 500 in each case, according to size. The quantities are as follows:—

- 1,070 extra large, 11 to 15 inches and upwards.
- 7,160 nine to eleven inches.
- 30,720 seven to nine inches.
- 10,000 five to seven inches.

MESSRS. PROTHEROE AND MORRIS will sell the above extensive consignment in their BULB SALE, at the Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, September 14 (being the Thursday in the Great Trade Sale Week). The Sale commences at 12 o'clock, but the LILIAM HARRISI will be offered at 2 o'clock, and sold without the slightest reserve.

Croydon Lodge, Croydon.

About ten minutes' walk from West Croydon and Addiscombe, and twenty minutes from East Croydon Railway Stations.

Highly important **THREE DAYS' UNRESERVED SALE** of the valuable Collection of **ESTABLISHED ORCHIDS, STOVE and GREENHOUSE PLANTS, and GARDEN EFFECTS**, by order of the Executors of the late Stephen Clarke, Esq.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, Croydon Lodge, Croydon, on TUESDAY, September 26, and TWO FOLLOWING DAYS, at half-past 12 o'clock punctually each day, absolutely without reserve, the whole of the extensive, valuable, and well-grown COLLECTION of **ESTABLISHED ORCHIDS**, comprising about 1500 plants, and including *Cymbidium Mastersii*, *C. eburneum*, *C. Downianum*, *Phalænopsis Schilleriana*, *Cypripedium Elliottianum*, *C. Chamberlainianum*, *Cattleya Trianae* bella, 3 plants of *C. T. Clarkiana*, fine plants of *C. Mossii* and *C. Trianae*, *C. gigas*, *Maxillaria Sanderiana*, *Peristeria elata*, *Sobralia macrantha*, *S. xantholeuca*, *Lycaste Skinneri* alba, *Odontoglossum Alexandrie* in variety, *O. hebraicum*, *Dendrobis*, *Calanthes*, *Vandas*, *Afrides*, *Masdevallias*, and others. An unusually fine collection of

STOVE and GREENHOUSE PLANTS.

Many of them choice specimens, which have been successfully exhibited at various shows, including *Anthurium Scherzerianum*, *A. Andreanum*, *A. magnificum*, *Cycas revoluta*, *Alocasias*, 9 *Eucharis amazonica*, 9 *Pancratium fragrans*, a grand plant of *Lantana borbonica* (13 feet through), *Seafortia elegans*, *Kentias*, *Clerodendrons*, *Lapageria alba*, *Rondeletia speciosa* major, *Allamandas*, a good batch of well-coloured *Dracenas* and *Crotons*, well-grown plants of *Caladiums*, *Dipladenias*, *Pandanus*, and *Gardenias*.

FERNS IN VARIETY.

Amongst them being *Adiantum cuneatum*, *A. Mooreanum*, *A. trapeziforme*, *Dicksonia antartica*, *Microlepia hirta cristata*, *Nephrolepis Davallioides* furcans, *Selaginellas* in pans, and numerous others. *Fuchsias*, and *Agapanthus umbellatus*.

EIGHT SPLENDID SPECIMEN AZALEAS.

And 70 smaller plants, large *Camellias*, a superb strain of Double and Single *Begonias*, *Amaryllis*, *Tea Roses*, *Azalea mollis*, *Ghent Azaleas*, *Hardy Ferns*, and large numbers of other plants. Also

15 FRAMES, various sizes, and a Quantity of FLOWER-POTS.

May be viewed three days prior to the Sale. Catalogues may be had of Mr. W. CARL, the Head Gardener, on the Premises; of Messrs. WILKINS, BLYTH, DUTTON and HARTLEY, Solicitors, 112, Gresham House, Old Broad Street, E.C., and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

GREAT SALES OF NURSERY STOCK.

Preliminary Notice of Forthcoming Auctions.

Important to those Largely Engaged in Planting.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions to conduct the following:—

- SEPTEMBER 27.—At the FLORAL NURSERY, CASTLE HILL, MAIDENHEAD, by order of Mr. R. Owen.
- OCTOBER 3 and 4.—At the WINDLESHAM NURSERY, BAGSHOT, by order of Mr. R. Mason (two days).
- OCTOBER 4.—At PERRY HILL, CLIFFE, near ROCHESTER, by order of Mr. W. Horne.
- OCTOBER 11.—At the DARRANT NURSERY, WESTERHAM, by order of Mr. A. Jeffkins.
- OCTOBER 23 to 25.—At the SUNNINGDALE NURSERIES, BAGSHOT, by order of Mr. C. Noble.
- NOVEMBER 7.—At the HALE FARM NURSERIES, TOTENHAM, by order of Mr. T. S. Ware.

Dates Not Fixed.

At the GOLDSMITH PARK NURSERY, GROOMBRIDGE, TUNBRIDGE WELLS, by order of Mr. E. Hollamby (two days).

At the HEATH NURSERY, HOUNSLOW, by order of Messrs. C. Lee & Son (1 day).

Other Sales are being arranged, and the dates will be notified in future announcements.

The Auctioneers desire to call the special attention of those who may be planting during the season to these important Sales. They are now revising their Permanent Lists, and will be pleased to add the names of intending purchasers who may wish to have Catalogues forwarded of the above, or any particular auction.

Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

Friday next.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, Sept. 15, by order of F. Sander & Co., St. Albans, ESTABLISHED and IMPORTED ORCHIDS, among which will be found the following:—

CATTLEYA AUREA and VARS.,

Established but unflowered Plants.

This is the section of *C. aurea* that has been so productive of the many gorgeous forms of *Cattleya Hardyana* and kindred varieties, which have appeared in various collections. Among them may be enumerated the white-sepal and petal *C. Hardyana*, *C. aurea marmorata*, *C. Oweniana*, *C. Hardyana* var. *Massaiana*, the grand form known as *Statters Variety*, the splendid variety in the renowned Measures collection and many others of equal beauty and merit, to which must be added the latest arrival in Mr. W. C. Clark's possession. Mr. Clark writes us under date of August 29, 1893: "I sent to Mr. O'Brien a spike (three flowers) of one of the finest *C. Hardyana* I ever saw. It flowered from a lot sent me by you as *C. aurea*. It may be at the Royal Horticultural Society's Show. You should see it; the petals and sepals are very dark, and the lip superb."

CYPRIPEDIUM MACROCHILUM.

C. longifolium × *Uropedium Lindenii*.

First-class certificate, Royal Horticultural Society, August 11, 1891. *The Gardeners' Chronicle* says: "It is one of the most extraordinary productions of the hybridists skill."

ONCIDIUM VARICOSUM ROGERSII.

The gigantic, brilliant, Buttercup-coloured form, the grandiflora type of this superb *Oncidium*. Flowers are $3\frac{1}{2}$ inches across in many cases, and are suspended in the air like huge butterflies with expanded wings; frequently 200 and upwards of lovely Buttercup-yellow flowers are carried on a single inflorescence. The flower-spikes are much branched, and in bloom present a mass of glowing colour quite unequalled by any other *Oncid.* The true *Rogersii* form exists only in solitary places, and has not been imported for many years, owing to the difficulty of finding it in its native home, where it seems to have been nearly extirpated.

It is the most brilliant and attractive of all *Oncids*.

CYPRIPEDIUM SANDERIANUM.

The most remarkable and longest-petalled of all the known species of *Cypripedes*. Its ribbon-like petals frequently attain a length of 2 to 3 feet, and are richly coloured with purple and yellow, the lower part being spotted and barred; as many as five and six blossoms are borne on one stem, and several are expanded at the same time. It is the most distinct and remarkable of all the Eastern *Cypripedes*, and is well worthy a place in the most select collections.

DENDROBIUM LOWII.

This very beautiful *Dendrobium* is now extremely rare, and very few are at present in cultivation. The flowers, which are borne in clusters of five or six, are bright buff-yellow, 2 to 3 inches across, the lip being stained with crimson at the apex, and traversed by lines of long red hairs springing from a crimson base.

A free-flowering and brilliant *Dendrobe*.

DENDROBIUM MIRBELIANUM.

Extremely rare, very quaint and beautiful, carrying thyrses of delicate creamy-yellow flowers.

EULOPHIELLA ELISABETHÆ.

The new and beautiful *Orchid* from Madagascar, discovered by M. Hamelin.

Flowers white, with the outer surface purplish-red, callus of the lip orange-yellow; in shape they resemble *Phalænopsis* blossoms, and as many as fifty flowers were seen on a single inflorescence on plants in a wild state by M. Hamelin.

The plants are in grand order, and are breaking freely.

HABENARIA GIGANTEA VAR. SUMATRANA.

syn. *H. Susanne* var. *Sumatrana*.

Flowers white, very large, somewhat resembling in its heavily-fringed labellum, *Brassavola Digbyana*, but having larger blossoms than the latter. The flowers are borne on upright stems, after the manner of *Disa grandiflora*.

CYPRIPEDIUM NICHOLSONIANUM.

(Provisionally named.)

A distinct *Cypripedium* from the Island of Palawan.

EPIDENDRUM FORGETIANUM. (New.)

The habit and form of the pseudobulbs are similar to those of *E. seligerum*, *E. vite linum*, and others; but the colour of the flowers is different. The sepals are spatulate, concave near the lip, and of a dusky yellow, netted with deep brown; the petals are roundish and clawed. The three-lobed lip has a creamy ridged middle lobe, and the lateral ones are rosy, with deeper lines, and folded over the purple column.

Awarded Botanical Certificate, June 21, 1893.

ONCIDIUM SANDERIANUM.

(Provisionally named.)

A new and superb *Oncidium* from Venezuela. Flowers rosy red, borne in hundreds on dwarfish many-branched spikes, forming a perfect bouquet when in bloom.

ODONTOGLOSSUM LONDESBOROUGHIANUM.

CYPRIPEDIUM GODEFROYÆ LEUCOCYLUM.

<i>Cattleya labiata</i>	<i>Odontoglossum Edwar</i> ii
<i>Cymbidium Dayanum</i>	<i>Cyrtopodium macranthum</i>
<i>Oncidium Jonesianum</i>	<i>Calanthe vestita</i>
Gravesianum	<i>Dendrobium nobile</i>
<i>Cymbidium eburneum</i>	<i>Epidendrum</i> , &c.

On view morning of Sale, and Catalogues had.

Bickley.

Ten minutes' walk from the Bickley Railway Station. CLEARANCE SALE of STOVE and GREENHOUSE PLANTS, OR HIDES, GLASS ERECTIONS, PIPING, surplus FURNITURE and EFFECTS, by order of F. A. Philbrick, Esq., Q.C., whose lease of the property has expired.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, "Oldfield," Oldfield Road, Bickley, Kent, on THURSDAY, September 21, at 1 o'clock, the remaining STOVE and GREENHOUSE PLANTS, consisting of *Palms*, *Fuchsias*, *Geraniums*, *Camellias*, *Azaleas*, *Callas*, 150 *Ferns* in variety, *Anthuriums*, choice *Tea Roses* in pots, and a few *Orchids*; the erections of 6 Greenhouses, 2 Sheds, 1300 feet 4-inch Piping, Boilers, Brickwork, and Sundries. Also the remaining HOUSEHOLD FURNITURE, comprising Bed-room appointments, Book-cases, Couches, Oak Chairs, Axminster Carpets, and other effects.

May be viewed day prior and morning of Sale. Catalogues had on the Premises; of Messrs. HANCOCK, MARRABLE and TERRELL, Solicitors, 8A, New Inn, W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.
MESSRS. PROTHEROE & MORRIS will sell by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class *HYACINTHS*, *TULIPS*, *CROCUS*, *NARCISSUS* and other *BULBS* from Holland; also *ROMAN HYACINTHS*, *LILIAM CANDIDUM* and other bulbs for early forcing, lotted to suit the Trade and private buyers. On view morning of Sale, and Catalogues had.

Maidenhead.

UNRESERVED SALE of well-grown GREENHOUSE PLANTS, FERNs, &c. By order of Mr. R. Owen.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Floral Nursery, Castle Hill, Maidenhead, 1 mile from Maidenhead Station, on WEDNESDAY, September 27, at 2 o'clock, 4000 GREENHOUSE PALMS and FERNs, *CROTONs*, coloured *DRACENAS*, *FICUS ELASTICA VARIEGATA*; 2000 *CYCLAMENS*, 600 *PELARGONIUMs*, *TUBEROUS BEGONIAS*, 500 *IRIS*, 200 *CALLAS* LITTLE GEM, 2000 *ARBOR VITÆ*, *LAURELS*, and other *SHRUBs*.

May now be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Plants from Belgium.—Azaleas, Camellias, Palms, &c.

MESSRS. PROTHEROE AND MORRIS beg to announce that their Sale of the above will commence on MONDAY, September 18, and be continued EVERY MONDAY and THURSDAY during the season. Auction Rooms 67 and 68, Cheapside, London, E.C.

Monday, Wednesday, and Thursday Next.

ENORMOUS IMPORTATIONS OF DUTCH BULBS. SPECIALLY LOTTED TO SUIT ALL BUYERS.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, and THURSDAY NEXT, September 11, 13, and 14, at half-past 12 o'clock precisely, enormous IMPORTATIONS of BULBS, in splendid condition, from several well-known and reliable growers in Holland, and specially lotted to suit all Buyers. *Roman* and *Italian HYACINTHS*, forcing *NARCISSUS*, and *LILIAM CANDIDUM*, in large quantity, from France, &c. On view mornings of Sale, and catalogues had.

Thursday Next.

IMPORTED and ESTABLISHED ORCHIDS.
MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 14, at half-past 12 o'clock precisely, a nice Collection of ESTABLISHED ORCHIDS, some in flower and bud. Also Imported *Orchids*, &c. On view morning of Sale, and Catalogues had.

Bulb Sales, Birmingham.

MESSRS. JAMES AND BAXTER (late THOMAS B. JAMES), beg to announce that they are holding their SALES of DUTCH BULBS, LILIAM HARRISI, White *Roman HYACINTHS*, Paper White, &c., &c., EVERY TUESDAY, at half-past 11 o'clock A.M., at their Spacious Sale Rooms, 12, Bull Ring, Birmingham, usual number of lots 1300 to 1500.

The Weekly Sales of *Azaleas*, *Camellias*, *Ficus*, *Palms*, *Dracenas*, and other Plants from Belgium, will commence in September, and continue until March next.

The Weekly Sales of *Roses*, *Fruit Trees*, *Ornamental Flowering Trees*, and *General Nursery Stock*, will commence in October, and continue until March.

Sales of *Orchids* are held every month.

Sales of Out Flowers every Wednesday and Friday, at half-past 4 o'clock P.M.

Sales and Valuations of Nursery Stock, Live and Dead Farming stock, &c., conducted in any part of the country, on reasonable terms.

All Catalogues post-free; goods purchased (no commission charged), and packed and forwarded.

JAMES AND BAXTER, Horticultural Auctioneers and Valuers (both many years with Messrs. Protheroe & Morris).

Ash House Farm, Parson's Green.

To NURSERYMEN and OTHERS.

WHATLEY & SON are instructed to sell, on the premises, as above, about 2,000 tons of prime MANURE, without reserve, on WEDNESDAY, Sept. 10, at 2 P.M. precisely.—Auction Offices, 1, Hill's Place, Oxford Circus, W.

NURSERY and FLORIST BUSINESS for SALE.—Next to Cemetery in the Old Dover Road, Gravesend, Kent, comprising 580 feet run of Houses, well heated; One Acre of Land, all well stocked; Jobbing Business included.—T. BOX, Victoria Nursery, Gravesend.

FREEHOLD VILLA for SALE, with four large Greenhouses and two Conservatories. New property. Close to three Railway Stations. Apply to Owner, Durant's Road, Ponders End, Middlesex.

FLORIST and NURSERYMAN'S BUSINESS; 5 miles from London. Splendid position; comprising two Nurseries and Double-fronted Shop. Low price for IMMEDIATE SALE. Full particulars of Mr. ROBT. PECKITT, House Agent and Valuer, 1, Wellington Street, Woolwich.

Middlesex.

Only 12 miles from London, and close to Station. **TO BE LET, an OLD-ESTABLISHED NURSERY**, in good position on High Road. Area 26 acres, good Offices, and Seed Shop. Rent, £184. Stock at a Valuation. Easy terms of Payment. Full particulars of Messrs. PROTHEROE and MORRIS, 67 and 68, Cheapside, London, E.C. Personally inspected.

NURSERY and FLORIST CONCERN situated in Middlesex, 15 miles from Covent Garden, stands on 2 acres of absolute Freehold Land, with 5 Glass Houses, 75 feet long. Well stocked. **TO BE SOLD, a BARGAIN.** Or a practical PARTNER would be taken.—Messrs. THORNTON, 4, Great James Street, Bedford Row, W.C.

TO BE LET, the WOLLATON HALL GARDENS, situate 3 miles from Nottingham, comprising Vineries, Pine Pits, Conservatories, Cucumber-houses, &c., with good Dwelling-house and Outbuildings, the whole extending over 9½ acres.—Apply, by letter, in the first instance, to **WILLIAM WRIGHT, Esq.**, Wollaton, Nottingham.

City of Peterborough.

TO NURSERYMEN, FLORISTS, SEEDSMEN, and OTHERS.

TO BE LET, with Immediate or Michaelmas Possession, the well-known, old-established Peterborough BUSINESS, comprising a NURSERY FARM of 25 acres, of which 13 acres are under cultivation, not heavily stocked; the remainder in Pasture Land, with good House and Premises, Greenhouse, Pits, &c., adjoining the Town. Also, a superior SEED SHOP and STORE, in a first-class central position; and a FLOWER-STAND on the Great Northern Railway Station. The whole Business has for many years been carried on by Mr. John House, who is retiring on account of declining health, and leaving a fine opportunity for an enterprising tradesman.

Apply, **FOX AND VERGETTE, Estate Agents, Peterborough.**

TO LET, an old-established FLORIST and SEED BUSINESS in a fashionable Town, South of England, a piece of land to be had near, with two Greenhouses and cold frames, potting shed, &c. Present owner retiring; full particulars on application to—**A. Z. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

TO BE LET, PREMISES suitable for a FLORIST and JOBBING GARDENER, situate close to Camden Road, N.W. Capital 6-room Cottage, Stabling, Sheds, 2 Greenhouses. Long lease. Everything £45, or offer.—**R. X., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.**

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for LIST, free.

P. McARTHUR, The London Nursery, 4, Maida Vale, London, W.

GRAPE VINES, most excellent, hard, short-jointed Canes. Fruit Trees of all kinds, wholesale and retail.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

DAFFODILS.—Irish-grown. Recommended by all the chief Growers in England. Hartland's "Little Book," with low prices for 1893, post-free.

HARTLAND, F.R.H.S., Seedsman, Cork. Established 1810.

ORCHIDS of every description, from 1s. each. LIST free. Different named Seedlings and Rooted Cuttings, 7s. 6d. per dozen. Orchid Seed, 2s. per packet.

THE LEEDS ORCHID CO., 131, Albion Street, Leeds.

BOUVARDIAS.—Best varieties, in bud, 9s. per dozen.

SOLANUMS.—Well berried beautiful stuff, 12s. per dozen

PTERIS FERNs, in variety, in small pots, 12s. 6d. per 100.

WALSHAW AND SON, Scarborough.

ROSES.—We are now booking orders for autumn delivery for Captain Hayward, Climbing Souvenir de la Malmaison, Lady Henry Grosvenor, and other Roses. Price LIST post-free on application to—

BENNETT BROS., Rose Growers, Chigwell Row, Essex.

FOUR CYGNETS for SALE.

Parents very Fine Birds.

THOMSON'S Nurseries, Spark Hill, Birmingham.

ORCHIDS.

ANOTHER NEW IMPORTATION, Just arrived from Brazil, in Splendid Condition.

FULL PARTICULARS FREE ON APPLICATION.

INSPECTION INVITED.

A. H. GRIMSDITCH, Importer, 5, CLAYTON SQUARE, LIVERPOOL.

Sole Agent for **CARLOS TRAVASSOS, Rio de Janeiro.**

GREAT SALE OF ORCHIDS.

BY ORDER OF THE LIQUIDATOR.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN) LIMITED,

Are selling their Immense Stock of

ORCHIDS

at greatly reduced prices, and subject to large discounts.

Inspection is earnestly invited. A new DESCRIPTIVE and PRICED CATALOGUE is now ready, and will be sent Post-free on application.

The Company are also selling, at greatly reduced prices, and subject to large discounts, their large Stock of GRAPE VINES, TEA ROSES in pots, FERNS, and General Stock of STOVE and GREENHOUSE PLANTS. Descriptive and Priced CATALOGUES Post-free on application to the COMPANY.

THE VINEYARD & NURSERIES, GARSTON, NEAR LIVERPOOL.

FOR ORCHIDS and GARDENERS to Grow Them, apply to **SANDER'S, St. Albans.** The finest stock of Orchids in the World.—30 minutes from St. Pancras.

FOR SALE, 2000 well-grown CARNATIONS (Miss Jolliffe), in 48's. Price, £25 per 1000.—Apply to **J. J. CAMFERMAN, Swan Lane Nursery, Whetstone.**

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—

Messrs. **R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.**

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

IVY-LEAF PELARGONIUM CUTTINGS,

Mme. Crousse, 4s. per 100; 30s. per 1000. Also Adiantum elegans from stores, 5s. per 100; 40s. per 1000. Or Exchange for Seedling Pteris.—Messrs. **COLLINS and COLLINS, Cumberland Park Nurseries, Willesden Junction, London, N.W.**

Kent: the Garden of England.

GROW ONLY the BEST STRAWBERRIES

AND CONSULT

GEORGE BUNYARD AND CO.'S NEW LIST.

A Chester Gardener says:—"In all my long experience I never had such crops as from your Kent plants."

Extra fine plants in little pots and runners ready shortly.

The Old Nurseries, Maidstone.

Dutch and other Bulbs.

E. H. KRELAGE AND SON'S superior Dutch, Cape, and all other Exotic Bulbs and Plants, cheap, guaranteed true to name, free delivery, Novelties, &c., see New Illustrated Descriptive BULB CATALOGUE (463), revised and enlarged to 100 pages, which will be sent free on application to **E. H. KRELAGE AND SON** (Nurserymen to the Royal Netherlands Court, and to H.R.H. the Grand Duke of Luxembourg), Haarlem, Holland.

FICUS ELASTICA, in 32-pots, 3 to 4 feet, 30s. per dozen; in 48's, 15s. per dozen, £5 per 100; Variegated, 5s. each. **ARALIA SIEBOLDI**, strong, 8s. per dozen, £3 per 100. **Asplenium**, 48's, 7s. per dozen, £2 10s. per 100. **KENTIAS**, in 3-inch pots, strong, 40s. per 100. **Phenix** reclinata, 10s. per 100. **Carex** jap. var., 3s. per dozen, 20s. per 100. **PTERIS CRETICA CRISTATA** (true), 12s.; **P. major**, 15s.; **P. argyrea**, 12s. per 100.

G. LANGE, Hampton, Middlesex.

10,000 GENISTAS, in small 60's, extra fine plants, £3 12s. per 1000, 8s. per 100; do., 1000 fine plants, in 40-size pots, at 30s. per 100. Cash with order. Post-Office orders payable at Leyton High Street.

T. BALDWIN & SON, Edith Nurseries, Burchall Road, Leyton.

CUTHBERT'S BULBS for EARLY FOR JING.—Special quotations for large quantities. Descriptive CATALOGUES free.

R. AND G. CUTHBERT, Importers of French and Dutch Bulbs, Southgate, N. Established 1797.

BULBS.—Our special offer of Daffodils, and other Bulbs for early planting, is now ready. **Lilium candidum**, 10s. and 12s. per 100; **Lilium Harrisii**, 5s. to 10s. 6d. per dozen; **Roman Hyacinths**, 12s. 6d. and 16s. per 100, very scarce; **Narcissus** (paper-white), 5s. per 100; **Narcissus Double Roman**, 5s. per 100; **Gladiolus Colvilli** (The Bride), lovely for cutting, 2s. 6d. per 100; **Iris hispanica** (the poor man's Orchid), finest mixed, 1s. 6d. per 100. Every article the best procurable.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

ALL GOODS DELIVERED FREE

on board, London, Antwerp, Rotterdam.	£ s. d.
LILIAM HARRISII , 5—7 in. circ., per 1000 bulbs.	6 5 0
" " 7—9 in. " " " "	11 10 0
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" AURATUM , 7—9 in. " " " "	8 7 6
" " 9—11 in. " " " "	11 10 0
TUBEROSES , Pearl, select 4—6½ in. " " "	1 10 0
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Prices for **GLADIOLUS**, &c., on application.

F. W. O. SCHMITZ AND CO., Jersey City, N.J., U.S.A.

ORCHIDS.—ORCHIDS.

Williams' for Cheap	Orchids.
Williams' „New & Rare	Orchids.
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An Inspection of our Stock Invited.

Illustrated Catalogues Gratis and Post-Free.

B. S. WILLIAMS & SON

VICTORIA and PARADISE NURSERIES,

UPPER HOLLOWAY, LONDON, N.

EXHIBITION.

BRISTOL CHRYSANTHEMUM SOCIETY.

SPECIAL PRIZES and CLASSES for AMATEURS. The next ANNUAL SHOW will be held in the COLSTON HALL, on WEDNESDAY and THURSDAY, November 15 and 16 next. Schedules are now ready, and may be had free of **EDWIN G. COOPER, Secretary,** 2, Mervyn Road, Bishopston, Bristol.

Borough of West Ham.—To Nurserymen, &c. **THE COUNCIL** hereby invite TENDERS for the supply and delivery of about 900 TREES, 11,000 SHRUBS, and 600 CREEPERS.

Further particulars may be obtained at the Office of Mr. Lewis Angell, Borough Engineer, Town Hall, Stratford, E.

Tenders endorsed "Tender for Trees, &c.," to be sent to my Office not later than Saturday, September 16th, 1893.

The Council do not bind themselves to accept the lowest or any Tender. The Contractor will be required to enter into a bond, with one surety, for the due performance of the Contract, and no work will be ordered under the Contract until such bond has been duly executed.

The Contractor whose Tender is accepted, and with whom a Contract is entered into, will be required to pay to the whole of his workmen such rate of wages, and observe such hours of labour, as are recognised by the Workmen's Trades Unions and in force at the time of signing the Contract. In the event of any breach of such agreement the Council will enforce the penalty clause in its entirety.

By order of the Council,

FRED. E. HILLEARY, Town Clerk.

Town Hall, West Ham, E. 29th August, 1893.

MELTON MOWBRAY LOCAL BOARD PLANTING OF CEMETERY.

The above Local Board INVITE TENDERS for PLANTING the CEMETERY, situate on the Thorpe Road, Melton Mowbray, according to Plans and Specifications, which may be seen at my Office.

Sealed Tenders endorsed "Cemetery," must reach me not later than 12 o'clock noon, on Tuesday, September 19, 1893.

The Board do not bind themselves to accept the lowest or any Tender.

By Order,

RICHARD BARKER, Clerk.

Local Board Offices, 5, Sherard Street,

Melton Mowbray, August 31, 1893.

ORCHIDS.—Many rare and choice Cattleyas, Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST.

W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N.

FOR SALE, a quantity of Large CAMELLIAS, AZALEAS, and FERNS. For particulars, apply to—

T. S., Woodland Cottage, Muswell Hill Road, Highgate, N.

To Seed Merchants and Nurserymen.

MUSHROOM SPAWN.—To be sold cheap, about 300 bushels. Apply to the maker,

E. VINCENT, 45, Lanceland Street, Queen's Park, London, W.

ARUM LILIES.—What offers? 300 strong-flowering Bulbs, and 150 to flower next spring.

S. W. DANBY, Leagrave, near Luton, Beds.

PALMS.—A Lady wishes to sell three fine Palm trees which have become too large for her houses.

—Apply at 2, Addison Road, Kensington, W.

STEPHANOTIS, two good clean, one in large tub, one in large pot four years, to cover 20-foot house. The two for 50s.

A. BRINKMAN, Florist, Great Berkhamsted, Herts.

ARUMS.—Five dozen extra strong Arums from open ground to spare. Would exchange for small Palms, Orchids, or Eucharis. Apply—

COWARD, Haverholme Priory, Sleaford.

Fruiting Vines.

H. LANE AND SON have a large Stock of strong FRUITING BLACK HAMBURGH and other sorts to offer, well ripened, similar to those they have taken many First Prizes and Medals for, at London, Edinburgh, Manchester, &c.

The Nurseries, Berkhamsted, Herts.

CALLA ÆTHIOPIA from the open ground, good stuff for 32's and 24's, 40s. per 100; smaller plants, for 48's, at 25s. per 100; also large quantity of **IMANTOPHYLLUM MINIATA**, from open ground, for 32's and 24's, 18s. and 24s. per dozen.

G. BETHELL, Whiteley's Nurseries, Hillingdon Heath, Uxbridge.

PALMS, FERNS, &c.—FERNS in Variety.—**ARALIAS** and **CYPERUS NATALENSIS** in 48's, 6s. per dozen; **LARGE A. CUNATUM** in 48's, 6s. and 7s. per dozen; **PALMS** in variety, and **FICUS** in 48's, 12s. per dozen; **PALMS**, fine stuff, in large 60's, 5s. per dozen; **FERNS** and **CYPERUS**, in 24 inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order.

LANE AND MARTIN, 227, Brixton Road, London, S.W.

CARNATIONS.

All the best New and Old Varieties.

JAMES DOUGLAS, Great Bookham, Surrey, is now sending out plants from his unrivalled Collection, comprising Bizarres, Flakes, Sells for borders, Picotees, white and yellow grounds. Also a fine stock of blush and pink Malmaisons. The finest varieties selected from all the above classes, 10s. per dozen plants. Seeds saved from the collection, 3s. 6d. per 100, and 2s. for 50 seeds. Extra large winter-flowering Carnations. The trade supplied. Catalogue post free on application.

Plants Shipped to all Parts.

WATSON AND SCULL, 90, Lower Thames Street, London, E.C., give special attention to the reception and forwarding of Plants and Botanical Specimens to and from all parts of the World. Be particular, and have them consigned to our Care, and save Expense and Delay. Dealers in Virgin Cork, Raffia, Bamboo Canes, Garden Sticks, Palm Seeds, &c.

F. V. RASPAIL GERANIUM, strong rooted Cuttings, £2 10s. per 1000, or 6s. per 100. Cash with order.—**BOULTON**, Beechenlea Nursery, Swanley.

CARNATIONS.—Old Crimson Clove, well-rooted layers, 3s. per dozen, 50 for 10s., free. **GRANGE**, Shepperton Green, Middlesex.

LILY OF THE VALLEY (first-class quality), offered by **W. HENNIS**, Florist, Hildesheim, Germany. Price on application.

TEA ROSES.—Maréchal Niel, Climbing Niphotos, W. A. Richardson, Gloire de Dijon, and other climbing sorts, extra fine stuff, in 8-inch pots, with long well-ripened growths; also best Bush sorts, for forcing. Prices on application.

H. B. MAY, Dyson's Lane Nursery, Upper Edmonton. N.B.—Large quantities of the above included in the **AUCTION SALE**, MONDAY, September 11.

BARR'S BULBS.—AUTUMN and WINTER-FLOWERING.—LISTS NOW READY of Beautiful Crocus species, Autumn and Winter-flowering, Autumn Meadow Saffrons, Cyclamen, Guernsey and Belladonna Lilies, White Roman Hyacinths, and other Bulbs for Early Planting. **BARR'S DAFFODIL CATALOGUE** ready in August. **BARR'S GENERAL BULB CATALOGUE** ready Sept. 1. **BARR AND SON**, King Street, Covent Garden, London, W.C.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown Stock of **ERICAS** (Hyemalis and other varieties), **EPACRIS**, **SOLANUMS**, **GENISTAS**, **CYCLAMEN**, **BOUVARDIAS**, of sorts; **ADIANTUM CUNEATUM** and other **FERNS**; **PALMS**, in variety; **GARDENIAS**, **STEPHANOTIS**, **FICUS ELASTICA**, **CROTONS**, **GREVILLEAS**, **TEA ROSES**, in pots; **BORONIAS megastigma** and **heterophylla**. **VINES** in pots, &c., &c. An inspection is invited.

Trade **CATALOGUES** forwarded on application. The **ANNUAL SALE** by **AUCTION** will be held on **TUESDAY**, September 12. **Burnt Ash Road Nurseries**, Lee, S.E.

GILBERT'S STRAWBERRY PLANTS are the acknowledged best in the trade. **LA GROSSE SUCREE** and **VICOMTESSE**, splendid stuff, in 60's, turned out, at 18s. per 100. **WATERLOO**, **BRITISH QUEEN**, **LAXTON'S "SCARLET QUEEN"**, in fact all the best varieties cultivated. Runners of the two former, 4s. per 100, and the latter 6s. per 100. Please send for **LIST**. **R. GILBERT**, High Park Gardens, Stamford.

FERNS! FERNS!!—Trade.—Great Annual Sale. Surplus Stock. 200,000 Stove and Greenhouse in 2½-inch pots, 11s. per 100, 200 for 20s.; 10 best selling sorts in 5-inch pots, 6s. 6d. per dozen; strong seedling, 4s. 6d. per 100. Large A. cuneatum, very fine tops, value in fronds, 6s. and 8s. per dozen. **Cyperus**, **Aralias**, **Grevilleas**, 7s. per dozen; **Palm**, **Ficus**, and **Dracenas**, 1s. each. **P. tremula**, and **A. cuneatum** for making large plants quickly, 16s. and 20s. per 100. Packed free and put on rail for cash with order.—**J. SMITH**, London Fern Nursery, Loughborough Junction, London, S.W.

LAXTON'S STRAWBERRY PLANTS. **STRONG**, well-rooted **RUNNERS** of Noble, 5s.; **Competition**, 10s.; **Scarlet Queen** (richest early), 15s.; **Earliest of All**, 8s.; **Ruskin**, 7s.; **British Queen**, 5s.; **Elton Pine**, 5s.; **J. Veitch**, 5s.; **Commander** (finest flavoured main crop), 7s.; **President**, 5s.; **Paxton**, 5s.; **Dr. Hogg**, 7s.; **Waterloo**, 7s. per 100; also **SENSATION**, new 1892, 8s. doz.;

ROYAL SOVEREIGN, grand new 1893, three Certificates an earlier and improved **Paxton**, flavour very rich, 25 per 100. Full **LIST** from—**LAXTON BROTHERS** (Sons and Successors to the late Thomas Laxton), BEDFORD.

If you want to add to your Collection of **ZONAL PELARCONIUMS (GERANIUMS)** NOW IS THE TIME.

H. J. JONES can supply strong Cuttings of **Finest New Single Varieties** from Pearson's, Miller's, and Cannell's 1893 sets, 1s. each, 9s. per dozen. **Finest Single Varieties**, 1891 and 1892, 3s. per dozen. **Finest Single Varieties**, General Collection, 1s. 6d. per dozen. **Finest New Double Varieties**, including **Raspail Improved**, six for 2s. 6d. **Finest Double Varieties**, General Collection, 1s. 6d. per dozen. ALL FREE FOR CASH WITH ORDER.

H. J. JONES, RYECROFT NURSERY, HITHER GREEN, LEWISHAM, S.E.

ROMNEYA COULTERI.

We have a large stock of this rare and beautiful hardy flowering plant. Commendatory notices have appeared in the Horticultural Journals, and its effectiveness in the Shrubbery is very marked.

Prices, 3s. 6d. and 5s. each; extra strong, 7s. 6d. **DICKSONS, Ltd.**, The Nurseries, Chester.

FRENCH AND DUTCH BULBS.

ROMAN HYACINTHS,
PAPER WHITE NARCISSUS,
LILIUM CANDIDUM, &c.

NAMED and BEDDING HYACINTHS,
TULIPS, CROCUS, SNOWDROPS,
DAFFODILS, &c.

ALL ORDERS CARRIAGE PAID.
CATALOGUES now ready, Post Free on application.

LITTLE & BALLANTYNE,
Queen's Seedsmen, **CARLISLE**.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Everyone can readily grow Mushrooms, and by using this Spawn will ensure success. All growers speak in high praise of the quality. Numerous Testimonials. None genuine unless in sealed packages, and printed cultural directions enclosed with our signature attached.

Price, 6s. per bushel, 1s. extra for package, or, 1s. per cake, free per Parcel Post.

WM. CUTBUSH & SON, Nurserymen and Seed Merchants, Highgate Nurseries, London, N., and Barnet, Herts.

WHINHAM'S INDUSTRY GOOSEBERRY

stands unrivalled. 84 lb. of fruit has been grown on one bush.

10,000 Grand Two-year-old Bushes for delivery in October, 2s. 9d. per dozen, on rail.

I am now booking orders for September and October delivery of surplus plants from my grand collection of **CARNATIONS**—Lists free.

THOMAS H. COLEMAN, Horneybrook Nurseries, SAFFRON WALDEN.

THE BEST BULBS

AT CHEAPEST RATES.

EXTENSIVE COLLECTIONS OF
Hyacinths, Tulips,
Narcissi, Snowdrops,
Lillies, Crocuses, Scillas,
ETC., ETC.

ALL THOROUGHLY RIPENED.
Descriptive Catalogue, No. 428, Post Free on Application.
Delivered Free by Rail or Parcel Post.

DICKSONS Bulb Growers **CHESTER**

CARNATIONS.

Our extensive collections embrace all the best and newest varieties in the various sections of **BORDER, CLOVE, and YELLOW GROUND CARNATIONS** and **PICOTEE**, **SHOW CARNATIONS** and **PICOTEES**, **LACED** and **SELF PINKS**, **TREE** and **WINTER-FLOWERING CARNATIONS**, including the now famous "**DEEP PINK**" and other Malmaisons. Our Handbook, "**Carnations and their Culture**," with full Descriptive **CATALOGUE**, can be had free on application.

LAING & MATHER, Nurserymen,
KELSO-ON-TWEED.

DUTCH BULBS!

FRENCH BULBS!

AND

ENGLISH BULBS!

See our Special Wholesale **CATALOGUE** of **BULBS**. Containing **LIST** of all the best varieties of **HYACINTHS**, **TULIPS**, **CROCUS**, **LILIUMS**, **DAFFODILS**, **SNOWDROPS**, **IRIS**, &c., free on application.

Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,
SEED AND BULB MERCHANTS.

EXETER STREET, STRAND, LONDON, W.C.

HUGH LOW & CO.

Invite inspection of the magnificent Stock of Stove and Greenhouse Plants, Roses, Fruit Trees, and Vines growing in their Nurseries at Clapton and Bush Hill Park, Enfield; all of the finest possible quality. Especially worthy of notice are the following:—

ACACIAS in variety.
AMPELOPSIS.
ARALIAS.
" **VARIEGATA**.
AKAUCARIAS.
ASPIDISTRAS.
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 9, 1893.

CARDIFF CASTLE.

EXCEPT by those who have visited the town during the last few years, Cardiff is thought to be a small place, black and repulsive, through the presence of mines and ironworks immediately surrounding it. It is, therefore necessary briefly to state that Cardiff has so extended itself during the last quarter of a century that her population is now about 130,000, and that in cleanliness, brightness and in her health-statistics, the Welsh metropolis may claim as high distinction as almost any town of equal size, and certainly of any port doing a trade such as is done here.

The collieries are at some distance from Cardiff, and although an immense quantity of coal is shipped from her docks, none of this is from parts within a mile or two of Cardiff.

The famous Castle, therefore, though it adjoins two of the main streets, is not in such a disagreeable position as would be supposed had the above explanation been omitted. Then, again, although the Castle itself is so near the main thoroughfare, the grounds extend right away to Llandaff; and then, on the north-west side of it, is a walk of about 2 miles through private ground, and an open, pretty country. The antiquity of the place itself as a castle is great, for there are many authorities for stating that it was a stronghold of the British princes long before the Norman Conquest, and in the eleventh and twelfth centuries it was the residence of the Lords of Glamorgan, and of Robert Fitzhamon. It passed into the Marquis of Bute's family through a marriage with an heiress of the Windsors, who inherited it from the second Earl of Pembroke, to whom it was granted by Henry VII. after the Battle of Bosworth Field. Cromwell succeeded in partially destroying it, and the old keep (see fig. 52, p. 305), which stands on a lofty artificial mound, is still in ruin, exceedingly picturesque, clad more or less with Ivy, and save what has been necessary in order to preserve it at all, nothing has been done thereto since.

From the top is obtained a lovely view in each direction; on the one side of the town of Cardiff itself, down to the docks, and across the Channel, and on the other an extensive view of the country district, commencing with the scenery along the banks of the Taff through Llandaff, where one of the most ancient of our cathedrals may be seen, and across between the Caerphilly Hills and Castle Coch.

Neither is the Castle itself fully renovated, although a vast amount of money has been expended in that direction by the present Marquis. It is difficult to tell exactly of what age the different parts are, for no doubt there have been partial restorations at many different times; and the whole of the work that has been done by

the present Marquis is on a grand scale, and the aim has been to reproduce all the characteristics of a feudal fortress.

Our illustration (fig. 50, p. 297) shows the gate-house on the right, from which entrance is gained from the street; and the Black Tower, which if not the identical one in which Robert, Duke of Normandy, was incarcerated for twenty-six years, is at least on the same site. From this point westward stretches a high wall, which has been repaired, and the path along the top which forms a corridor is covered in, whilst the apertures between the battlements are furnished with shutters. This wall (fig. 50), which has a south aspect, is covered with Vines, as will be seen from the figure. They are about 40 feet high, and in favourable seasons yield a good crop of Grapes, which are used, together with those from the vineyards—of which more anon—to make the wines for which the Cardiff district is fast becoming famous. The crop on this wall during the present season will be something more than half a ton, and many of the bunches will weigh 2 lb. These are unique, for at no other place in Britain can a similar Vine-covered wall be seen.

At the extreme left of the illustration, and at the south-west angle of the enclosure, rises a clock-tower, with pointed roof, 140 feet high. It is quite new, and contains a number of apartments on its seven floors.

The residential portion of the Castle (fig. 52) runs north from this tower. It is a handsome building, with early English turrets; but we must refrain from speaking of the Castle further, except to say that, in the joiner's shop attached thereto, is a model in wood of the Castle as it is to be when the scheme for its restoration has been fully accomplished; and if ever this is done, it will form one of the most remarkable buildings in the country, but it will require a prodigious expenditure of money.

THE PLEASURE GROUNDS

extend from the north-west side of the Castle, in the direction of the village of Llandaff, and the greater part has been laid out by the present gardener upon ground that in former days was known as "Cooper's Fields." From the Castle they are reached by several ways, one of these by means of a pretty Japanese-bridge across a large moat on this side of the Castle, being especially picturesque; whilst from the west front of the Castle, a wide drive runs through the whole length. Mr. Andrew Pettigrew, who has had charge of the gardens for the last twenty years, has a considerable reputation for landscape-work, and many gardens in South Wales have been laid out from his plans, as well as those attached to the Castle. Proceeding from the Castle we pass over a large expanse of well-kept lawn, which, even during the present season, has suffered but little, probably because the grounds, which are rather narrow, are bounded on the one side by the river Taff, and on the other by "the feeder." The feeder is a large body of water, diverted from the river about one mile and a half from the Castle by means of a weir, and passes by means of a canal to the docks at the other end of the town, a distance of about three miles. Near the Castle there is no flower-garden after the usual style; but here and there throughout the grounds, there are long herbaceous borders and isolated beds, often exceptionally large, and some filled with Pelargoniums. Four of these large beds are immediately under the Castle wall, three of them on the slope which intervenes between the Vine-wall, seen on fig. 50, and the public street. In the summer they are usually filled with tricolor Pelargoniums. On the west side, and immediately under a high old wall, along the top of which is a walk known as "The Lady's," are a number of small beds of different shape, also on a steep slope, and filled with the

usual summer bedding-plants. Plantations of Conifers, and choice shrubs, as they become older and larger, will add very considerably to the appearance of the grounds, by preventing too great a part being exposed to the view from any one point, although in this respect they are not greatly deficient even now. The area thus laid out is about 35 acres; and, at the end of this, is a wild, yet picturesque waste, which it is expected will also be reclaimed and kept in trim order.

The Marquis of Bute is an enthusiastic antiquarian, and a few years since a great amount of excavation was effected, with a view to find the foundations of an old monastery which it was thought stood but a short distance from the Castle on the south-west. This work proved quite successful, and the whole plan of the buildings is now to be seen, for the foundations have been repaired and built up about 3 feet above the ground. It is now intended to place a fountain in the largest room—the chapel; and the tops of the walls are so made as to hold a good quantity of soil, in which flowers will be planted, and the whole made to look as much in keeping with the grounds as is possible. Nor was the Marquis content upon finding and restoring so much, for, at the present time, he is searching for similar foundations in another part of the grounds, separated from these by a public road; and it appears that equal success will be achieved here.

THE FRUIT, FORCING AND PLANT HOUSES

are in good condition, and several of them are tolerably new, the work of Messrs. Boyd & Sons. The principal vinery is a good span-roofed house in two divisions, one of these being almost entirely devoted to Foster's Seedling, a Grape of which Mr. Pettigrew thinks highly, raising it from the position it holds in the opinion of most gardeners to that of the first-class, and as grown here it is undoubtedly superior to the variety as it is generally met with.

Black Alicante, Black Hamburgh, Alnwick Seedling, Muscat, and Gros Colmar are also present, and invariably give a good crop. As in the pleasure-grounds and every other part of the garden, neatness is noticeable. The houses are kept scrupulously clean, and are well attended to in every particular. There is only one Peach-house, a lean-to, covered with large trees, which but seldom fail in carrying a heavy crop, though they are very susceptible to red-spider.

This together with an old Vinery are the only lean-to houses on the place; the others are all span-roofed. There are two stoves, one of which is always gay in the summer time, from the presence of an old Allamanda which run along the roof from one end to the other. It is filled with general stove subjects, including some well-grown Crotons, and two exceptionally large pots of Eucharis, which produce an abundance of bloom throughout the year. Two good and large Cycads, and some fine Dracenas are also noticeable. But few Orchids are grown, and these are chiefly Dendrobiums and Cypripediums; and some plants of Peristeria elata are very fine, producing stout, long spikes of bloom each year.

The other stove is about the same size, and contains another good lot of Crotons and Dracenas. A large house is devoted to the accommodation of Palms, which are extensively used in the furnishing of the Castle, and for church decoration. There are some good examples, but the continual moving to which they are subjected is greatly prejudicial, and most of the decorative plants here have to be grown with a view to using them for this purpose.

The greenhouses are kept gay with old-fashioned flowers, that are not met with so often as they might be, and in the spring a batch of Hydrangeas, struck in the previous autumn, always creates a remarkable display.

Pine-apples and Melons are grown well and largely, the former in a first-class range of pits, where some very heavy fruits are produced; Melons at the front of several of the warm houses, and in one long, low, span-roofed house, where Cucumbers and Tomatoes do equally well. Those who have seen

the Melons grown at this place are not likely soon to forget them, for we have never seen Melons so large nor so abundant. One of the best varieties grown is one raised here and called Cardiff Castle, a now generally well-known and appreciated variety.

The culture Melons receive here differs materially from that generally practised, and principally in two particulars. They are watered up to and during the time the fruits are ripening, and sometimes the plants are started again for a succession crop. Cardiff Castle Cucumber is also worthy of mention here; it is not a large fruit, but a medium and pretty one, and a good cropper.

THE FRUIT AND VEGETABLE GARDEN

consists of about 6 acres, 2 of which surround the houses, and the other 4 have been made in a corner of the park, about a quarter of a mile distant. Whether in the smaller garden or the one in the park, and known as "the top" garden, the fruit trees are extraordinary; the walls are covered with fine healthy trees, principally Pears, trained with great care, and presenting perfect pictures of fertility.

In a town garden such as this, the results achieved are surprising, for it would be difficult to find a place where Pears grow and fruit better. Take, for instance, those splendid pyramidal trees, more especially those in the top garden, of Pitmaaston Duchess, which have reached a height of 30 feet, and which bear abundance of fine fruits each year. The crop this season is large, though the fruit is rather smaller than usual. Fruits of Pitmaaston Duchess and General Todtleben have weighed as much as 20 ozs. each, and this without thinning, for we believe this is not generally practised. Any fruit-grower travelling this way should call and see the pyramidal and bush trees of Pears and Apples. Mr. Pettigrew prefers the bush form, and most of the Apple, as well as many of the Pear trees, are so trained. All were planted as maidens, and the foundation of the future trees laid by himself. But few, if any, of the newer varieties of Pears and Apples are unrepresented, but this year, among the Apples, two varieties that struck us most by the heavy crops they were carrying were Blenheim Orange and Cox's Orange Pippin. Lord Suffield is one of the best croppers in the garden as a rule, and is not so liable to canker as in most places; the fruits often weigh as much as one pound each. Beurrié Diel is a Pear that, in the top garden on large pyramidal trees, does not give such good returns as many of the others, but is good this year. In some seasons the fruits crack badly, apparently the effect of cold winds [Fungus, probably, Ed.] for on the walls Pears are far less subject to this disfigurement.

All the trees are well syringed with paraffin and soapy-water in the winter-time, and if any of them are covered with lichen, they are well scrubbed. Root-pruning is seldom necessary, indeed the gardener has only root-pruned one tree in eighteen years, and in this case alterations made its removal imperative before sufficient time had elapsed to show whether its effect would be beneficial or not. Close pruning is avoided, and a free growth encouraged. Plums do well on walls and on standards. It is a very remarkable circumstance, that not a Gooseberry bush exists in the whole garden. Currants, Raspberries, and Strawberries succeed well. The fruit-room, which for such a place should be a large, well-appointed room, is quite inadequate for the produce. The kitchen garden is arranged in suitable plots, and is well cropped with all the usual kinds of vegetables.

THE VINEYARDS.

The most interesting picture of the place at the present time are the vineyards—the one at Castle Coch, and the other at Swanbridge. The cultivation of the Vine in South Wales for the making of wine originated from an idea of the Marquis, which was the outcome of his study of ancient Wales. There is clear proof that in "times long ago" the monks made wine from Grapes grown in the district. The Marquis was anxious to revive the industry if possible, and with that object Mr. Pettigrew was sent to France to acquire a knowledge of

the methods of culture pursued in that country, with the result that those Vines now cultivated in vineyards near Cardiff are planted and attended to on French methods. Briefly stated, it is as follows. The Vines are all propagated from cuttings, which are struck in the Castle gardens, as they do very much better the first year sheltered thus, than in the open field. When transplanted to the vineyards at three years old, they are put out in rows about one yard and a half distant, and one yard between each plant. A stout stake is driven down near each plant, and left from 3 to 4 feet high. To this the plant is tied during the summer. Each year the canes are cut-back to two eyes, and so for a good number of years the fruit will be annually produced not far from the ground. On some of the older ones there are five, six, or more canes, allowed to go to the top of the stake, where they are stopped in July and tied, and this is all the attention they require, except the stopping of laterals. The variety chiefly grown is the French Gammy Noir, but two years ago some cuttings of an American variety were received from Florida.

subsequent one. However, the crop of this year is greatly superior even to that, the hot dry summer that was so prejudicial to most crops having produced the exact conditions required. Not a trace of red-spider could be seen, and the leaves are thick and the stems strong. Many of the Vines are carrying as many as fifteen good-sized bunches of fruit, and when these lines appear in print, they will be nearly ripe enough for cutting. As nearly as the a crop can be estimated, it is thought that it will be something like 20 or 30 tons.

Mr. Pettigrew thinks that with a season like the present every few years, Vine-growing in South Wales would form a paying industry, for the crops this year will cover the rent of the land ever since they were planted, and the cost of all labour yet expended upon them. Of the quality and value of the wines made from these vineyards, some idea may be gained from the fact that a few months ago a quantity was sold at 115s. per dozen bottles. This wine was eleven years old. [Some that we had the opportunity of tasting through the kindness of Mr. Pettigrew, reminded us strongly of Barsac or Haut Sauterne. ED.]

halves being strangely mottled with purple on a light greenish-yellow ground. The labellum is formed, as in *C. villosum* Boxalli (*C. Boxalli*, Rehb. f.), creamy-white, with the upper portion of the face rosy-purple. The lower sepals, which are longer than usual in the species, are very pale green, with four or five rows of purple blotches in lines from the base. It is a richly-coloured and bold-looking flower, which is much to the florist; but to the botanist it is of greater interest, as it is an unmistakable connecting link between *C. villosum* and *C. Boxalli*, distinctly proving the two to be one and the same species. It was imported by Messrs. F. Sander & Co., I am told, with plants of true *C. villosum*, and was selected to prove on account of a something in its appearance by which an expert may, as it were, instinctively select a new variety, although he may never be able to explain what influenced him in the selection. It is named in honour of R. H. Measures, Esq., The Woodlands, Streatham, one of the first and most constant lovers of the favourite genus *Cypripedium*. James O'Brien.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BELVEDERE, BRIGHTON.

JAMES ASHDOWN, Esq., has long been known for the interest which he takes in the horticulture of the locality in which he resides, and the pride he takes in the small garden surrounding his house in the Ditchling Road. Of late he has turned his attention to Orchids, beginning cautiously, and buying only odd lots and small plants on which to experiment. Often has a smile passed over the features of the frequenters of Messrs. Protheroe & Morris' Rooms as a box of specially dried-up scraps has, on the fall of the hammer, been declared for "Ashdown;" but if they who then saw the plants at their worst were to observe them in the Orchid-house existing at Belvedere, in company of their enthusiastic owner, and his no less interested wife, they would be astonished at the wonders worked on plants which many persons have doubtless thought fit only for the rubbish-heap, and the singular, though evidently appropriate means, by which their resuscitation has been accomplished. Mr. Ashdown was good enough to give us his experience of a few important details which he had always found essential in establishing imported Orchids, good or bad, his own plants serving admirably to illustrate the lesson.

First, then, he never pots, blocks, or places any moss or any other material to any imported Orchid until it has shown by producing roots, and exhibiting a tendency to make growth, that it is in a position to imbibe a greater amount of moisture than is contained in the somewhat humid atmosphere in which he always suspends them at first.

The second stage of treatment is arrived at when roots are actually pushing, and growth appearing, when the plants are removed from their head-downward position on the irregular wire screen which runs down the middle of the house; a small quantity of sphagnum moss is lightly bound among the roots, and they are again suspended from the screen, but this time root downward.

When the final stage has arrived, and the plants by their abundant roots and more active growth tell him that they may now be placed as they are to grow henceforth, Mr. Ashdown, for the first time, varies the treatment, in order to suit the different genera, and various and singular are some of the expedients adopted; but all are alike successful, for that they are the invention of one who seems intuitively to understand the requirements of the plants.

In the final arrangement, the *Odontoglossums*, &c., are potted up; but many species which are supposed to thrive only in pots, such as *Zygopetalums*, *Masdevallias*, and similar Orchids, are grown on cones of sphagnum and peat, supported on discs of zinc, and suspended by wires, in the same manner as the plants in baskets are. A great number of the plants, however, are grown suspended,

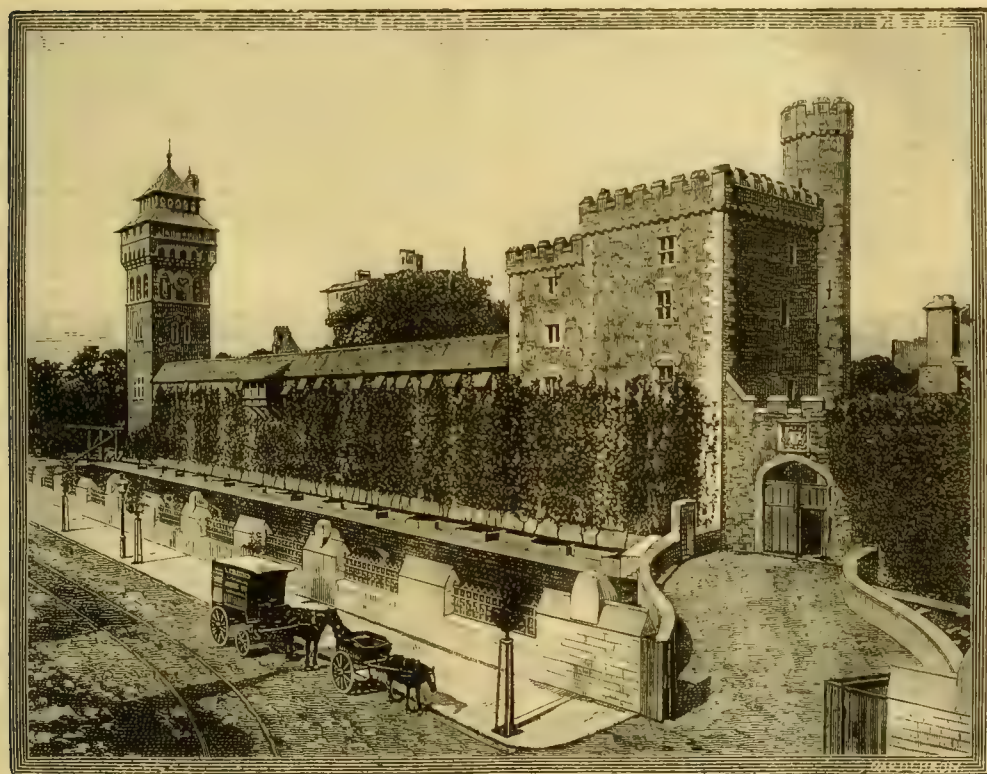


FIG. 50.—THE VINE CLAD WALL, CARDIFF CASTLE. (SEE P. 296.)

At present the latter are not bearing so freely as the others, but the bunches and berries are much larger, and they will be given more time to show their characteristics, as they may bear freely enough when a little older. At Castle Coch, which is 5 miles from Cardiff, there are 4 acres planted, and most of them have been out about seven years. The vineyard is situated on a steep slope facing south, and a dense wood behind completely shelters it from the north. The soil is a red loam, and stones are very abundant in it. Swanbridge is about 7 miles from Cardiff, and lies close to the sea-beach. The slope is not nearly so steep here, but the soil is very stony, and in places not more than 1 foot deep before the hard rock is reached. The Vines are younger here, and planting is continued each year, and this vineyard will most likely be the better of the two. We have seen the Vines during two or three seasons, but they did not present the appearance that they do now. The best season experienced prior to this was 1887, and the wine made from that vintage was better in quality than any

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM VILLOSUM VAR. MEASURESIANUM, new var.

In this extraordinary plant is to be seen that which I have expected for a long time past, but it was none the less surprising when I came upon it in the private Orchid-houses of Messrs. F. Sander & Co., at St. Albans. It will simplify matters if I at once state that the variety under notice is in every respect a very fine form of the typical *C. villosum*, with, as it were, the colouring of *C. Boxalli atratum*, showing through it as one sees a design on a lighter ground in a stained-glass window. In every respect, so far as form goes, except in the narrower and more angular labellum, it is a true *C. villosum*. The upper sepal has a white ciliate margin, below that the colour is purple on a greenish-yellow ground, the base having black blotches on a glossy purple body colour. The petals have the dark shining Indian-yellow on their upper halves, as in ordinary *C. villosum*; the lower

and without basket or block, but simply with a ball of sphagnum for them to root in, and this is added to as may be required. Among the specimens, many curious things may be found, such as *Pleurothallis*, *Polystachyas*, *Hartwegia purpurea*, *Stanhopeas*, &c., while among the showy ones we noted *Vanda teres*, growing grandly in cylinders; *Lælia tenebrosa*, different forms of *Lælia anceps*, and other showy *Lælias*, numbers of *Cattleyas*, among which the *C. labiata vera* predominate, numbers of *Dendrobiums*, and, indeed, of most other things of recent importation, and out of which some new varieties will doubtless flower. One thing that proves the correctness of Mr. Ashdown's treatment is the profusion of foreign plants, seeds of which have come on the roots of the Orchids, which come up with them, *Tillandsias*, *Solanums*, *Gesneriads*, and *Melastomads*, &c.; on one plant alone we noted three distinct species.

The greatest triumph of cultural skill, perhaps, is a giant *Sobralia*, which bears hundreds of flowers in the season, each flower 8 inches across—probably *S. Warszewiczii*, and yet it and a plant of *Aërides Fieldingii* were bought at auction years ago for less than a crown; that may be called growing an Orchid. The house has a pretty rustic arch at one end, clad with *Hoya carnosæ*, *Asparagus plumosus*, *Epiphyllums*, *Ferns*, and foliage plants. Around the sides run staging where Orchids are grown mixed with *Gloxinias*, *Begonias*, *Veltheimia glauca*, and other curious bulbs, *Anthuriums*, and many odd and rare plants; and at one end a small collection of *Stapelias*, *Opuntias*, *Cereus*, &c. Up the middle of the house many wires are strained, in some places several deep, and these are added to as required for the treatment of freshly arrived Orchids, and which form, as it were, a partition down the middle of the house, but which does not obstruct the view from side to side. Here hundreds of little Orchids are doing marvellously, and their culture might well convey lessons to many who already think they know all about it. But let no visitor think we are noticing a fine collection of Orchids, for the *Sobralia* already mentioned is the only large plant in the house; what we are glad to point out is, that much pleasure can be got out of Orchids for a very moderate cost, and Mr. Ashdown's garden affords the best example we have seen.

CATTELEYA × HARDYANA.

A three-flowered inflorescence of a superb form of this fine natural hybrid *Cattleya* comes from the collection of Walter C. Clark, Esq., Orleans House, Sefton Park, Liverpool. The flowers are large, of fine substance, and of glowing colour. It differs from other forms of *C. Hardyana* in having darker-coloured sepals and petals, which have all the veining shown up by being of a darker hue than the ground-colour, which in places is nearly white. The front of the lip is broad and circular in outline, and finely crimped, of an intense crimson-purple, the centre rich orange colour. The variety is very fragrant, which still adds to its great attractions. It was an imported plant, bought as *C. aurea*, but unflowered, from Messrs. F. Sander & Co., St. Albans.

FORESTRY.

THE EFFECT OF DROUGHT ON THE GROWTH OF TREES.

THE extremely dry season has been very unfavourable to the growth of freshly-planted trees, and many of them have suffered considerably. The easterly winds which prevailed in the early spring are also responsible for the destruction of many trees, especially *Conifers*, planted on shingly or gravelly soils. Only on low-lying, peaty, or clayey soils, have any new plantations retained their green appearance; nothing but great patches of brown dead leaves meet the eye elsewhere, and in great areas planted last year much will have to be re-planted.

A great obstacle to raising plantations of trees on Heath-land are the constantly-recurring fires, which break out, and extend with amazing rapidity, before

they can be extinguished. These fires usually kill the young trees, and, in some cases, large ones.

It is advisable to keep strict watch night and day during dry weather, so that the fire can be dealt with quickly. It is a good plan to break up the ground for a width of at least 50 feet around any plantations, so as to form a barrier against fire extending from unplanted to planted land. *John Garbett, Canford Woods.*

A TRAVELLER'S NOTES.

(Continued from p. 180.)

TOKYO.—I have obtained sixty specimens of Japanese woods, varying in weight, grain, colour, and other details, noticeable on close observation; and also a representative lot of Bamboos. Cereals and silks I have in hand.

Chamaerops excelsa grows with great freedom in Japan, and is now flowering freely. The stipulate fibre at the base of the leaves, as well as the strong base itself, is of economic value; therefrom are manufactured brooms, brushes, twine, strong rope, most serviceable door-mats, &c. I recently bought all the products of this fibre I could hear of; it will make a most interesting exhibit. [Many of these were shown at the Temple Show]. The most famous place in Japan for *Wistarias* is the Temple of *Temmanju* at *Kameido*, a suburb of this vast city.

Round a pond (bridged by a characteristic semi-circular Japanese stone bridge) in front of the temple are numerous plants, both of the white and blue *Wistaria*, trained on a flat Bamboo support about 6 feet from the ground. These trees, of great age, produce many hundreds of racemes each, from 15 to 18 inches in length; they hang down through their trellised roof in the most glorious profusion, and present certainly one of the most beautiful floral sights of Japan. The white variety, known as *W. brachybotrys*, seems to flower a week later, but the plants are equally old and equally profuse with their magnificent racemes. Beneath these *Wistarias* are many low, broad benches, on which the Japanese sit, sipping their tea and smoking. Round the pond play many children, feeding the carp and gold fish; whilst through the centre of the grounds, over the semi-circular stone bridge wends the ever-constant stream of *Thintoists* going to worship *Sugawara-no-Michizane* in the Temple known as *Temman Daijizai*, "The Perfectly Free and Heaven-filling Heavenly Divinity." [See fig. in *Gardeners' Chronicle*, Feb. 25, 1893, p. 233.]

One of the most curious sights of Tokyo is the *Oji-zo-sams*, a fair held nightly in various parts of the city, at which are sold toys, plants, &c. The flower and plant stalls are most numerous. The fair, if it may so be called, is held in this quarter, not a stone's-throw from the outer moat of the Imperial Palace, and along the "Giuza," the great main artery of Tokyo, on the 7th, 18th, and 29th of each month, always at night. That held on the 18th inst. I visited, and rarely saw a more striking spectacle.

Along each side of many streets were arranged booths, in front of each flaring lamps, giving a strange colour to the Pines, the *Pinks*, the *Ardisia berries*, and the delicate *Tea Roses*. On a low seat sat the owner, a peasant, the poorest of the poor, selling at absurdly low prices, the productions of his bit of ground, situated somewhere on the outskirts of the city. Ever to and fro wandered a thick crowd of the poorest classes, clean in person, for no Jap is anything else, but wearing clothes old and worn, betokening their lowly state. Often one saw people carrying away their purchases, an old woman, bent with age, carefully bearing off an old Pine, as bent, crooked and old as herself; or a young girl with a child strapped on her back, carrying in her hands a porcelain tray, in which would be a piece of stone, resembling a rock; on its sides a stone lantern or two, at its base a small house; round it, pebbles, to be subsequently covered with water to make a lake; on its summit a clump of fresh, green, growing *Acorus gramineus*, a toy and a plant, nature and art in one, a lake, rock, house, lantern and forest reduced to the space of a dozen square inches.

The *Pinks* were lovely—splendidly cultivated. The *Ardisia crista* was well berried. *Potentilla fruticosa* was amongst the flowering plants, though the most numerous of all were *Roses*. *Pines*, *Retinosporas* and *Cycas* were the favourites amongst the non-flowering plants.

A curious sight, watching all this—the glare of the lamps, the stalls, the thick crowd, sometimes impassable, the noise of the vendors praising their plants, the purchasers quarrelling over the price, the ceaseless clack-clack of the wooden shoes, the con-

stant laughter on all sides; now varied by a sabred policeman, scarcely over 5 feet, removing firmly some unfortunate who had partaken too freely of *saké*; now by a band of socialists pushing and elbowing their way through the harmless throng, a proceeding which made the second secretary to the American Legation say, "Keep together—that's a bad lot." *Osmunda regalis* is now commencing to flower, noteworthy as its young flowering shoots, warmed through and eaten with sauce, form a most palatable dish. The scales of young *Lily* bulbs with melted butter, a dish I have only seen at *Kyoto*, is also not at all unpleasant. The shoots of a small-growing Bamboo, when plucked young and treated in the Japanese fashion, are firm and crisp, forming an excellent vegetable.

The Botanic Gardens.—The herbaceous grounds and shrubbery are very full of labels, but of little else. Amongst the trees now flowering, a foremost place must be given to *Cornus macrophylla*, the whole extent of its long spreading branches is covered with flat heads of white flowers; it is a striking tree. *Styrax Obassia* is commencing to push. I note that it flowers here far more freely than with us; it is no exaggeration to say almost as freely as *S. japonica* does at *Coombe Wood*. *S. japonica* is later, from seven to ten days, and, as you can imagine, marvellously free.

Pinus koraiensis is very handsome. I have, so far, seen none but small specimens, but in this condition I prefer it to any of the four *Pines* found in Japan. Many of the quarters in which the trees are planted in straight rows are edged with *Bletia hyacinthina*, both red and white, now freely flowering. Tea is also used. It bears clipping, and forms a continuous, close, strong edging some 8 inches high. Amongst other flowering trees now to be noticed is *Robinia Pseud-acacia*, used for avenues; in this respect often alternated with *Weeping Willows*. Both are most cruelly pruned, the heads being cut till they are flat. *Halesia corymbosa* and *Gleditschia japonica* are full of bud, and promise to be fine shortly. *Spiræa Thunbergia* and *S. prunifolia* were over; but *S. cantonensis* (our *Reevesiana*) and *S. betulifolia* were in full glory—truly handsome shrubs. *Menziesia pentanra* (a red *Enkianthus japonicus*, as far as I could see) was exceedingly pretty, as free and not unlike *Pieris japonica*, with flowers of a pleasing dull red colour, the stalks of the young shoots being also quite red.

Certainly the most striking thing in the Botanic Gardens is the landscape garden, in pure Japanese style, situated on the side of a low hill, with a most picturesque lake at the bottom; it is most favourably placed, and one of the best pieces of work I have seen. The hill, backed by Oaks, *Abies firma*, and other large trees, is covered with many hundred perfectly-clipped thick bushes of *Enkianthus japonicus*, now a lively green with their young shoots; amongst these are young *Pines* and *Maples*. Over the lake hang flat trained and twisted *Pines*; where it narrows are stone bridges, or large flat stones in the water for one to walk over, whilst on the bank facing the hill is a tea-house, where the Japs sit and moon away their idle hours.

A Rose Nursery.—It being now the season for *Roses*, with an introductory card I called on the man bearing the reputation of being the leading grower in Tokyo.

His nursery is situated in a district apart from all others I had as yet been in, but as full of nurseries as any other. The number of such establishments round Tokyo is very great. It is difficult to form even an approximate estimate of the number, but that it exceeds that of the growers at *Boskoop*, *Ghent*, the bulb grounds of *Holland*, and the seed-growers round *Erfurt* or *Quedlinburg*, is, I think, clear.

It is easy to wander for a day from nursery to nursery in one district alone, return the next day and continue one's walk, and yet never enter a previously-visited establishment. Most are neat and clean, and contain a stock, the striking similarity of which I have already referred to.

In all the districts, *Pines* and *Retinosporas* in pots, form by far the largest percentage of cultivated plants. In some, much care is devoted to *Plums* and *Cherries*, in others *Oranges* are a leading feature; whilst in those establishments above the ordinary, young plants of nearly all those our leading men in England are acquainted with, may be generally noticed in an afternoon's stroll.

The *Roses* are chiefly *Teas*, and certainly not the latest European varieties. As might be expected, they grow with great freedom, often make large bushes, and flower in profusion. They are pruned long, as in India, in my opinion too long to make

smart plants, but so well is the wood ripened that the plants do not suffer. Japan is not 20° nearer the equator than our country for nothing.

Variegated plants are much cultivated. *Podocarpus*, *Ophiopogon*, *Cleyera*, *Quercus cuspidata*, *Daphniphyllum*, *Pittosporum Tobira*, *Ilex latifolia*, *Eriobotrya japonica*, are amongst those most frequently seen, many producing both silver and golden variegated forms. *James H. Veitch*.

(To be continued.)

NOTES FROM KEW.

NYPHÆA LAYDEKERI VAR. *ROSEA*.—This beautiful Water Lily is a worthy addition. It is in bloom in the Water Lily-house at Kew, and is one of the more interesting kinds in flower in that fine collection. The flowers are not large, but of pretty shape, and when first expanded they are of a pink colour, which deepens with age to crimson. Japan has given us few more interesting plants, and we hope that it will succeed in a lower temperature than the house at Kew, so that it may be grown by those who have not such convenience. *T.*

NOTES FROM ANTIBES.

OUR old and valued *confrère* and contributor, Mr. Naudin, sends us from Antibes notes of two plants, his success with which he ascribes to the favourable climate of Provence. He says:—"The first is *Beachorneria Parmentieri*, which, according to M. Ed. André, should be called *Agave Roetzlii*, or *Fourcroya Roetzlii*, after having been already successively named *Roetzlia regia*, *R. bulbifera*, *Yucca Parmentieri*, *Y. Toneliana*, *Y. argyrophylla*, and then *Beachorneria Parmentieri*! The plant is from thirty-two to thirty-three years old. It has a single stem 8 feet high, crowned with a dense tuft of long, glaucous, entire leaves. In May, from the summit of this stem there arose a pyramidal panicle with long branches covered with white flowers, to which succeeded hundreds of ovoid fruits, which hung down like large Plums from all the secondary ramifications of the branches. This wonderful panicle, such as I have never before seen, grew in a few days to a height of 23 feet; this measurement, joined to the 8 feet of stem, gives us a total of more than 30 feet as the height of the entire plant. At the time of flowering it was truly splendid. The white flowers opened widely, and so differed much from those of *Agaves*, suggesting a little the blossoms of a *Tuberosa*. A not less curious fact is, that besides the fruits this inflorescence produces thousands of bulbils, which present the appearance of a large green and leafy panicle; these bulbils falling to the ground take root there, and thus the plant has therefore a two-fold method of reproduction. [Is this not *Fourcroya Bedinghausii* Koch, Baker, *Amaryllids*, 203; *Gard. Chron.*, April 18, 1891, fig. 99?]

A NEW DATE PALM.

"The other plant of which I wish to tell you is more important to us. It is a *Phoenix*, found in a garden at Nice, and bearing splendid clusters of Dates, black as ink, of the size of ordinary African Dates, fleshy, soft, and luscious, some containing stones, others with none, and all eatable. I look upon this new Date as a valuable acquisition for Provence, which will thus find, I hope, a fruit for future exportation. But, botanically speaking, what is this Date? No one knows. I have some reason for believing that it is a large-fruited variety of *Phoenix senegalensis*, characterised by the black colour of the fruits, which are the size of Olives; but it is also quite as likely that this is a hybrid of *senegalensis* and *dactylifera*. The chief thing is to multiply this variety, either by the seeds in the stones (whereby a doubtful result would ensue), or more surely by planting suckers or slips from the roots of the tree, if these are produced. All the *Phoenix*, cultivated or wild, hybridise one with another with the greatest ease, so that we can never be certain whether we have before us specific types or hybrids. I have given to our new Date the name of *Phoenix melanocarpa*. *Charles Naudin*."

SAXIFRAGA MACNABIANA ×.

It is somewhat astonishing to find that this handsome Saxifrage is not very well known at present especially as it seems to possess all the qualities desirable to render it popular in the rockery or herbaceous border. On looking up its history, I find it mentioned by Mr. R. Lindsay in the *Gardeners' Chronicle*, June 13, 1885, p. 770, where it is stated that *S. Macnabiana* is a garden hybrid, raised in the Botanic Gardens, Edinburgh, in 1875, from seeds produced on *S. pyramidalis*—or as it was misleadingly called *S. nepalensis*. The pollen parent is supposed to be *S. lingulata* by some, and *S. Hostii* by others; but it would be difficult to decide this point unless by means of experiment, as has been done in the case of some Orchids the parentage of which was at one time doubtful. In all probability, the plant



FIG. 51.—SAXIFRAGA MACNABIANA ×.

was brought under notice on the above occasion owing to the fact that a plant was submitted to the Floral Committee of the Royal Horticultural Society in May, 1885, when it received a First-class Certificate. Since then very little or nothing at all appears to have been said in the horticultural press about it, nor is it mentioned in Mr. Nicholson's *Dictionary*, and this leads me to the conclusion that it has not yet been propagated sufficiently to become common. In June last year at one of the Royal Horticultural Society's meetings in the Drill Hall, Westminster, among a group of hardy plants contributed by Messrs. Paul & Son of Chesham, I espied *S. Macnabiana*, and, considering it a remarkably pretty little plant, hastened to portray it as well as I could in my sketch-book, from which the accompanying illustration has now been prepared. At the same time I noted the following points:—*S. Macnabiana* is dwarf and caespitose in habit; it has lanceolate leaves, with whitish serrated

margins, and a somewhat furfuraceous or powdery surface. The peduncle is stout and strong, erect, but not tall, and is clothed with hairs, each of which has a globular gland at the tip. The flowers are borne freely, and look strikingly pretty, owing to the fact that their pure whiteness is relieved by numerous specks of rose or crimson on the lower half of the petals.

It may be mentioned that *S. Macnabiana* is not the only hybrid Saxifrage known. Mr. J. G. Baker of Kew, who contributed a valuable paper on "Saxifrages" to vol. xi. of the Royal Horticultural Society's *Journal*, gives a list of fourteen hybrid Saxifrages, with their parentage. In the same volume Mr. George Paul dilates on the culture of this useful genus; and, by the way, he just mentions the subject of this article. In addition to this, Mr. G. Renthe contributes a very interesting paper on the same subject; and the whole being in a handy and concise form, should prove most valuable to those who take a keen interest in Saxifrages. *John Weathers*.

FUNGI ON MUSHROOM-BEDS.

GARDENERS are sometimes puzzled to account for the appearance on their Mushroom-beds of certain forms of fungi which are not Mushrooms, but which occupy the place and effectually diminish, if not entirely supersede, the crop for which they had carefully provided. We have heard strong invectives applied to those who have supplied the "bricks," to the effect that they have substituted an inferior article, and hence that their consignments are untrustworthy. In this connection, it is only fair to remember that one or two instances of failures of this kind are by no means evidence that the spawn was intrinsically bad or mixed. It must be demonstrated that the majority of the consignments of any given salesman have failed, in order to fix any blame upon the vendors, and yet this is not done before the blame is settled upon the "spawn" and its providers. Suppose a firm to distribute "bricks" to a hundred purchasers, and only three are known to have failed, whilst the residue may be assumed to have succeeded, it would undoubtedly be unjust to shift the mishap upon the vendors. Moreover, it is not the kind of mishap which can be attributed to bad spawn, that it should produce fungi of another kind, but rather that it should fail to produce fungi at all. It is just one of those problems which requires to be solved, whether any other species of *Agaric* can be cultivated artificially by means of prepared "bricks." Hitherto the possibility has not been demonstrated. How then, it will be asked, are we to account for the occasional appearance, in considerable numbers, of totally different species of *Agaric* upon Mushroom-beds, properly constructed? We should reply that, in such cases, the cause is a local one, and must be sought within the confines of the Mushroom-house, and not attributed to mixed spawn. No one would desire to dogmatise on a subject which is involved in so much mystery, but the comparative rareness of such phenomena point to local causes.

One of the most common species which has been known to invade Mushroom-beds, is a small and rather slender white *Agaric*, with white gills and white spores, which usually grows in dense tufts, sometimes on old Mushroom-beds which have already furnished a good crop of the true cultivated Mushroom, and sometimes on beds which have not produced a Mushroom at all. This particular species is *Agaricus (Clitocybe) dealbatus* (figured in the *Gardeners' Chronicle*, 1861, p. 312), a fungus which, in its normal condition, is to be found in woods, Fir plantations, and on dead leaves. The cap is of an average diameter of 2 inches, flattened, and then depressed, with a wavy and irregular margin; the gills are thin and crowded, attached to, and running a little down the thin stem. The odour is rather faint and mealy, and the taste pleasant. It is not only perfectly harmless, but is decidedly edible, and furnishes a very delicate dish of a much milder and less pronounced flavour than the cultivated Mush-

room, although not possessing any marketable value. By what means does this species, which is a lover of woods, become introduced into Mushroom-houses? We can only suggest, as a possibility, that dead leaves, containing spawn, or spores, may have been used in the construction of the beds, for there can be no suspicion that the mycelium, or the germs, were concealed in the artificial Mushroom-spawn, as, in its natural state, it is never found growing upon dung.

A few years since, Mr. Worthington Smith announced the discovery of a larger Agaric, and one of a dangerous character, which invaded a Mushroom bed. The gills are at first whitish, becoming dingy with age, and the spores of a pale dingy clay-colour. In external appearance this *Agaricus fastibilis** somewhat resembles a Mushroom, but the gills are never so dark, and there is not such a distinct ring around the stem, only a circlet of delicate threads. The cap is 2 inches or more in diameter, of a pale yellowish or tan colour, and rather thick and fleshy, but quite smooth and even, and seldom depressed in the centre. The stem will reach 2 or 3 inches in length, and about half-an-inch in thickness, rather thicker at the base, solid within, and externally whitish, clad with white scales at the apex. Usually, two or three specimens grow together in a tuft, but sometimes they are solitary. The odour and taste is something like that of Radishes, but the odour becomes stronger with age, when it is distinctly heavy and unpleasant. This is one of the species of which the universal impression is that it is dangerous to be eaten, and when the full odour is taken into account, few would be induced to test it. Dr. Lambotte writes, that in Belgium it is regarded as poisonous, and Cordier that in France it is suspected, whilst Gilet stigmatises it as poisonous. In its natural state this species grows on the ground in woods, but is not particularly common, or not so much so as another species, *A. crustuliniformis*, which it much resembles. As it does not grow on dead leaves, its occurrence on Mushroom-beds cannot be included in the same hypothesis as the preceding species.

Quite recently, a tufted Agaric, which was too dilapidated when it reached us to determine the species, came up plentifully on a Mushroom-bed, in consort with the Mushroom. It certainly was new to us in such a locality, and had the appearance of belonging to the sub-genus *Hypoholoma*. Dense clusters of six or eight stems, of about the thickness of wheat-straw, and 3 inches in length, supported convex caps of not more than an inch in diameter, smooth, and of a tan-colour, turning black with age. The gills were broad, and nearly black, and the spores dark brown, under the microscope (about 8 by 5 μ); the stems thickest at the base, and clothed half-way up with a dense, closely-addressed white down, at the top yellowish-brown, and longitudinally striate. No trace of veil could be seen, either on the stem, or the margin of the pileus, otherwise it seemed to be closely related to *A. leucotephrus*. Of course, it is vain to speculate on the manner in which this little species found its way to such a habitat, which would scarcely be its natural one, but it is quite certain that it could not be a degraded form of the ordinary Mushroom. We have been asked to account for the presence of these extraneous fungi, and to furnish instructions for getting rid of them, but we are not in possession of sufficient positive information for either. We are equally unable to account for the advent, for three successive years, of excellent examples of the true Mushroom in a London coal-cellar, growing out of the mortar of the brickwork, 4 feet above the ground, and attaining in this unfavourable locality a diameter of 6 inches, with no evidence that a Mushroom-bed had ever been laid in that cellar within the memory of the present inhabitant.

Incidentally, other Agarics may have established themselves on Mushroom-beds, but a more annoying visitor is a black nodulose Sclerotium, which is immersed in the soil, and takes effective possession. It

was first seen more than a quarter of a century ago, and many times since, so that its appearance is now by no means uncommon. Mostly, it never advances beyond the sterile Sclerotium stage, but in its perfect state it develops a black, irregularly, club-shaped head, or cluster of heads, and is known as *Xylaria vaporaria*.* It is closely related to the very common "candle-snuff" fungus, which appears on nearly every old stump, and, like that, contains dark elliptical sporidia, which are enclosed in narrow membranous sacs, or asci, and these again are developed in globose cavities, immersed in the substance of the clubs. By keeping the Sclerotia immersed in damp sand, Mr. Currey succeeded in obtaining the perfect fruit, but the Sclerotium is in itself a hibernating condition, or a sort of perennial compact mycelium, which has no proper fructification of its own. How they originate in the beds, and what is the stimulating cause, has not yet been ascertained, or any other method of clearing the pest discovered, except by demolishing the bed, or such portion of it as may be affected by the Sclerotium.

There is still another enemy which the cultivator of Mushrooms has to contend with, and that is the agent which produces distortion, coalition, and absorption of the gills, so as to bring about a state so much resembling the early stages of *Hypomyces* as to leave no doubt of its affinity. This genus of parasites, when mature, belongs to the Sphaeriaceae fungi, allied to *Hypocrea*, and forms a stroma upon Agarics and other fleshy fungi, in which the perithecia are immersed,† containing the sporidia. In the early stage of this disease conidia are produced, under the form of some mould, which varies according to the species. Subsequently the stroma and ascigerous fructification are developed. The latter stage has not been met with on Mushroom beds, but a very early condition is by no means uncommon, in which the gills are traversed by mycelium, and distorted, the hymenium remaining barren and pale, and the entire Mushroom giving evidence of disease. We have never been able to obtain examples in a sufficiently advanced condition to show the conidia, and hence the evidence is so far faulty, but the peculiar appearance of the affected gills leads to the conclusion that this disease is caused by some mould, which is the forerunner, and constitutes the conidia of some *Hypomyces*. It need scarcely be added that such affected Mushrooms should not be eaten, but should be removed from the beds and destroyed as soon as the disease is detected. *M. C. Cooke.*

COLONIAL NOTES.

WILL you pardon me for asking for a little space in your old and valuable journal, to ask your readers if they know of a winter Melon, that is to say, a Melon the fruit of which, when it comes to maturity, may be stored away like a number of Pears, Apples, &c. I have in my mind in writing a beautiful Melon, which my father brought out to South Australia in the early part of 1839. The seed was received from Malta. The fruit was of an oblong form, from 6 to 12 inches long and 4 to 6 inches in diameter, smooth, and almost ivory-white; the flesh was also white, and when fully matured, of a delicious flavour. After a few years in South Australia, the fruit lost its character, from the flowers being fertilised by the pollen of other varieties of the Melon family. This plant is of further interest, as probably its fruit was the first Australian fruit exported to England. It arose thus: My father, having a friend returning to England, packed up for him a few of these Melons for use on the voyage, at the same time asking him to return word as to whether any reached England in a sound condition. The answer received was that several of the fruit had reached England in excellent order. This must have been 1845 or 1846, but as I am writing from memory, I cannot be positive. Should any of your numerous readers know anything of the Melon in

question, and would forward me a few seeds, I should feel extremely obliged; or should seeds be purchasable of the seedsmen, I should be glad to know where through the medium of your paper, if you will allow it. *F. M. Bailey, Colonial Botanist of Queensland, Brisbane.*

ANGRÆCUM O'BRIENIANUM.

Page 8 of January 7 number of your paper contains a reference to *Angræcum O'Brienianum*. Some three or four years since, I purchased what I supposed to be this Orchid, from Messrs. Graham & Co., florists, under the name of *A. gladiifolium*. I could find no description of this Orchid in any work, including Williams' book. I am not able to give a technical description of it, the more so that it is not in flower at present, though it is likely to be so in about a month. The following description, however, will be pretty near the mark, as far as the plant is concerned, of which I enclose a photo. Raceme, five flowers, white, about the size of a white Azalea, scented, long-spurred; leaves stiff, 9 inches long, 1½ inch broad, ¼ inch thick, not veined, alternate; leaf when fully grown, slightly split at the base on the upper side, from which the new leaf shoots. It is fair to myself to say, that until the last year I had not been growing this plant in heat; consequently the growth was slow. Since growing it in heat, it has thrown up the three last leaves. I mention this as reasonably accounting for the smallness of the plant, considering the length of time that I have had it. If it would be likely to interest you, I would be pleased to send you a photograph of my garden. *Hugh Dixon, Sydney, July 24.* [Kindly do so. ED.]

HARDY CYCLAMENS.

WORTHY of the choicest spots in the garden is the autumnal hardy Cyclamen, whose flowers in thousands are now peering out from many a corner in my garden, both in sun and shade, though they seem to prefer shade. I mean the Cyclamen which claims to be a native of England, and which seems to make itself at home in gardens more readily than any other. Fifteen years ago the late Mr. Tyerman sent me a large supply of these from Cornwall; I think he called them *Cyclamen europæum*. The species was figured in the first edition of *Sowerby's C. europæum*, and Bentham in his *British Flora*, calls it *C. europæum* (Linnaeus). I never questioned the correctness of this name until a few days ago, when a box of Cyclamens in flower, recently collected, was sent me from Switzerland; these had spherical bulbs, round leaves with even margins, and very sweet purple flowers, much smaller than those in my garden. These collected plants the *Gardeners' Chronicle* helped me to identify as the true *C. europæum* of Linnaeus. The authentic name of the other species, claimed as native, is *C. neapolitanum* (Tenore). It is also called in the second edition of *Sowerby's British Plants*, *C. hederifolium*. The last name would be appropriate enough, if Tenore's name had not held the field before it; for the leaves are angular, and prettily marbled with grey, as we often see in Ivy when it creeps on a bank. As for the cultivation of *C. neapolitanum*, I find it will do well anywhere, provided a substantial layer of broken stone is put for it to grow upon. The tubers should rest on the stones, which should be covered with 3 inches of leaf-mould. If they work up to the surface they should be again covered with leaf-mould. They begin to flower early in August, and last for about two months; the colours are various shades of pink, a few being pure white. The leaves come out about three weeks after the first flowers, and last till the seeds are ripe, in the following June. I generally collect the seeds and sow them in boxes, to save them from birds and mice. The seedlings are ready to plant out in two years, and no one can grudge the little trouble they give, with the prospect of gradually filling every dark corner of his garden with so charming a flower. I find that hardy Cyclamens do particularly well under Spruce Firs, the decayed needles

* *Gardeners' Chronicle*, Vol. XII., 3rd Series, p. 801.

† Plowright, on "*British Hypomyces*," *Grevillea*, for 1882.

* See *Gardeners' Chronicle*, October 27, 1877, p. 520.

of which seem to contain all they require for their welfare. What I have said refers especially to *C. neapolitanum*, which is, I believe, the commonest hardy Cyclamen in English gardens; but I have also grown for many years, treating it in the same way, *C. Coum*, the flowers of which are smaller, and vary in colour in the same way. They begin about Christmas and continue till the end of March, defying frost and storm. The leaves are produced before the flowers, and resemble those of *C. europæum*, for which the plant might be mistaken but for the shape of the tuber, which is not round but flattened. There are two or three other European species of Cyclamen, but I have no experience of them as hardy garden plants. *C. Wolley Dod*, *Edge Hall*.

PEDIGREE OR GRADE RACES IN HORTICULTURE.*

By HENRY L. DE VILMORIN, PARIS.

It is a well-established fact that the life-work of plants is to make the mineral wealth of the earth fitted for the use of animals and of man. Now it is clear that the plant's work can be done well or ill according to its more or less perfect fitness to its functions. It is, moreover, within the power of man to consider, and to some extent control, the efficiency of plants in regard to their work, to select, and to increase the best only, and by continued selection to develop more and more the good qualities of each kind. In this way man raises races and varieties of plants which do their work best and quickest. Heredity is the lever by which the results of the study and care and perseverance of the raiser are fixed, so to say, into the most valuable of the plants grown for man's use or delight. We have no more powerful means of improvement of vegetable forms. All the care, food, and protection given to plants may make them larger and finer, but only selection among many of the same kind with the help of heredity can fashion an enduring race of plants with special good qualities for our farms, gardens, or orchards. Chance seedling may yield some very good finds, as sometimes a good hit is made by shooting at random. But no good marksman will, even after the luckiest of chance shots, dispense with the use of his eyes and judgment for the rest of the day. In the same way no experienced raiser will trust to chance in the choice of the seed from which he expects some precious results. He will gather it from one plant seen among many, and will have good reasons to show for his choice.

It is plain that selection was not at all times done with such thought and skill as it is now; but ever since plants have been cultivated an evident improvement has been going on for our benefit, and fixed and valuable races of field plants, vegetables, flowers, and fruits, were known to the oldest nations, and are mentioned by the oldest writers. Since the settlement of America, a new field was opened for good work, which yielded a splendid crop of honour and profit to American as well as to European cultivators, and through them to their respective countries.

Let anyone who doubts the high value of selection, look at our fine races of Cabbages, Kales, Cauli-flowers, Kohl Rabi, and Rutabaga, and compare them with the wild Cabbage of our western shores of Europe; let him compare our fine garden Beets and our Mangels to the wild Beet of the Mediterranean shores; let him compare the Tomatos and Potatos of to-day with the wild South American plants, and he will see proof that only human thought and skill have brought about such wonderful changes—many of them in our own day, many, on the other hand, have been hundreds of years in existence. In the Tomato and Potato we have two distinct examples of garden races, viz., (1) those which are increased from seeds, as the Tomato, and (2) those which are increased by division of a plant, as the Potato.

Even where we divide the plant itself, heredity is of some importance, as new varieties can be raised from seed only, and it is by no means indifferent to gather seeds meant for the purpose from one variety of Potato or from another. Distinct groups of races are seen in the Potato, as the Rose tribe, to which the early Rose, late Rose, and many more can be referred. Just in the same way, a nurseryman who sows Pear pips in search of new varieties will take good care to take them from some old sort, the

parentage of which gives good hopes of success. It follows, then, that even where increase by division is the rule, the knowledge of the quality and history of a plant may be of essential importance.

WHAT HEREDITY IS.

Where selection is done with skill and care, the improvement of many kinds of cultivated plants effected by its means is invaluable. The large Pansies, the huge hybrid Gladioli, the large-flowered Cannas, were all brought from the state of small flowers to their present excellence in our own day by careful observers, who, watching every variation, and keeping an exact record of the descent of all their plants, turned to the best account the wonderful action of heredity.

That plants are endowed with the power of changing to some extent under altered and varying conditions no one will deny who knows even a little natural history. Such changes occur in wild nature as well as under cultivation, and by the action of heredity may be transmitted more or less faithfully to the next generation.

But an all-important fact must be recognised and remembered. It is, that in the wild state only such variations have a chance of enduring as give the plant in which they occur some advantage in its life. Many variations appear every year which soon disappear, because they are a loss, not a gain to the plant. Suppose, in the wild state, a Potato plant with short stems, and late sprouting tubers in a mass at the base of the stem. Such a plant would not have any chance against rank-growing and early-shooting varieties, and it would soon perish. Still, some such characters belong to some of our best Potatos. This is owing to the action of man, who throws his power into the balance when cultivating plants which are useful or pleasant to him, and who gives the weakest plant, if it is for some reason a favourite with him, all the advantage he can to make it thrive and answer his purpose. Most of the variations induced in our garden plants are not in favour of the plant if in a "free fight" with its kind in Nature. All our improved roots, as Carrots, Turnips, Beets, make an early and succulent growth for our own benefit, but not at all for their own good. If left to their fate to struggle with their own wild forms, they would soon have to take a "back seat," and very likely soon perish. It follows, then, that varieties improved from man's point of view must receive kind treatment and richer food than wild forms of the same plant. The cultivated plant, like the domesticated animal, yields in a measure its powers of self defence to adapt itself to our service. Man must in return provide for its safety and nourishment. In the improvement of plants the action of man, much like influences which act on plants in the wild state, only brings about slow and gradual changes, often scarcely noticeable at first. But if the efforts towards the desired end be kept on steadily, the changes will soon become greater and greater, and the last stages of the improvement will become much more rapid than the first ones.

I may relate here in a few words an unpublished experiment which I have been conducting for more than twenty years, from 1872 to the present year. It has consisted in cultivating one of our Parsley Worts (*Anthriscus sylvestris*), a European weed, in order to change its slender and much-forked roots into fleshy, straight, and clean roots, say like those of the Parsnip. Among the first batch of roots raised from wild seeds a dozen were selected with a tendency in their roots to larger and straighter bodies. Each root was planted separately, and its seed harvested separately. Of the dozen lots obtained, eight or nine were discarded at once, and roots were selected only in such lots as exhibited some trace of variation. Again a dozen roots or so were chosen, a drawing made of each root, which was afterwards planted separately. I have sketches of all the roots selected, so that it is possible to follow all the stages of variation of each plant living at this day. For the first ten years the changes were slight, but now they are more and more marked with every generation, and in some of the lots the straight and smooth roots are the most numerous.

My object was not to create a new vegetable, as the roots of *Anthriscus sylvestris* have such a strong taste of camphor as to be quite uneatable, but simply to show that careful and continuous selection could transform a wild plant in years that do not equal a quarter of the span of many human lives. Like results were obtained by my grandfather with the wild Carrot, only its results were open to controversy as to possible crosses between garden

varieties and the wild strain. No such objection can be raised in the case of my weed Parsley Wort.

(To be continued.)

PLANT NOTE.

CELSIA CRETICA.

SEEING a reference to this plant on p. 218, I am induced to say that of all the plants grown of what are termed a common character, this is the most free-flowered. Half-a-dozen plants raised from seed will flower continuously and have a good effect in the greenhouse all the year round. Directly a flowering shoot is removed another pushes from the base, thus the display is kept up. The colour of the flowers is pale yellow with a brown or chocolate eye, and they are pleasantly perfumed. *E. M.*

WATER LILIES AT BARODA HOUSE, KENSINGTON.

HORTICULTURE is carried on with difficulty in London, and the reasons are obvious. It is surprising that such good results should be obtained under adverse circumstances, and in many places within the metropolitan area great success is achieved in the culture of various kinds of plants. The Water Lilies in the garden of Sir E. Harland, Baroda House, Kensington Palace Gardens, are an illustration of successful plant culture in London. This class is rarely seen well done in private gardens, and although the collection is not large, it is interesting, far more so than the typical conservatory filled with Palms and foliage plants.

The Water Lily-house, for such it may be truthfully called, is of large size, and divided into two compartments. This fine structure is lighted by electricity, is connected with the house by a covered way, embellished with flowering plants, and is in every respect suitable for the chief things cultivated. In one compartment or division the cooler species are placed, British kinds and others, which need different treatment to those from the tropics. The partition between is of glass, but hard lines are toned down as far as possible by an imitation rustic bridge of Portland-cement, which, especially by electric light, has a quaint and picturesque effect. The Lilies in each case are grown in basins of Portland-cement, and the structure is about 2 feet 6 inches in height, so as to bring the Lilies closer to the eye. There is no occasion to stoop down to see them, and the formal appearance of the cement is hidden by the growth of Ferns, *Ficus repens*, and similar things, which in time will quite hide its bareness. If the basins are not very large, they still contain many species and forms of *Nymphæa* in good health, and there is a ready way of obtaining a fresh supply of water.

The chief *Nymphæas* in the collection are the following beautiful kinds. It would be well if this class were more grown in gardens, and a collection of Lilies in a large conservatory is not difficult to manage. *N. cœrulea* is one of the more interesting species. *N. stellata* is similar, and there are many varieties requiring the warmest house, as may be supposed from its habitat, tropical Africa, from whence the species was introduced in 1812, and figured in the *Botanical Magazine*, t. 552. A form of *N. stellata* in the collection is *N. s. cyanea*, which was introduced from India in 1869, and recorded in *Botanical Magazine*, t. 2058. The flowers are blue, and very pretty. One of the finest of all is *N. dentata*, which is a form of *N. lotus*. This is a very handsome kind, the flowers broad, white, and the leaves large. It was introduced from Sierra Leone in 1845, and is figured in *Botanical Magazine*, t. 4257. Without this fine Water Lily, no collection is at all representative. A cool-house species is *N. pygmaea*, and was introduced early in the present century from Northern Asia. The hybrid *N. devoniana* is also represented.

Although *Nymphæas* are the leading plants in this

* Read before the Seedsmen's session of the World's Fair Horticultural Congress, Chicago.

large conservatory, many other plants are cultivated. Orchids are grown in considerable numbers, *Odontoglossums*, *Calanthes*, *Cattleyas*, and other types being well represented; and such water-plants as *Aponogeton distachyon*, *Vallisneria spiralis*, and *Villarsia nymphaeoides* are in the collection. Of Palms, we saw one of the finest specimens in the country of *Areca lutescens*, and such flowering plants as *Gloxinias* and tuberous *Begonias* were in full bloom. *Caladiums* are of interest, especially the dwarf *Le Nain Rouge*, which is a good companion to the well-known *C. argyrites*. The former has reddish leaves, and is very dwarf and compact in habit, a most useful decorative plant.

The house is adorned with a variety of climbers, including the *Lapageria alba*, *Aristolochia elegans*, and the old but beautiful *Gloriosa superba*. The two latter are not often seen in gardens, but there is no reason why they should be neglected. *A. elegans* is one of the best of the genus, the flowers beautifully marked, and borne in quantity. A variety of *Petunia* grown very largely is *Bull's Snowball*. The flowers are pure white, and the plants quite specimen size. It is one of the finest kinds we have seen, being free and distinct.

We understand that Sir E. Harland intends to get as complete a collection of Water Lilies as possible, and in time this garden will prove one of the most interesting in the vicinity of the metropolis. *Visitor*.

TREES AND SHRUBS.

SPIRÆA LINDLEYANA.

REVERTING to the notice of this shrub by "R. D." at p. 210, I can testify to its usefulness as a showy plant. It is easy of propagation, by taking the suckers which spring up from the roots in autumn, and grow into large bushes in a short space of time. In South Hampshire, *Spiræa Lindleyana* does not die down in the winter. The finest plants that I ever saw of this *Spiræa* were in the grounds of the late Dowager Marchioness of Huntly at Orton Hall, Peterborough. These were planted at the back of a large rockery, and the effect was really grand when the long panicles of bloom drooped at least 2 feet deep. *E. M.*

ROBINIA, CLETHRA, &c.

From Messrs. Vertegans, of Chad Valley Nurseries, Birmingham, we have received specimens of the following trees and shrubs. They are mostly old friends, but far less commonly met with than their merits deserve. Some are fit for the plantation, some for the shrubbery, and others as isolated specimens on lawns or for effective beds:—

Robinia hispida.—A species destitute of spines, with large elliptic leaflets, and racemes of rosy-lilac flowers. The herbaceous shoots are covered with fine setæ, from amid which project long, purplish, glandular hairs. The peduncles and the calyx are studded with similar hairs. What the object of this investiture may be, we do not know; it may be for the purpose of deterring unwelcome visitors. The tree is a native of the Southern Atlantic States of North America.

Robinia pseudacacia semperflorens is a form of the common False Acacia, which blooms on the wood of the year. Its peduncles and calyx are entirely glabrous. More than thirty varieties are known and catalogued, but we do not see many of them in gardens.

Clethra tomentosa seems hardly different from the old *C. alnifolia*. It is a hardy shrub, with shortly-stalked obovate, oblong leaves, wedge-shaped at the base, glabrous above, very downy on the lower surface, finely saw-toothed at the margins; the long clusters of white flowers are placed at the ends of the shoots. The five separate petals puzzle a young botanist, so that he does not recognise that he has a Heath-wort to deal with. The porous anthers, however, should give him the clue. The shrub is a native of the Atlantic States of America.

Rhus Osbeckii.—A bold, massive-looking shrub,

with dark brown bark, stalked leaves, the stalks long, and widened at the base; the blades unequally pinnate, with two side pairs of pinnae, and one terminal all oblong acute. The midrib between the pairs of pinnae has a narrow wing of leafy substance on each side. The flowers are very numerous, greenish-white, and borne in terminal, much-branched pyramidal panicles. It is a native of Japan.

Aralia canescens.—A shrub with very large spreading loosely bipinnate foliage, the ultimate lobes ovate, broadly acute, dark green, and rough on the upper surface, greyish beneath. The numerous small whitish flowers are borne in much and loosely-branched panicles. Whether this is the true *A. canescens* of Siebold & Zuccarini, or the *Aralia chinensis* var. *canescens* of gardens, we are not sure, not having been able to compare it with native specimens.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

GENERAL WORK.—Much work will now have to be done if the garden is to be kept tidy, as weeds now grow apace, and with the falling leaves, the clearing away of crops, together with other work, there will be sufficient to keep all hands busy. Do not allow any weeds to grow, or decaying vegetables to remain on the ground. All such should be collected into the rubbish-heap and covered with soil, or if an offensive smell is feared, burned.

POTATOS.—Many varieties will be ready for lifting. Choose for the first digging those whose skins are not easily rubbed off. Having dug the tubers on a dry day, allow them to remain on the ground for a few hours before storing. Look over Potatos in store, removing diseased tubers. The seed tubers should also be occasionally examined.

CELERY.—Mid-season and late successions will now require moulding-up, and before setting to work thoroughly moisten the soil in which the plants are growing, as it is not easily done after moulding. Remove damaged outside leaves and offsets before watering the rows. This done, tie the stalks together loosely with a piece of soft bast. In earthing-up always break the soil finely with the spade, and press some firmly round the stalks with the hands, then add more with the spade, and leave a line of spits on the shoulder of the ridge for the next earthing-up. Late Celery needs thicker ridges than that which will be consumed early in the winter. If slugs or snails are numerous, dust some soot on the soil along the rows after earthing-up.

PARSLEY.—The latest sowings will need thinning, the plants drawn out being transplanted to a sheltered situation to be protected during winter. Those left in the drills should have a space of 6 inches between the plants.

AUTUMN ONIONS.—When the plants are forward enough transplant them without delay, for unless the roots take hold of the soil before frost sets in, they will be lifted out of the ground by frost. Autumn transplanted Onions have an advantage over those put out in spring, especially if the season should be a dry one. The ground on which Onions are grown cannot be too rich. Select the strongest plants for transplanting, and leave the others in the seed-bed till the spring, when they may be thinned out to 3 or 4 inches apart, according to the size to which the varieties grow. In lifting them, take up all the roots possible, which is best accomplished in showery weather. Planting in drills or little trenches cut with a spade, is preferable to using a dibber, the roots being easily spread out without injury. The bulb should not go far below the ground-level, and the soil should be made firm about them. Any of the Spanish type will stand ordinary winters well in this country, and as they will keep longer than the Tripoli, they are preferable, excepting it may be the Queen, which turns in earlier than any other kind.

FRENCH BEANS.—This crop must now receive attention, for the nights are getting colder, and we may soon expect frost, and protecting material should be handy. The late sowings should have the lights put on the frames at night, but these should be taken off by day. All pods of Kidney Beans should be gathered as soon as large enough for use; if not

wanted, preserve them in brine for the winter. Gather plants with ripe seed, and store them away in a dry place, till thoroughly hard, when the Beans may be shelled.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

APPLE AND PEAR TREES.—Bushes and pyramids which have made insufficient growths to warrant the pruning of them early in the month of July, as was recommended for trees carrying light crops of fruit, but were making strong growth, may now have all secondary growths pruned back to two or three leaves at the base, but leaving unpruned the extremities of branches till the crop is gathered. This present pruning, whilst effecting good by exposing the fruit to sunlight, admits light and air more fully to the inner parts of the plant, and assists thereby to mature the wood. Trees on walls and espaliers may have all the side-shoots cut back in the same manner; and where small shoots are in great numbers, many of these may be entirely removed, which will have the effect of reducing the number of fruit-bearing spurs, the crowding of these being also an evil.

PREPARING NEW STATIONS FOR WALL TREES.

—The preparation of borders, if time will permit, may be taken in hand, an operation always called for if the border is an old one, trees never growing satisfactorily in practically worn-out soil. Doing this kind of work in these long days, whilst the weather is dry, lessens the labour of getting-in materials, and expedites the work. In most gardens, a variety of soils is kept in stock, so that the work need not wait for turf to be cut, carted, &c. For stone fruits, it is advisable in land not resting on chalk or green sand, to put old mortar-rubble, plaster, or chalk in considerable quantities with the soil used; and likewise to form the drainage for the various tree-stations, if the land requires artificial drainage. With naturally light or gravelly soils, mix retentive loam, or some clayey kind of soil, or even marl, with the staple; but if the land is the reverse of light, more chalk may be used. For Pears, chalk or old mortar are not really so essential. Stiff and retentive, i.e., cold soils, are improved by using chalk or mortar-rubble in the bottom of the border, as in such soils the more thorough the drainage, the warmer is the border. Charred garden-refuse should not fail to be freely used in the compost, especially in heavy soils, as this substance keeps them porous and sweet. If the staple is considered to be good enough, simply take some top spit soil from another part of the garden, and away from fruit-trees, and mix this with burnt-refuse, &c., for planting in. If a few isolated trees are to be planted, the prepared sites may be 8 feet long by 4 feet wide, and 2 feet deep.

GATHERING PEARS.—The bulk of Louise Bonne of Jersey Pears on wall-trees should now be gathered; and to prolong the season of this fine Pear, a portion of the crop should be placed in shallow boxes, and kept in a cold place—the ice-house, for instance, or an underground cellar; but putting fruits into warmth for a day or two before consuming them. *Fondante d'Automne*, and *Burré Hardy*, the latter an excellent variety, will require to be gathered not all at once, but from time to time. These varieties, if properly stored, can be made to last till *Marie Louise* and *Doyenné du Comice* come in.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

POTTING AND SURFACE-DRESSING VANDAS.—Having finished the potting and surface-dressing of the *Odontoglossums*, *Masdevallias*, &c., of the cool house, and the cleaning of the house itself, the plants should be neatly arranged for the winter. This work ended, I usually take the *Vandas* in hand, and repot or surface-dress them. The *Vandas* chiefly grown at this place belong to the tricolor section, and when I speak of potting, I mean plants which have lost a number of their leaves during the summer, causing the plants to have a lanky appearance. If the stems of such plants have been carefully syringed, fresh roots will have been emitted, and the stems may be lowered in the pots with safety in September, there being no strong sunshine. The cause to which I attribute the loss of leaves on *Vandas* is too much sunlight. Some of our plants lost many pairs of leaves at the flowering time, and doubtless permitting the flower-spikes to remain on the plants for long

periods of time, is not good for the plants, and certainly it causes the leaves to shrivel to a greater extent than when the spikes are removed early. Twisting the leaves by an unpractised hand when sponging them, as a novice is apt to do, causes them to split down the middle, a fact that he may not notice, and these leaves are the first to turn yellow and fall off. In potting, remove the old living sphagnum first, and wash it, ready for mixing with the new material; then remove the rest carefully, lift the plant out of its pot, and, having clean pots and crocks ready for use, transfer it to the fresh pot without delay, putting it as low down as possible, filling in with clean crocks and charcoal in about equal parts, and finishing the surface off with a layer about 3 inches, of sphagnum moss, small lumps of good peat, and a good sprinkling of finely-broken crocks and charcoal, the whole forming a neat round mound a little higher than the rim of the pot. The plants must be shaded from the sun at all times until rooting recommences, and watering must be done with care. The water afforded after the re-potting, if it be thorough, will be quite enough, as the necessary syringing that the lower parts of the stems get will keep the materials moist. Damp well between the pots. Our Vandas grow at the cool end of the stove, where at present the temperature is 70°, but during the winter months 60° or less. The bottom ventilators of this house are at present open day and night.

THE FLOWER GARDEN.

By T. H. CRASP.

THE PROPAGATION OF BEDDING PLANTS.—Every effort should be made to raise the required number of bedding plants of all kinds that are struck at this season in view of next year's requirements. Before doing so, notes should be made of intended alterations in the filling of the beds, and plants raised accordingly. Zonal Pelargoniums have done remarkably well this year, at the same time shoots fit for making cuttings will not be over plentiful, but if they are fewer in number they will be firmer than in usual years, and therefore more certain to make plenty of roots. No time should be lost in obtaining cuttings, or the plants will not be established before the winter arrives. The same remarks will apply to all such plants as Verbena, Ageratum, Heliotrope, Coleus, Alternanthera, Iresine, and the like.

SUCCULENT PLANTS.—If the tips of the branches of *Mesembryanthemum cordifolium variegatum* are taken off and dibbled into well-drained pans or pots of sandy soil, and placed under glass in the full sunshine, they will readily root, the stock so raised affording a large number of cuttings in the spring, which may be struck in a little warmth; also the trailing or branching succulents, including several of the *Sempervivums*. *Kleinia repens* is also best when struck at this season, preference being given to short sturdy tips of shoots, and after they are trimmed they should be allowed to dry at the cut end before they are dibbled rather thickly into well-drained pans or pots, and placed in a sunny dry frame or brick pit. Cuttings of succulents require but little water during the winter.

TUBEROUS-ROOTED BEGONIAS are a valuable class of bedding plants, and with a mulching of manure and an occasional watering they have done well in spite of the drought. If it be thought desirable to increase the stock of any special variety of Begonia, it may now be done by striking cuttings after the usual mode pursued with zonal Pelargoniums. Begonia cuttings root very freely in the open ground at an earlier part of the season, but it is now too late to expect success. Dibble the cuttings into pots of sandy soil, and place them in a cold frame, affording just sufficient water to prevent shrivelling; no more, or they will decay. Any flowering shoot may be made into a cutting, and this will not decay till a bulb has formed at its base. The cuttings should remain in the cutting-pots till the spring, wintering them in a frame or greenhouse, from which frost is excluded; taking care that the soil does not get too dry.

ROSES.—Attend to the budded stocks, and loosen the ligatures round the buds that have started. Though it is best for Rose-buds to remain dormant till the spring, they will sometimes start into growth about this time. These young shoots should be encouraged to grow by cutting back all the side shoots of the stock, and by this means the shoot from the

bud will attain some consistency before the winter. Failing this, they are liable to be killed by frost.

PAMPAS GRASS.—If liquid manure be copiously applied to strong clumps of the above when the inflorescence is developing, great benefit is afforded. This season the Pampas Grass is sure to be very fine.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

PELARGONIUMS.—The double and single varieties of zonals for winter flowering which are growing in pots, plunged in coal-ashes, &c., out-of-doors, should be placed under glass without delay, cleaning the plants and pots, and ascertaining that the drainage of the pots is perfect. The house in which these plants stand should be fully ventilated night and day for at least a fortnight. Watering will be much needed, and should receive close attention; and if clear soot-water be afforded once a week for a time, it will drive out any worms that may have got into the mould, besides improving the appearance of the plants. Avoid crowding, and let each plant have space, so that there is a free circulation of air round about it. A temperature of 50° to 60° by night and 60° to 75° by day will suffice at this season. The three most useful scarlet zonals are Madame Raspail, John Gibbons, Henri Jacoby; and for a white, Improved Queen of the Belgians.

PLANTS OF THE CONSERVATORY AND GREENHOUSE.—Advantage should be taken at the present time, when many of the inmates of these houses growing in pots are standing out-of-doors, to prune, train, and clean the climbers in the houses. *Tacsonias* and *Passifloras* may now be pruned. These plants have grown vigorously, and the shoots should be thinned, so that plants standing beneath may get sufficient light during autumn and winter; but the short flowering shoots should be left, so as not to spoil the appearance of the plants for the present. *Jasminum grandiflorum*, *J. gracillimum*, and *J. pubescens* are climbers that are nearly past flowering, and these should be cleaned and the shoots left thinly. *Clianthus magnificus*, *Tecomas*, *Bignonias*, *Stauntonias*, *Cobæas*, and *Clematides* should also have the shoots thinned and cut away from the glass, so as not to darken the houses. *Lapagerias*, *Plumbagos*, and *Bougainvillea glabra* are now at their best, and should not be much interfered with. When the plants are cleaned overhead, the borders should be slightly stirred with a steel fork, and top-dressed with fresh soil. *Camellias* and *Nerium Oleander* should also be put in order, and cleared of scale. To prevent the spread of the injurious and troublesome white and brown scale, afford weekly syringings of an insecticide.

ROSES.—Teas and climbing Roses, such as *Rêve d'Or*, *William A. Richardson*, *Celine Forestier*, and *Cheahunt Hybrid*, which are all strong growers, may be well thinned out, leaving the leading shoots intact, but take away the weak flowerless wood; and thoroughly clean the plants. The Rose borders should be afforded a top-dressing of rich loam and fresh horse-droppings. The glass, staging, tables, floors, and walls should be made clean, and everything got in readiness for bringing in the plants shortly; the middle of the month is quite late enough, especially in the northern counties, to leave out-of-doors the more tender plants.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES.—Grapes which will have to be kept in good condition till the month of April or later, should by this date, or soon afterwards, be well-coloured, and by the end of the present month afforded a cool, dry, atmosphere. The varieties *Lady Downe's Seedling* and *Black Alicante* require to finish them the use of fireheat and free ventilation for a long time after the fruit has taken on its proper colour, so as to prepare it for better keeping in bottles of water. Grapes ripened late are liable to shrivel, and all Grapes should be quite ripe by the end of this month. Unmatured canes should be kept entirely free from lateral growths, and strong warmth used in the pipes, with a free circulation both front and top of the vinery. If the summer mulching has not been removed from Vine borders, no delay should occur in removing it, so that the sun's heat may have full access to the soil, and if the surface-soil be close and wet, a portion of it

should be removed and replaced with fresh soil, but take care to expose no roots to the air in doing this. The surface of all borders should be kept loose, with a fine crumb to prevent fissuring. In deep borders, or those which are flattish, drills should be drawn from the vinery wall to the front of the border to carry off heavy rain. Such borders require careful management as compared with borders that are high and dry.

FIGS.—Late crops are forwarder than usual this season, and liberal waterings, where the roots are in well-drained soil, should be afforded. The present time is very suitable to root-prune unfruitful trees, going underneath the stems of the trees from both sides, and cutting off the tap roots. This done, ram some lime-rubbish firmly underneath the newly-cut roots, which, if it be used with crushed bones, will keep the new roots in their places, and afford nourishment. If it is seen that this is not a sufficient check, some of the main roots should be searched for, and carefully lifted, cutting-back those which are fibreless, and replanting them firmly into chalky loam or soil, mixed with lime-rubbish, and this should be firmly rammed round about the ball or mass. When they are embedded in this, they will take liquid manure, without stint, at the growing season, and not become gross-growing; but short-jointed shoots will form, which are always fruitful, and the fruit grown under such conditions is large and good. Figs growing in pots or tubs require more skill in fruiting them than trees in the open ground, and it should be remembered that a free drainage and healthy foliage up to the end of the season are points which conduce to fruitfulness. Dwarf standards grown in confined space, with their roots surrounded by walls, are very manageable for early forcing, but pot-culture, where the roots can be allowed to ramify into rich soil, and be liberally treated, is the more popular method for early forcing of the Fig, and purchasers may find *St. John's*, *Brown Turkey*, and *White Marseilles*, varieties of the finest flavour, and very productive, and if space is limited, they are invaluable.

THE APIARY.

By EXPERT.

AUTUMN-FEEDING OF BEES.—All stocks which do not possess stores of from 20 to 25 lb. should be fed with thick syrup to make them up to that weight, for as the day and night temperatures get lower, it makes the task of storing and sealing syrup more difficult for the bees to accomplish. In calculating the amount of food in a hive, it is well to bear in mind that a standard frame will contain about 5 lb., so that at least four frames full of stores will be necessary to carry a stock safely through the winter and spring till honey-collecting begins again. Better than feeding up in autumn is the plan of leaving the honey in the brood-chamber intact, and it will generally be found that the bees will have stored enough below the supers to take them through the winter. If this plan is carried out, it will be found that the bees will come out much stronger the following spring through the saving of labour required to store syrup in place of the honey taken away from the hives. Syrup for autumn-feeding is generally made by adding 5 lb. of loaf or granulated sugar to 1 quart of water which has been brought to the boil. Keep stirring, to prevent it getting burnt, and by the time it has come to the boil again it will be done; a couple of tablespoonfuls of vinegar may be added to prevent crystallisation. Where a good many hives have to be fed up, the boiling of syrup is rather a troublesome undertaking, and bee-keepers in a large way make their syrup by simply dissolving the sugar in boiling water. For this purpose, the cylinder of a honey-extractor or a honey-ripeners will be found very useful to make the syrup in, and it can be afterwards drawn off through the valve at the bottom, and taken round to the hives without spilling any about. Great care should be taken while making the syrup not to attract any bees, for if they once detect the smell they will at this time of year come after it by thousands, and besides causing a great nuisance by their persistent efforts to get it, many of them will be lost or killed. The food required for each stock should be given in one dose, and for this purpose a feeder that will hold 20 lb. of syrup should be used. The proper time to put the feeder on is in the evening, as it causes great excitement, which will have subsided by the following morning, and robbing not so likely to be started.

EDITORIAL NOTICES.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited; but the Editor cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, SEPT. 12 Royal Horticultural Society: Floral and Fruit Committees, at the Drill Hall, James Street, Westminster; a Lecture will be given by Mr. J. Douglas on "Garden Varieties of Pentstemon and Phloxes."

WEDNESDAY, SEPT. 13—East Anglian Horticultural Club.

SHOWS.

TUESDAY, SEPT. 12 Show of Phloxes and Pentstemons, at the Drill Hall, James Street, Westminster.

WEDNESDAY, SEPT. 13 Show of Dahlias and Autumn Flowers, at the Gardening and Forestry Exhibition, Earl's Court (two days).
Royal Caledonian Horticultural Society (two days).

SALES.

MONDAY, SEPT. 11 Great Annual Trade Sale of Stove and Greenhouse Plants at Dyson's Lane Nurseries, Upper Edmonton, by order of Mr. H. B. May, by Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, SEPT. 12 Great Annual Trade Sale of Winter-blooming Heaths at the Burnt Ash Lane Nurseries, Lee, S.E., by order of Messrs. B. Maller & Sons, by Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Orchids from Messrs. Linden, Brussels, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 13 Annual Trade Sale of Winter-flowering and other Plants at the Lea Bridge Nurseries, Lea Bridge Road, Leyton, Essex, by order of Mr. John Fraser, by Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.

THURSDAY, SEPT. 14 Annual Trade Sale of Stove and Greenhouse Plants, at the Brimsdown Nurseries, Enfield Highway, by order of Mr. John Maller, by Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 15 Enormous Consignment of 48,000 Bulbs of Liliun Harrisii and other Lilies, for unreserved Sale, at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 15 Great Annual Trade Sale of Winter-blooming Heaths, at the Longlands Nursery, Sidcup, S.E., by order of Messrs. Gregory & Evans, by Protheroe & Morris.
Dutch Bulbs, at Protheroe & Morris' Rooms.
Orchids from Mr. F. Sander, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 16 Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—58° 3.

"Index Kewensis."* THE publication of the first part of this Index is an important event for botany and horticulture.

We have from time to time made our readers acquainted with the nature and the progress of this colossal undertaking. It must suffice, then, now to say that the work owes its origin to the late CHARLES DARWIN, who notified to his friend, Sir JOSEPH HOOKER, his intention to devote a considerable sum in aid or furtherance

of some work of utility to biological science. The difficulties he had experienced in accurately designating the many plants which he had studied, and in ascertaining their native countries, had suggested to him the compilation of an Index to the names of all known flowering plants, together with the names of the botanists by whom they were conferred, reference to the books in which they had been published, and an indication of the country in which the plants are indigenous. Mr. DARWIN rightly considered such a work as one "of supreme importance to students of systematic and geographical botany, and to horticulturists."

The nature of the book, the first instalment of which is now before us, is sufficiently indicated in this brief sketch of its history. The bulk of the work has been done by that born index-maker, Mr. DAYDON JACKSON, one of the secretaries of the Linnean Society, with the aid of a clerical staff and the co-operation of the officers of the Kew Herbarium, the whole work being supervised and directed by Sir JOSEPH HOOKER, whose supervision has been very far from nominal.

The method adopted has been to search for the original descriptions and names of plants in all and every accessible publication, "from the time of LINNÆUS [a rather vague limitation] up to and including 1885." In this manner, not only all strictly botanical publications more or less well known to students have been searched, but books of travel, biographies, incidental memoirs have been ransacked for casual names and references, and the names recorded even when they were names and nothing more. When the work is finished, it will be interesting to know how many thousands of separate publications have been scrutinised by Mr. JACKSON. Indeed, the statistics of the book will be of great interest, but we shall be well content to leave these, as also some more or less indispensable explanations, till the index is complete, the more so as, doubtless, various matters requiring explanation will crop up during the passage of the remainder of the work through the press, and these can all be dealt with at the end.

What we have actually before us is the alphabetical record (compiled as above explained) as far as the beginning of "Dendrobium," that is, from "Aa" to "Dendrobium exiguum." This suggests the criticism that it is unfortunate the first volume should end in the beginning of a genus, leaving the remainder of that genus to head the second volume.

The number of quarto pages is 728, each with three columns of 80 or more lines apiece. The number of names of all sorts in a column is, approximately 50, or 150 to a page, so that we shall not be far wrong when we say that the present part contains upwards of 43,000 names, each of which has had to be hunted up, recorded, verified, and many of them corrected, or referred to their proper station. These details amply justify the epithet colossal, which we applied to the work. From its alphabetical arrangement it is clear that the printing could not have been begun until the manuscript was complete, and so we may hope that the remainder of the work will pass through the press as rapidly as the careful scrutiny of compiler, editor, and "reader" will permit.

The accepted names of the genera are printed in black-faced type, the designations of the species in ordinary Roman type, the references in italics. For the synonyms the names are in italics, the references in Roman. But it is not necessary to run the risk of wearying the reader with such details. Of more importance is it to

know the principles upon which the selection of some names as correct, and the relegation of others to the rank of synonyms have been effected. It is not to be supposed that even Sir JOSEPH HOOKER has a monographer's knowledge of more than an infinitesimal fraction of the names that have passed under his eye. It is only a monographer who can deal properly with such questions—we ought to say some monographers, for, unfortunately, it does not follow, because a botanist has compiled a monograph, that it is a good and trustworthy one.

Personal knowledge and judgment being then obviously inadequate to deal with every item of so vast a record, selection must have taken place, and an enunciation of the principles governing that selection, is one of the things that will have to be recorded when the work is complete. We are disposed to regret that they were not sketched out in the introduction to the present volume. The expert systematist can, of course, determine these points for himself by an examination of the text, but it is not given to everyone to be a systematist, and naturalists of the coming school care little for these things. The matter is of the more consequence, in view of the interminable discussions on nomenclature which occupy the time of congresses, and fill the pages of books.

It seems that the coming race of botanists is not content to adhere to the old conventional rules, based on the teaching of such law-givers and practical workers as LINNÆUS and the two DE CANDOLLERS, but they must have a new convention of their own. There would be no possible objection to this if they could confine its use to themselves; a convention is but a convention, it is but a means to an end, but such a thing cannot be thus limited in its application. Should the neo-nomenclature party eventually gain the day (as it seems likely they may do in America), a worse than Babylonian confusion will arise in some cases, and the time of botanists will be taken up, to a greater degree than at present, in the wearisome and unprofitable task of unravelling the synonymy and in the adjustment of the new to the old.

From this point of view the publication of the Kew Index is most important. The time of congresses may be occupied with lengthy discussions. Neat codes and formulas may be drawn up, to be rediscussed by dissentients at the next meeting; but meanwhile, there will be the *Index Kewensis* and the *Genera Plantarum*, accomplished facts, drawn up on principles which every working botanist in this country appreciates. They may not be perfect, but we shall have to wait a very long while before our American friends or Dr. OTTO KUNZE give us more perfect ones. And so we venture to think the working botanists of the future will, in the main, follow the guidance of the *Genera Plantarum* and of the *Index Kewensis*, and leave others to do the talking. Of course, in purely scientific matters—such as the perfecting of the "natural system," as apart from mere conventional expediency—there will not be, and ought not to be, any adjuration in the words of the masters, as finality and uniformity of practice are unattainable. But these are big matters to bring up at the end of an article—we felt under some obligation to make mention of them, but it is not incumbent on us to discuss them at length. We can only act as the representatives of that increasing body of horticulturists who not only admire, but want to know something about the plants they grow, by testifying to the enormous value of the Kew Index for the purposes of the student, by expressing our admiration of the patience, judgment, and labour involved in its preparation, and by tendering our deep gratitude to its compilers.

* *Index Kewensis*: an Enumeration of the Genera and Species of Flowering Plants, from the time of LINNÆUS to the year 1885, inclusive, together with their authors' names, the works in which they were first published, their native countries, and their synonyms. Compiled at the expense of the late CHARLES ROBERT DARWIN, under the direction of JOSEPH D. HOOKER, by B. DAYDON JACKSON. Part I. (Oxford: at the Clarendon Press, 1893. London: H. FROWDE, Amen Corner.)

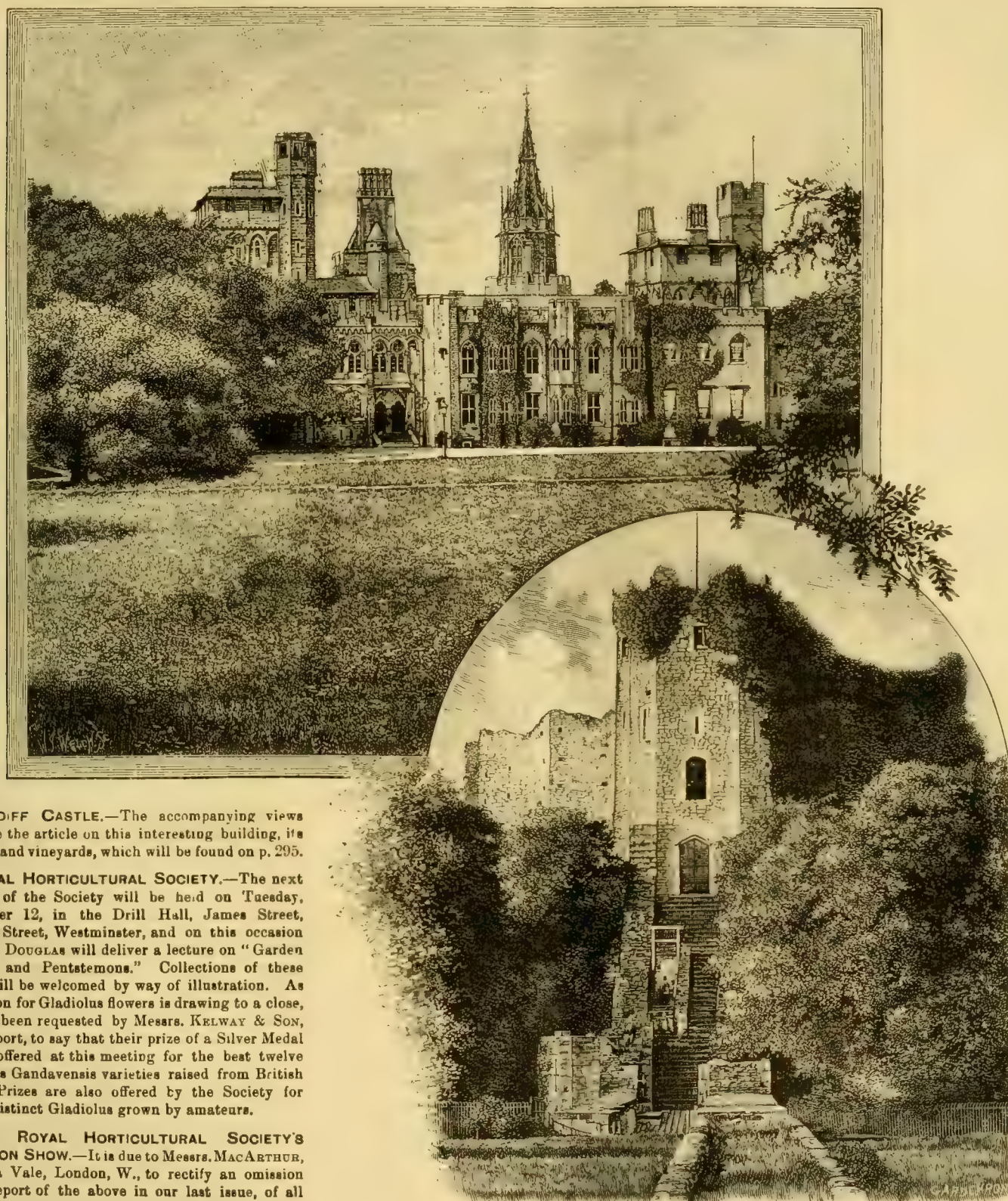


FIG. 52.—NEWER BUILDING AND THE ANCIENT KEEP. (SEE P. 295.)

CARDIFF CASTLE.—The accompanying views illustrate the article on this interesting building, its gardens, and vineyards, which will be found on p. 295.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society will be held on Tuesday, September 12, in the Drill Hall, James Street, Victoria Street, Westminster, and on this occasion Mr. JAS. DOUGLAS will deliver a lecture on "Garden Phloxes and Pentstemons." Collections of these plants will be welcomed by way of illustration. As the season for *Gladiolus* flowers is drawing to a close, we have been requested by Messrs. KELWAY & SON, of Langport, to say that their prize of a Silver Medal will be offered at this meeting for the best twelve *Gladiolus Gandavensis* varieties raised from British seeds. Prizes are also offered by the Society for twelve distinct *Gladiolus* grown by amateurs.

THE ROYAL HORTICULTURAL SOCIETY'S ISLINGTON SHOW.—It is due to Messrs. MACARTHUR, 4, Maida Vale, London, W., to rectify an omission in our report of the above in our last issue, of all mention of his exhibit of Palms, &c.; the more so, as in it was the only Fan Palm in the Hall and one other, both very fine specimens. The rest of the group consisted of various Orchids—*Oncidium crispum*, *Cypripedium Harrisiianum superbum*, *Miltonia lineata*; small plants of *Croton*, *Dracæna*, Ferns, and *Pandanus*.

NATIONAL CHRYSANTHEMUM SOCIETY.—A meeting of the general committee took place on the 4th inst., at Anderton's Hotel, Fleet Street, Mr. C. HARMAN PAYNE in the chair. The chairman, as the foreign corresponding secretary, reported that he had received a communication from the Bordeaux Chrysanthemum Society, stating that an exhibition would be held there on November 11 to 19, and

inviting English growers to compete. Also from Mr. JOHN EARLAND, Christchurch, New Zealand, acknowledging the receipt of the frozen flowers sent out from England last winter, and stating that the Christchurch growers were not far behind the home growers in the production of fine Japanese blooms; and in order to test the matter, Mr. EARLAND suggested that the Society offer a medal open to all societies or growers in the Australasian colonies, for six Japanese and six incurved varieties shown in two square blocks of ice, in the same way as the English flowers were frozen, each competitor to

deliver his exhibit at the place of judging at his own expense. This suggestion was referred to the schedule sub-committee to be dealt with as soon as possible after their appointment in the autumn. The Hon. Secretary made a report as to the reserve fund, and also as to the amount received since the commencement of the present financial year. Mr. E. MOLYNEUX was elected a member of the Floral Committee in the place of Mr. E. SANDERSON, resigned. It was resolved that Mr. CHARLES E. PEARSON be invited to read a paper before the committee at one of its meetings in October, dealing

with suggestions for the schedule; and later on, Mr. SHEA, on the methods of judging Chrysanthemums. Ten ordinary members and one Fellow were elected. The Secretary was instructed to convey to Sir JOHN LEWELYN, Bart., one of the Vice-Presidents of the Society, and Lady LLEWELYN, the sympathy of the committee under the great loss they had sustained in the recent melancholy death of their son through an accident. The usual vote of thanks to the chairman closed the proceedings.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—The Council of this Society are endeavouring to promote the making of home-made wines and preserves of all kinds, by offering at the autumn show of the Society, at Edinburgh, a series of Medals for the finest home-made wine from any fruit or flower. Medals are also offered for the best exhibits of cider and perry; and for all manner of jams, jellies, bottled and dried fruit, and every other description of "preserves." It is expected that a good display will be made of these articles at the show on the 13th inst., which promises to be one of the finest exhibitions of fruit the Society has held for many years.

M. EDOUARD ANDRÉ.—We desire to express our congratulations to our eminent friend on the occasion of his appointment as Chevalier of the Order of Leopold. M. ANDRÉ has many claims to a distinction of this kind; he is a landscape gardener, whose talent has been exercised not only in France, but at Sefton Park Liverpool, and in South America. He is a traveller and a botanist who has collected, published, and distributed numerous plants of value and interest; he is a Professor in the National School of Horticulture at Versailles, and one of the Editors of the *Revue Horticole*, and the author of a standard treatise on landscape-gardening.

M. CHARLES BALTET.—The National Horticultural Society of France has recently awarded the prize "Joubert de l'Hyberderie" to M. CHARLES BALTET, for his MS. essay on the horticulture of the five parts of the world. The prize is one of 10,000 francs (£400). *Revue de l'Horticulture Belge*.

PRESENTATION AT ALDENHAM PARK GARDENS.—On Friday, the 1st inst., Mr. J. A. Cox, who has served in the capacity of Foreman for nearly ten years, was presented with a testimonial by his friends and fellow-workmen. The testimonial took the form of a marble clock suitably inscribed, a set of carvers, and a dozen knives and forks. Mr. E. BECKETT, on behalf of the subscribers, made a few kindly remarks and expressions of goodwill, and spoke of the satisfactory way in which Mr. Cox had fulfilled his duties, and the high esteem in which he was held.

SEPTEMBER HORTICULTURAL MEETING AT GHENT.—Certificates of Merit were awarded (par acclamation) to:—M. Jules Hye, for *Cypripedium triumphans*, an excellent hybrid from *C. ænanthum superbum* × *Sallieri Hye*anum, and which we will describe fully later on; to the Société Louis van Houtte père, for *Sonerila Madame Léon Say*, a valuable acquisition to be described later on. Certificates of Merit were allotted to:—M. Guill. Ghysalincx, for a seedling *Rhododendron*, the leaves of which are marked down the centre with a very broad band of golden-yellow; to the same exhibitor for *Dracæna indivisa Veitchii* (a seedling from that variety), a valuable novelty; to the Société Horticole Ste. Dorothee, for *Echmea Weilbachii aureo-striata*, a pretty variety; to M. V. Coppenolle, for *Dracæna Van Coppenolleana*, a seedling from *australis* (1892), but the variegation is reversed, the yellow, instead of being in the centre of the leaf, is at the edges—this is a decided acquisition; to MM. Duriez Frères, for *Adiantum cuneatum fol. var.* (Certificate par rappel); to M. H. Schmitz, for an *Encholirion*, introduced from Brazil—a capital plant, very decorative, and worth further consideration; to M. Jules Hye, for *Miltonia Moreliana superba* (Certificate a l'unanimité), the flower unusually dark, the divisions of considerable width—the plant well grown; to the same exhibitor, for *Cypripedium giganteum*, a hybrid

from *Harrisianum* × *Sallieri Hye*anum, and noticeable for the size of the flower, and especially of the lip. A collection of cut flowers of *Gladiolus*, containing some excellent specimens, was sent by M. Henno-Delbosse, of Tournai; and *Sonerilas Madame Blommaert* and Prof. Ch. de Bosschère (both valuable acquisitions), by the Société Louis van Houtte père. Certificates for Cultivation and Blooming were allotted to M. Guill. De Saegher, for a lot of *Cuphea platycentra aur. var.*, charming specimens on a stem measuring from about 10 to 19 inches long, the foliage variegated and flowers abundant; and to M. Ameye, for *Saxifraga sarmentosa*, a plant with large leaves of very decided colouring. *Ch. D. B.*

ACREAGE OF HOPS FOR THE LAST THREE YEARS.—According to the returns issued by the Board of Agriculture, the acreage under Hops in England, as returned upon the 4th of June in the years 1891 and 1892, and on the 5th of June in the year 1893:—

COUNTIES.	1891.	1892.	1893.
	Acres.	Acres.	Acres.
Berks	11	10	11
Gloucester	25	39	33
Hants	2,749	2,775	2,795
Hereford	6,580	6,797	7,079
Kent	34,266	34,058	34,815
Notts	14	14	12
Salop	112	117	123
Suffolk	20	18	21
Surrey	1,955	1,938	1,845
Sussex	7,150	7,124	7,326
Worcester	3,280	3,369	3,516
Total	56,142	56,259	57,576

HARDY PERENNIALS.—Messrs. JOHN LAING & SONS send us a boxful of cut perennials, which show good effective and interesting these plants are. It is impossible, and, indeed, it is not necessary, to enumerate them all, but we may pick out the following:—

Michaelmas Daisies, &c.—*Aster William Bowman*, a form of *A. novi-belgii*, with deep rosy-lilac narrow rays and orange disc. *Aster umbellatus*, flower-heads whitish, small, in moderately compact wedge-shaped corymbs; good for cutting. *Aster novi-belgii versicolor*; remarkable for its linear leaves, and dense many-flowered clusters of flower-heads, some white, others lilac; useful for cutting.

Sunflowers and other Composites.—*Helenium pumilum*, with glabrous sessile leaves, and heads of yellow flowers on long stalks; the ray-florets are broadly wedge-shaped, 3 and 4-toothed; one of the best of the dwarf kinds. *Helenium grandicephalum striatum*: this is a form highly to be recommended for its rich brown orange ray-florets, streaked with yellow; it is one of the most attractive of its class. *Silphium connatum*, one of the taller-growing kinds, very effective in front of shrubs. *Helianthus multiflorus*, *Soleil d'Or*, one of the best varieties of this old species; *H. multiflorus Bouquet d'Or*; *H. multiflorus plenus*; *H. rigidus*, a puzzling species, of which there are numerous ill-defined forms. *Heliopsis patulus*. *Rudbeckia californica*, a tall-growing, loosely-branched kind, with glabrous lanceolate leaves, and large flower-heads of clear yellow, on long, erect stalks. *Coreopsis grandiflora*; *Gaillardia grandiflora* in variety, very brilliantly coloured; *Achillea millefolium roseum*, useful for its rosy colour. *Chrysanthemum latifolium*, *C. maximum* (both white).

Miscellaneous.—*Epilobium rosmarinifolium*, with linear leaves and pink flowers; *Gypsophila repens*, of dwarf habit than *G. paniculata*, and consequently more useful in small gardens, where space is a consideration; *Saponaria officinalis*, the double-flowered form, with very fragrant flowers; *Lobelia splendens*, *Rose Queen*, a very richly-coloured form. *Pentstemons* have always been a specialty with Messrs. LAING, and the specimens they send us show that

in brilliancy of colouring these plants have this year surpassed themselves. *Sedum Ewersii*, a low-growing, prostrate under-shrub, with small, opposite, sessile, rounded, glaucous leaves, and dense panicles of pink flowers.—Messrs. VERTEGANS send *Bocconia japonica*, similar to *B. cordata*, but with larger, more boldly-divided leaves, not quite palmately nor quite pinnately, but somewhat intermediately lobed, the lobes themselves blunt and sinuate; the under-surface is creamy-white; the inflorescence is like that of the commoner species.

FLOWER SHOW REPORTS RECEIVED.—St. Andrew's Horticultural, August 24, Morebattle, Hawick, Roslin, Liberton, Carrie, Chryston, Cadder, Lennoxton, Abercorn, Muckart, Alloa, Alva, Muthill, Banchory, Innerleithen, Jedburgh, Bridge of Earn, Balfour, Torphichen, Newton Grange, Arnieston, Bonnyrigg, Pathhead Ford, Bearton, Grangemouth, Markinch, Alyth, Uddingstone, Stow, Kirkpatrick, Muirkirk, Craigs, Upperkeith, Malling, Rocester, Shepherdawell, Ambergate, Eckington, Birchover, Marsden Moor, Ellesmere Port, Ayr, Linfield, Cheahire Agricultural, Rothbury, and Ruthin.

ARTIFICIAL EDELWEISS.—In the current number of the *Journal of Botany*, Mr. F. N. WILLIAMS, the monographer of *Dianthus*, confirms the statement of the production of artificial Edelweiss from grey cloth, as stated in a previous number. For some reasons we should be glad if other plants could be equally well counterfeited. The manner in which Ferns are uprooted for sale, mostly for people who could not distinguish between Parsley and Parsley-Fern, makes one wish some artificial Fern could be fabricated to ensure the safety of the genuine article.

PRICES OF HOME-GROWN TIMBER IN BEDFORDSHIRE.—Mr. A. D. WEBSTER reports that the following prices were realised for home-grown timber of fair quality at the recent auction sale on the Woburn estate:—Oak, 1s. 6d. per foot; Ash, 1s. 6½d.; Elm, 8½d.; Spanish Chestnut, 11d.; Poplar, 10½d.; Willow, 11d.; Maple, 11½d.; Larch, 1s. 1d.; Beech, 9d.; Lime, 10d.; Sundry poles and tops, 1s.

A NEW GREEN PIGMENT IN PLANTS.—Mr. D. HOOPER, of The Laboratory, Ootacamund, writes as follows:—"In the issue of the *Gardeners' Chronicle* for July 22, notice is made of a discovery by Professor TSCHIRCH of a new green colouring matter in *Trichosanthes pubera*, which he has named trichosanthin. I should like to point out that the green colouring matter of the pulp of some of these plants was isolated by me in 1889, and the colouring principle of *Trichosanthes palmata* was specially investigated spectroscopically by Mr. MICHAEL SMITH, of Madras, who read a paper on the subject before the Royal Society of Edinburgh in 1890. An account of these plants, their chemical composition, and a comparison of the spectrum of the colouring matter with that of chlorophyll, may be found in *Pharmacographia Indica*, vol. ii., pp. 70-74. It will be seen that the term 'trichosanthin' was applied by me, not to the pigment, but to the bitter glucoside, the active principle of the plant."

MR. J. M. HENRY.—We are informed that Mr. HENRY, for the last fourteen years Superintendent of the Baroda State Gardens, the last five of which he has carried on the double duties of Superintendent of Gardens and executive officer for Mr. W. GOLDBRING of Kew in his work of laying-out new gardens, and re-modelling old ones, has now been transferred wholly to the landscape department, and will devote the whole of his time to that work, under the able direction of that gentleman, who remains in England for eighteen months before returning to India to carry out the many new parks and pleasure-grounds H.H. the GAERWAR contemplates making throughout his extensive territory for his people.

LOCAL RATES.—The Board of Agriculture has circulated a leaflet containing some information as to the method of procedure to be adopted by occupiers

of land who may seek to obtain a reduction of their assessment to the poor-rate and other local rates, on the ground that their premises have been valued at too high a figure, or the valuation maintained at a level above the actual value. Outside of London the basis for the assessment of the poor-rate, and practically of every other local rate levied under the general law, is the valuation-list made under the Union Assessment Acts. There are only thirteen places in England and Wales, outside London, where the Union Assessment Acts are not in force.

1. *As to the Poor rate.*—The poor-rate is assessed upon the net annual or rateable value of premises, as fixed by the valuation-list.

2. *As to Rates other than the Poor-rate.*—The principal rates other than the poor-rate which are levied under the general law are the borough-rate, the county-rate, the highway-rate, the general district-rate, and certain rates levied for sanitary purposes in rural sanitary districts. All these rates are based practically on the valuation-list.

3. *Special Assessments of Land not occupied by Buildings.*—In the case of three of the rates mentioned in Part 2 of the memorandum, the law provides for the assessment of land not covered by buildings, at a less rate than property consisting of buildings, &c. These three rates are the general district-rate in an urban sanitary district, a separate rate for special sanitary expenses in a rural sanitary district, and the lighting-rate. Occupiers of land used as arable, meadow, or pasture ground only, or as woodlands, allotments, orchards, market-gardens, or nursery grounds, are assessable to a general district-rate in respect of such land in the proportion of one-fourth part only of the rateable value according to the valuation-list; and in the case of a separate rate for special sanitary expenses, they are, according to circumstances, either to be assessed in respect of one-fourth part only of the rateable value of the land, or are to pay in respect of it one-fourth part only of the rate in the pound payable in respect of houses and other property. Occupiers of houses, buildings, and property (other than land), are required to pay, in respect of their assessment to the lighting-rate, a sum in the pound three times that paid by occupiers of land; so that if the rate on other property is 6d. in the pound, occupiers of land have to pay only 2d. in the pound. Failure, in rating such occupiers, to allow the partial exemption for which the Acts provide, would be a good ground of appeal against any of the three rates above mentioned.

REV. LEONARD BLOMEFIELD.—The death, on the 1st inst., at the advanced age of ninety, of this eminent naturalist, is announced. Mr. BLOMEFIELD was better known to a former generation of naturalists as LEONARD JENYNS, he having assumed the name BLOMEFIELD at a later period. So long ago as 1835 his *Manual of British Vertebrate Animals* was published at the Cambridge Press—a book which long enjoyed the high consideration of naturalists, and which, even now, is not obsolete. The descriptions are excellent, the arrangement lucid, and the notes instructive. Compared with the rambling dissertations which some naturalists now indulge in, the clearly-defined, well-ordered statements make one wonder whether science has really so greatly advanced since the early part of the century; its methodical presentation in many cases certainly has not done so. Mr. BLOMEFIELD was chiefly known as a zoologist, and was a frequent contributor to LONDON'S *Magazine of Natural History*. Mr. JENYNS edited an issue of WHITE'S *Selborne*, and, inspired by that work, he published some *Observations on Natural History*, and on *Meteorology*. To our own columns, LEONARD JENYNS was an occasional contributor in bygone days; indeed, only a few years have elapsed since he wrote in these columns on the outgrowths from trees, generally known as burrs. In 1862 he published a sympathetic memoir of his friend and kinsman, the late Rev. Professor HENSLOW. Of late years, Mr. BLOMEFIELD resided at Bath, where he continued to take much interest in local natural history. Mr. BLOMEFIELD was elected a Fellow of the Linnean Society so far back as 1822, so that he

was the "father of the Society," and in that capacity an address of congratulation and sympathy was, a few years since, presented to him. It may be added that Mr. JENYNS, while a student at Cambridge, was offered the post of naturalist to the "Beagle," which was afterwards accepted by CHARLES DARWIN.

CAMPANULA EXCISA.—This is a rare alpine species, found on the Simplon, and distinguishable from its allies in the circumstance that each of the lobes of the corolla is narrow at the base, so that between each two of them there is a round aperture or sinus. The stem-leaves are linear; the calyx-lobes of similar form, ultimately reflexed; the corollas blue. Our illustration (fig. 53) is from a plant in the Royal Gardens, Kew.



FIG. 53.—CAMPANULA EXCISA.

ROYAL BOTANIC GARDEN, CALCUTTA.—The report for the year 1891–1892 shows that a steady advance has been made during the year in improving the garden, both as a scientific centre and as a pleasant resort for the public. At the commencement of the year the season was abnormally dry, and although this had the effect of destroying a number of Palms and other out-door plants, these losses were repaired to a great extent before the cold season began. The herbarium continues to receive special attention; more than 15,000 specimens were added to it during the year.

"The collections made by Mr. GAMMIE were the result of a botanical excursion to some of the less known parts of Independent Sikkim and of the Tibetan frontier, on which he was specially deputed with the sanction of Government. They contain many rare plants of much interest. Mr. GAMMIE was absent for four months. His first excursion extended through the Singalelah Range to its origin in Kinchinjunga. In the vicinity of Kinchinjunga itself Mr. GAMMIE was, on account of the great inclemency of the weather, able to remain only a few days. He next travelled across Sikkim to Tum-long, from whence he followed up the Tista to Chungtam.

From thence Mr. GAMMIE explored the Lachung Valley as far as the Donkia La, which was the northern limit of his travels. He spent two months in forming collections in this valley, and then ascended to Thanka La, and also to Ghora La at the head of the Sebu valley, one of the few tracts in this region which Sir JOSEPH HOOKER was unable to visit during his sojourn in the Eastern Himalaya in 1849–50. From Lachung Mr. GAMMIE returned to Toomlong; and from thence he traversed the Chola range, visiting the Chola, Yak-la, and Zey-lap-la passes. He returned to the Cinchona plantation by the military road from Gnatong to the Tista bridge. Mr. PANTLING's collections consisted exclusively of Orchids, of many of which he has prepared most admirable drawings, which it is hoped may some day be published. The collections from the Andamans were made by two Burmese, who have worked under the supervision of Mr. E. H. MAN, C.I.E., whose efforts to help in the exploration of these islands have been most disinterested and laborious. Native collectors were sent as usual to Assam and Burma."

NATIONAL ROSE SOCIETY.—The *Gardeners' Magazine* prints at length the questions recently put unofficially by Mr. GRAHAM, and a summary of the answers received. The questions were:—

1. Do you think the Annual Tea Rose Show at the London Scottish Drill Hall, Westminster [Royal Horticultural Society], advantageous or otherwise to the Society and its exhibitors, and would you maintain or abolish it?
2. (A) About what date do you consider best for our Annual Metropolitan Show?
(B) Do you think Saturday the best day on which to hold that meeting, or do you think the exact day of the week immaterial?
3. About what date do you consider best for the Provincial Show, bearing in view that this meeting should be fixed chiefly to suit growers in late districts?
4. (A) Do you think two Metropolitan Shows of equal importance would be preferable to the present arrangement of a Metropolitan and Provincial Show?
(B) Or if the arrangements for the two shows be left as they now are, would you divide the prize-money more equally?
5. Do you think it would be desirable that candidates for membership in our Society should go through a form of election?

In reply to question 1, the analysis of the replies gave a percentage of 49 in favour of the retention of an early Tea Rose Show, 35 per cent. wished to abolish it, and 16 per cent. were indifferent, but many of those in favour of the retention of such a show were also adverse to the present locality of the show, and in favour of a general early show in a southern locality.

QUESTION 2A.

End of June to July 3	...	...	43 per cent.
July 1 to 6	...	...	39 "
July 4 to 14	...	...	18 "

It will be seen at once that the majority is unmistakably in favour of comparatively early dates.

QUESTION 2B.

While bound to Crystal Palace, same date as now	...	...	46 per cent.
Saturday, worst day	...	...	33 "
Immaterial	...	...	21 "

QUESTION 3.

Mid-July, or a fortnight after Metropolitan Show	...	...	79 per cent.
Indifferent	...	...	21 "

QUESTION 4A.

For two metropolitan shows	...	...	25 per cent.
Against	...	...	70 "
Indifferent	...	...	5 "

QUESTION 4B.

For more equal division	...	...	30 per cent.
For present division	...	...	67 "
Indifferent	...	...	3 "

QUESTION 5.

For election	...	...	44 per cent.
Against election	...	...	47 "
Indifferent	...	...	9 "

THE UNITED STATES FORESTRY DIVISION OF THE DEPARTMENT OF AGRICULTURE has, says the *Builder*, been making some experiments in order to ascertain the loss of strength and durability brought about by tapping Pine trees in order to obtain turpentine, &c., from them. It has been generally supposed that the boxing of the tree detracted from the virtues of the timber for constructive purposes, but the investigations of the department tend to negative this view. Both chemical and mechanical tests have been made with the same result as to the non-destructive effect of tapping or "bleeding." Over 300 tests on thirty-two Pine-trees from various localities were made; some of these

were boxed or "bled," and some were not; and it is a curious fact that the boxed timber showed a better average than that from which the turpentine had been taken. The superiority of the bled timber may, however, be accounted for by the fact that trees which are used for turpentine supply are generally placed in sites more favourably situated for their growth. It is, however, shown by the experiments, that the heart of the tree is not affected by the bleeding, the flow of resinous-matter being in the exterior sap-portion of the trunk. It has long been known that bleeding of the tree retards its growth; and it would appear that this is its only effect in regard to its influence on the quality of the timber. It may be that this checking of the growth has a favourable result on the wood, as tending to the slow growing of the timber.

HOME CORRESPONDENCE.

THE AGRICULTURAL HALL SHOW.—Whilst opinions are conflicting as to the success or otherwise of the great Agricultural Hall Show, which the Royal Horticultural Society have so energetically promoted, I fear it will have to be conceded that much effort looked for was wanting through the absence of groups of flowering plants, which, had they been present, would have constituted a grand feature. In any case, all must admit that at present there is no place in London that gives such ample area, or in which such a splendid floral display could be held as does the Agricultural Hall. Horticulturists accustomed so much to the west side of London, find it hard to look favourably on the Hall, yet it is situated in one of the busiest and broadest thoroughfares in London, and in the midst of a marvellous population. Very likely the people of North London have to be accustomed to flower-shows, but they have been so accustomed to such sensational elements in the form of so-called entertainments, that flower-shows are doubtless rather slow in their estimation. It may be possible to correct that in time. To the many who love Chrysanthemums for their beauty, how delightful would be the change from the Westminster Aquarium, with all its noise, rattle, and dust, to the quietude and enjoyableness of the Agricultural Hall, for the National Society's Chrysanthemum shows. On the other hand, to the greater many, the noise, rattle, and sensationally dangerous "amusements" (heaven save the mark!) constitute the chief attractions at the Chrysanthemum shows. Again, were these shows transferred to Islington, what very fine effects might be obtained in the general arrangement which is now so broken up at the Aquarium. When at the Agricultural Hall, I could but think what folly it was, with such a grand building at hand, to propose, as was so lately done, the building of a place on the Thames Embankment for the holding of a great National Fruit Show. Happily that project was dropped, but if ever it is revived, surely it would be madness to incur an enormous expense to put up a special building when the Agricultural Hall was at hand, and so accessible from all parts of London. Should the Royal Horticultural Society arrange to hold another show at Islington next year, it would be an immense encouragement to fruit growers were the schedule framed to allow choice fruit to be shown only two days, and then the promoters of the proposed City fruit show might be disposed to give prizes for other fruit classes for the following two days, and thus enable this great exhibition to become what it should be—the great annual fruit exhibition of the metropolis. *A. D.*

FRUIT-GROWERS AND MARKET PRICES.—Your correspondent, "Alpha," p. 244, in his caution to fruit-tree planters, appears to have a very poor opinion of growing fruit for market, and his caution ought certainly to be investigated—but his prices must also be inquired into. His quotations are bad, and show there must be a mistake somewhere. For the benefit of growers, I give a list of prices obtained from Mr. George Monro, salesman, Covent Garden Market, for fruit grown and sent from the county of Stafford, and I think "Alpha" himself should carry the matter further, and give us the name of his salesman. The following are some of the returns from Mr. Geo. Monro: August 30, 1893, twenty-four Nectarines at 10d. = £1; twenty-seven small at 7d. = 15s. 9d. August 29, one hundred Peaches and Nectarines, £2 18s. 11d., or a little over 7d. each.

August 15, twenty-eight Nectarines at 1s. each = £1 8s. Now, say two fruits are grown per foot of surface, or eighteen to the square yard, at the latter price, after deducting carriage and commission, will leave a respectable price, and one at which fruit can be grown at a profit. The grower here sends fruit of first-class quality, both in size, colour, and ripeness, and I hope "Alpha" will compare the above with his prices. *Robt. Cock, Horticultural Lecturer, Staffordshire County Council.*

—As fruit arrives so often damaged, no one can judge whether growers have been dealt fairly by without seeing the consignment, and knowing all the circumstances. Salesmen have a bad name amongst a class of small amateurs whose goods, as a rule, do not pay a salesman to take in. I am glad to say, that where we have business people to deal with, we can always satisfy them, and I for one am quite content, when you have any complaint referring to any sales of mine to offer the fullest investigation. I also think you should make such writers substantiate their complaints before publishing them. *Salesman.*

—In August, 1892, I sent five consignments (twenty-six dozen) of *Eucharis amazonica* flowers, the individual blooms being large, of fine substance, and perfectly fresh, to a fruit and cut-flower salesman in Covent Garden Market, sending him consignments of Peaches at the same time. Sale notes of returns for the fruit were duly received, but none for the *Eucharises* (although repeatedly asked for) until the supply was exhausted. At length I was put in possession of a document, of which the following is an exact copy (omitting the name and address of the salesman):—"Aug. 19, 4 dozen *Eucharis*, not sold, market glutted, and no sale for them." (They were quoted at the time at 2s. 6d. to 5s. per dozen in the gardening papers.) "Aug. 20, 3 dozen *Eucharis*, not sold; 3 dozen *Tuberoses*, 1s. 3d. Aug. 23 114 *Eucharis*, not sold; 8 dozen *Tuberoses*, 1s. 6d. Aug. 26, 5 dozen *Eucharis*, not sold. Aug. 27, 4 dozen *Eucharis*, not sold. Total for *Tuberoses*, 2s. 9d.; less toll, 2d.; commission, 3d. = 5d." "Flower trade very bad indeed," being appended by way of explanation! *A Victim.*

—I have read with interest the letters in your last issue from "Alpha" and "A. D." with respect to the low prices of fruit this season. Certainly a dismal tale is told—perhaps too dismal, considering how every fruit-grower this year has had to face the most unwelcome of all things to him—viz., a glut of fruit. I will take "Alpha's" letter as it stands:—Peaches at 4d. or 6d. a dozen either shows that his fruit is much below ordinary quality, or he should change his salesman. Golden Gages and Washington Plums, he should remember, cannot be expected to realise a fair price per box when other growers are marketing them at the rate of 50 bushels per day. Apples, every grower knows this year, are a poor trade; yet returns from the Midlands last week show 4s. 6d. per bushel for good Warner's King. Now, as to remedy. It may be years before another such a crop of fruit as this season's shows itself, and perhaps by the time it does come, many fruit-growers will have gained considerable experience—certainly as to the low price that fruit can make, if nothing else. Fruit-growers are in the hands of the salesman—there is no help for it; and until some one comes along with a remedy, they must continue to patronise him. They all know that fruit, after it leaves his care, realises double—often more—than he sells it at. The fruit-grower would like to get his produce direct to consumer—of that all are agreed. How can he do it? He has 500 or 1000 bushels of Plums fit for gathering—a day's delay cannot be thought of—are they to spoil while a remedy is being found for obtaining higher prices direct from the public? A firm of fruit-growers near Cambridge have turned their fruit produce for several seasons now into jam. The manner in which this firm buys up fruit, clearly proves that jam-making is a profitable undertaking, for we all know that be there glut of fruit or not, jam is never any cheaper one year than another. As a venture, let some of our fruit-growers follow this precedent, and I feel certain a better return is in store for them. They must themselves make the jam, and label it according to variety; people are beginning to know fruits by their proper names. This is certainly a better plan than spending money in heavy carriage on fruit to dubious salesmen; and advertise your wares, a good article always selling well. In conclusion, I give a few returns from the principal markets during the last

week, and would suggest both to "Alpha" and "A. D." that they should set about remedying the state of things they complain of rather than furnishing up old material which the fruit-grower has by sad experience learned long since to accept:—Peaches, good, 5s. per dozen; Apples, already quoted; Plums, 2s. 9d. and 3s. per half-sieve; Pears, 3s. per bushel; Tomatos, 3s. per peck. *Apricot.*

FINE PEASGOOD'S NONSUCH APPLE.—We think it may interest some of your London readers to know that the exceptionally fine specimen of Peasgood's Nonsuch Apple (26 oz.), referred to by Mr. Lake in your issue of August 26, is now on show in our window at 53, London Wall. It is a very perfect and beautiful fruit. *Carter Page & Co.*

UNTIMELY FLOWERING OF RHODODENDRONS.—As showing the effect of the late drought on vegetation, it may be of interest to your readers to know that on the lawn at Gosfield Hall, Halstead, Essex, a bush of *Rhododendrons* was in full flower at the end of August. The bush measures 60 feet in circumference, and 10 feet in height, and it had a very attractive appearance. The plant did not flower at the usual time, but on rain coming in the end of July, its flower-buds, which had so long remained dormant, commenced to expand. The rest of our *Rhododendrons* flowered as usual. *J. F. Morgan.*

ROOT-PRUNING IN THE NORTH.—Your able correspondent, Mr. Markham, is desirous of learning what effect root-pruning has on fruit trees in the North (Scotland). The answer to the question is, that, wherever the work is performed judiciously, the best results follow. I use the word judiciously to make a distinction from the ruthless method of hacking off roots, large and small, just as the operator comes across them. I am quite in touch with what Mr. Markham says on the piecemeal method of removing roots which are causing gross unfruitful growths, and the removal of those known as tap roots should be imperative; and others, descending into the subsoil from the action of sun and air, should have their progress arrested by cutting off, or lifting them upwards. Whatever is conducive to formation of fibre is also conducive to fruitfulness, healthy foliage, and moderate wood growth. In the North it is important to secure an early and healthy resting period for fruit trees, and wherever roots have been properly manipulated, this desirable state of matters is realised. *M. Temple, Carron House, Stirlingshire.*

SUMMER-PRUNING OF FRUIT TREES.—There is a great diversity of opinion as to the time when, and the extent to which, the trees should be operated on, and there are some people who go so far as to question whether summer-pruning is really needed. I am fully convinced myself that when it is judiciously performed, summer-pruning is one of the greatest possible aids towards the successful cultivation of fruit in the open air. For some years past I have been testing summer-pruning at different times during the summer months, and kept a register of these, and I find the best time for summer-pruning of old trees upon walls is, first operation to take place early in July, all the strongest of the shoots should then be removed by breaking, or cutting by pruning scissors, or if the spurs are close together and appear crowded, I have had the shoots wrenched away in preference to cutting; the first removal of summer growths will let in sun and air, which, in my opinion, is very essential at that time of year. The second operation to take place either at the end of July or early in August. The trees then might be made to look neat at this operation by removing all shoots that were left at the first pruning; and in September the spurs should be thinned out to let in more sun and air to ripen the buds. That system of summer-pruning I have found very successful for old trees upon walls. For bush, or espaliers, or pyramid trees, I have found, after carefully studying the matter, the best time to commence summer-pruning is about the first week of July, and then only to thin out the growths, always leaving the shoots full length for the extension of the branches without shortening, until October, then those shoots may be shortened about half their length, and I prefer doing the work of thinning at twice rather than at one operation. I have found in removing a large quantity of summer growth, that too great a check is given to the fruit tree or trees. My practice is—and the experience of some years convinces me to be one of the best, and this system of summer-pruning I am teaching

in twenty-four districts of Shropshire, and have been for some weeks past, but for young fruit trees I advocate full extension of the summer growth; the growths to be fastened and trained during summer to get them well matured. For cordon trees I have practiced extension, by allowing some of the shoots to grow at will, bending them over and otherwise fastening them for neatness; and by thinning out some of the growths in July and August, have found those trees much more fruitful and kept more healthy than when the cordon trees were under the early pinching from May onwards. I am an advocate for allowing some summer growths to remain on the trees unchecked until autumn, and have found it answers well. For the old Plum trees upon walls, I have practised the system of having some of the summer shoots fastened to the old branches, if there was not room between the branches, and have found it answer well, for it is well-known amongst gardeners that Plum trees are often not fruitful on the spurs, when the spurs are allowed to extend far away on the front of the branches. I have been very successful with the shy-bearing Greengage Plum under this system of management, and have applied it successfully to other varieties of Plums. *Robert Smith, Shrewsbury.*

THE VICTORIA REGIA.—By reference to the *Proceedings of the Botanical Society of London*, vol. i., part 1, 1839, your correspondent "W. W." will find that a paper was read, accompanied by drawings, from Mr R. H. Schomburgh, dated New Amsterdam, River Berbice, May 11, 1838, on what he considered to be a new species of *Nymphaea*, but which the President had compared with *Nymphaeaceae* in the herbarium of the British Museum, and was satisfied that it would form a new group intermediate between *Nymphaea* and *Euryale*, and therefore proposed that Mr. Schomburgh's intention of naming it after her present Majesty, Victoria, should be carried into execution, her Majesty having previously granted her permission. It was therefore named *Victoria Regia*, and the Society has adopted this plant as its emblem. Mr. Schomburgh remarks: "In my rambles through the West Indian Archipelago, I had frequently met the white Water Lily; but the remark of an eminent botanist, that these floating plants were entirely unknown on the Continent of South America, did not make me expect to find a representative of that tribe, which for the superior grandness of its leaves, the beauty of its flowers, and its fragrance, may be classed amongst the grandest productions of the vegetable world. It was on January 1 this year, while contending with the difficulties Nature opposed in different forms to our progress up the River Berbice (in British Guiana), that we arrived at a point where the river expanded and formed a currentless basin. Some object on the southern extremity of this basin attracted my attention. It was impossible to form any idea what it could be, and animating the crew to increase the rate of their paddling, shortly afterwards we were opposite the object which had raised my curiosity. A vegetable wonder! All calamities were forgotten. I felt as a botanist, and felt myself rewarded. We met them hereafter frequently, and the higher we advanced the more gigantic they became. We measured a leaf that was 6 feet 5 inches across its rim, 5½ inches high, and the flower 15 inches across. The flower is much injured by a beetle (*Trichius*), which destroys completely the inner part of the disc; we have counted sometimes from twenty to thirty in one flower." The beetle, of which specimens are deposited in the cabinets of the British Museum, is the *Rutela trilineata* of Guern, R. Schomburgh of Hope, and R. Ceta of Weber, *J. Garbett, Canford.*

Absence from home last week prevented me referring "W. W." to a figure of the *Victoria*, "in the open air," in the *Dictionary of Gardening*, by the present Curator of Kew, and which shows the outer and older leaf flattened out, as described by me. Farther, if the leaves are turned up to prevent aquatic animals from getting on to their surface, as "W. W." suggests, Nature appears to have also taken means to defeat that end, for Dr. Schomburgh, in his description of the plant in its native habitat, says, "Many aquatic birds were running to and fro on the leaves, chasing the numerous insects which were humming around the flowers." The leaves of the *Victoria*, I may add, are extremely tender in texture, and are probably never seen, in the natural state, as entire as in our hothouses. I once heard Sir Jamsesjee Jeeheeboy say he never saw the *Musa Cavendishii* so entire in India as in a hothouse in this country. In the open air they are ragged. *Vic.*

AN EXPERIMENT WITH POTATOS: TWO CROPS PER ANNUM.—We commenced to dig our early Potatos out-of-doors on May 26 this year, and as we like new Potatos, we replanted the same ground, as it was cleared, with fresh sets of the same variety of Ashleaf Kidney. To-day, August 26, we have commenced using the second crop. They are sound, good, and plentiful, and as many people, like ourselves, prefer new Potatos to old ones, the experiment is worth repeating. *Thos. Fletcher, Grappenhall, Cheshire.*

ASPARAGUS IN LANARKSHIRE.—The culture of Asparagus is practised with great success much further north than any part of Lanarkshire, but soil has often much more to do with this than either latitude or altitude, and where the land is heavy and damp with a clayey subsoil, it is almost impossible to get the plants ripened early enough to be at rest before winter sets in. Where the crowns and roots are full of sap at the end of the year, decay from damp attacks the roots at the collars, and oftentimes all over. When such is the case, artificial treatment must be resorted to in order to combat with the evils, and that is not an easy matter so far as labour is concerned. After thoroughly draining the whole of the soil in which the Asparagus roots are to grow, it should be raised by adding pasture-turf, road-scrappings, half-decayed garden-rubbish, burnt-earth, and even coal-ashes and brick-rubbish. There should be a good depth of soil placed above these, at least 18 inches, which should be well mixed with sand. Beds 4 feet wide should there be formed, and the roots planted thereon in rows, the planting being done with plants just beginning to grow. The finest Asparagus I have ever seen was grown near Perth and Dundee, *M. Temple, Carron House.* [The above was kindly furnished by our correspondent, himself resident in Lanarkshire, in answer to our enquiry from "M. L. B.," another Lanarkshire gardener, desirous of ascertaining the possibility of cultivating Asparagus on a cold, retentive soil, his previous attempts having ended in failure. *Ed.*]

A USE FOR WIND-FALLEN APPLES.—It is a very common practice in many households to brew ginger-beer; if, instead of using lemons for this, they are replaced by Apples roughly sliced, and boiled in water to a paste, the result is both cheaper and better, either with or without a small quantity of ginger. Apples which are quite unsaleable are quite good for this purpose, and when windfalls are plentiful they may be used to advantage; about 1 lb. of Apples per gallon will be a liberal quantity. We have used Plums, Currants, honey, and Gooseberries, for the same purpose, the three latter being very satisfactory. *Thos. Fletcher, Grappenhall, Cheshire.*

SOCIETIES.

ROYAL SCOTTISH ARBORICULTURAL.

(Continued from p. 281.)

The New Forest.—On the Friday an early start was made by road for Lyndhurst, once more the starting-point, to examine the northern parts of the forest. Here we were again met by Mr. Lascelles, who stopped our vehicles for the first time at Malwood, the sylvan retreat of the Chancellor of the Exchequer. On the site of an ancient entrenchment, and of a more recent keeper's lodge, this lovely spot, for which Sir William Harcourt has to pay a considerable ground-rent to the Crown, commands the most exquisite views of Southampton Water, the distant Isle of Wight, and the surrounding forest. The house has, in fact, been built to fit the views, which have long been gained by "peeps" cut through the trees. Though not completed more than ten years, the lower storey is densely festooned with many different creepers, anent which a story is told which is too good not to be repeated. An admiring lady remarked to the learned owner, "Surely, Sir William, your creepers grow so well, so very much better than we can grow them, it must be because God loves you very much." "No, Madam," was the reply, "it is not that. It is pig-manure."

We then descended the slope into Canterton Valley to inspect Rufus' Stone, or rather the iron case that now enshrines the stone which marks the spot where the Red King was most assuredly murdered. Having read the inscription, we divided into two parties, one under the leadership of Mr. Lascelles, walked through the fine old wood of Long

Beech, dating from 1771-6; and the other, under that of his clerk, Mr. Campbell, through King's Garn plantation, a wood of Oak, with Scots Fir nurses, dating from 1870. This latter, which has already yielded a good crop of thinnings, both of Fir-poles and of Oak-dittorns, as mine-timber, seemed very promising, though not as ornamental as older woods, or as those planted without Coniferous nurses. The soil is poor for Oak; in fact, for a good quality of Oak timber free from shake, there is hardly any suitable land in the Forest.

Having re-united on Fritham Plain, we next started to walk through Bentleys Plantations, before reaching which we had an opportunity of seeing the method here adopted for cutting turf. This "common of turbary," now falling into disuse, consists in paring a clod of Heather roots with the slight adherent humus, two clods being supposed to be left for each clod taken in any one year. Poor as the heath-land naturally is, and poor as is the fuel thus obtained, no true peat being dug in the forest, this practice is as sure a method as could well be imagined for still further impoverishing these barren wastes.

North and South Bentleys, with the not far distant Salisbury Trench, which we saw but did not visit, are extremely interesting both from their origin and from their present condition. They were planted in 1700. "Pits or beds of three spits of ground each were dug a yard apart, and three acorns planted triangularly in each bed. . . . The ground was [then] sown with haws, Holly-berries, Sloes, and Hazelnuts, and drains cut where necessary." The soil was bad, and the plantations were never thinned; but yet they have yielded, and still might yield, a heavy crop of Oak timber. It was of Salisbury Trench that M. Boppe and his colleagues from Nancy reported some years ago that they had never elsewhere seen so great a number of cubic feet of Oak on the acre. The trees are immensely drawn up, and though now thinned, are still thick. They are all at, or past, their maturity; but the Commissioners may not clear the woods, as scientific forestry would advise, whilst they dare not thin much more lest the wind getting in should blow down the whole of these spindly poles. Holly is now the chief remaining undergrowth.

After this instructive object-lesson in the difficulties of the present New Forest management, we retraced our steps to Canterton Valley, where a most acceptable lunch awaited us under the trees. Mr. Lascelles was cordially thanked by the party for his two days' chaperonage, and the machines had soon after to be remounted for the return-drive to Southampton, by way of Cadnam and Totton, in order that the 7.25 train might be caught for London.

TROWBRIDGE HORTICULTURAL.

AUGUST 23.—For forty-four years this Society has held an exhibition at Trowbridge, and it is among the most popular of the West-of-England exhibitions. Singular to state, it is very rarely indeed that the day is wet, and the Society is invariably in a flourishing financial position. Mr. James Huntley, the popular Hon. Secretary, has filled this position for about thirty years. The late exhibition took place, as usual, in the public ground adjoining the railway station, and five large tents were required to display the exhibits.

Stove and Greenhouse Flowering Plants.—These were extensively and admirably shown, the chief prize-winner being Mr. H. Matthews, gr. to Sir R. W. Brown, Bart., Trowbridge, who was 1st with nine, and also with six and three, staging well-grown and bloomed clean and fresh examples of *Ericas*, *Allamandas*, *Dipladenias*, *Ixoras*, &c. The other successful exhibitors of these plants were Mr. G. Tucker, gr. to Major W. P. Clark; Mr. H. Pocock, gr. to J. P. Haden, Esq.; and Mr. J. Hiccox, gr. to E. B. Rodway, Esq., all of Trowbridge. The best specimen plant in flower was a fine *Eucharis amazonica* from Mr. H. Triff, gr. to Major F. Clark, Trowbridge.

Fuchsias were superbly shown by the champion grower of the west, Mr. J. Lye, gr. to the Hon. Mrs. Hay, Clyffe Hall, Devizes, who was 1st with six and four varieties, specimens 7 feet or so in height, grandly grown and bloomed. Mr. Lye's six varieties were all of his own raising, very dark varieties, *Charming*, *Abundance* and *Rival*; and of light varieties, *Mrs. Bright*, *Harriet Lye*, and *Pink Perfection*. Mr. Geo. Tucker was 2nd, and Mr. H. Pocock 3rd, the latter with plants far above what is usually seen about London. Mr. Lye's four varieties were *Final* and *Mrs. Rundell*, dark; *Louise Balfour* and *Western Beauty*, light. *The Gardeners' Magazine*

Medal for special excellence in culture was awarded to Mr. Lye for his splendid specimen of *Fuchsia Charming*. By amateurs and cottagers, *Fuchsias* were also finely shown.

Next in value in reference to these splendid developments were the *Petunias*, and here again Mr. J. Lye was 1st, with six plants, grown, it is true, in large pots, which were raised from cuttings struck in April. The plants are trained to slanting-over wire trellises; the growth was perfect, and each plant carried from 100 to 150 grand blossoms. Good soil, close attention, and plenty of water had produced these plants, and, like the *Fuchsias*, they were in the open for a considerable part of the summer. Other exhibitors had good plants also. *Achimenes*, *Gloxinias* (very fine for the time of year), *Begonias*, *Cockscombs*, *Balsams*, and zonal *Pelargoniums* were all very good, not excepting the plants grown by cottagers. Groups of plants arranged for effect also made a good feature.

Foliaged Plants were represented by *Palms*, *Crotons*, *Caladiums*, *Coleus*, and *Ferns*, the latter in collections of fifteen, including mosses. The best group came from Mr. G. Tucker, and included a very fine example of the silvery *Gymnogramma peruviana argyrophylla*, which is well-grown in this locality; Mr. H. Pocock was a good 2nd.

Dahlias, *Gladioli*, *Hollyhocks*, zonal *Pelargoniums*, *Pansies*, and others, were also numerous; as were collections of wild flowers, bouquets of the same, &c.

Fruit.—It was the finest exhibition of fruit, perhaps, ever seen at Trowbridge. There were five collections of ten varieties. Mr. W. Strugnell, gr. to Walter H. Long, Esq., M.P., Rood Ashton, was 1st, with Black Hamburg, Alnwick Seedling, and Muscat of Alexandria Grapes; Bellegarde Peach, Stanwick Elruge and Pine-apple Nectarine; Jefferson's Plum, Brown Turkey Fig, and Morello Cherries; a capital lot, admirably staged; 2nd, Mr. G. Pym, gr. to Mrs. Hardwick, Bradford-on-Avon, with six varieties, there being also five exhibitors. Mr. C. Bull, Crediton, had the best Pine, a good Smooth Cayenne; and Mr. Strugnell came 2nd, with a Queen. Mr. A. H. Newman, Bath, had the best epergne of fruit and flowers; Mr. E. T. Hill, Westbury-on-Trym, was 2nd. Black Hamburg Grapes were well shown by Messrs. Marsh, of Bath, and T. Jones, Combe Down. White Grapes, excluding Muscats, by Mr. Marshall, gr. to J. Dole, Esq., Bristol, and Mr. J. Gibson, gr. to Earl Cowley, Chippenham, both of whom had well-finished Buckland Sweetwater. Messrs. Jones and Gibson were 1st and 2nd with any other black, both having Madresfield Court; and the same exhibitors were 1st and 2nd, with capital White Muscats. Green Gage Plums were numerous and good, and of other Plums, there were good dishes of Jefferson's, Kirke's, Reine Claude de Bavay, and Magnum Bonum. Cherries were represented by Morello. The two best single dishes of Peaches were Vanguard and Chancellor. The best Nectarines Pine-apple and Elruge. The two best dishes of dessert Apples were Worcester Pearmain and Ribston Pippin. Astrachan, Cellini, Quarrenden and Cox's Orange Pippin were also shown. Mr. Strugnell had the best two dishes of culinary Apples in Peasgood's Nonsuch and Warner's King, both very fine. Lord Suffield, Emperor Alexander, New Hawthornden, &c., were also in fine character. The best dessert Pear was Beurré d'Amanlis; Bon Chrétien taking the 2nd prize.

Vegetables were wonderfully fine throughout. Space does not admit of going into details. A collection of bunches of garden Roses, shown by Messrs. Cooling & Sons, among the miscellaneous exhibits, was much admired.

Cut Flowers were numerous and very fine. In the open classes for Roses, Dr. Budd, Bath, was 1st with twelve trebles, and also for twenty-four singles, having some beautiful flowers for the time of year. Messrs. Geo. Cooling & Sons, nurserymen, Bath, being 2nd in both classes. In the amateurs' division, Mr. Thomas Hobbs, Lower Easton, Bristol, was 1st with twelve trebles, and also with twelve blooms, Dr. Budd being 2nd in both cases. Asters, both quilled and flat-petalled, were numerous, and decidedly good, considering the weather. Boxes of twenty-four varieties of cut flowers made a fine feature. *Verbenas* and *Carnations* were fairly good. Bunches of twelve varieties of hardy annuals, really superb, were shown well by several contributors; the best came from Mr. F. Hooper, Widcombe Nursery, Bath.

The best twenty-four *Dahlias* came from Messrs. Keynes, Williams, & Co., Salisbury; Mr. George

Humphries, Chippenham, was 2nd. With twelve varieties, Mr. F. Lindsey, Frome, was 1st; and Mr. S. Cooper, Chippenham, 2nd.

Seedling *Dahlias*, for certificates, were shown by Messrs. Keynes, Williams & Co., and they had a box of new forms of *Cactus Dahlias*; and were 1st with twelve bunches of Pompon *Dahlias*, single and fancy.

BASINGSTOKE HORTICULTURAL.

AUGUST 24.—A successful show was held by the above in Hackwood Park, on the above date, by permission of C. Hoare, Esq. Mr. Bowerman, the gr. at Hackwood Park, took the 1st award for twelve plants in pots; and Mr. Russell, gr. at Audley Wood, took the same place for six plants. The best six foliage plants were shown by Mr. Weaver, gr., Oakley Park, and he also had the finest specimens of exotic *Ferns*. *Fuchsias* and tuberous-rooted *Begonias* were creditably shown, the former by Mr. Russell, the latter by Mr. Brown, gr., Beaurepaire Park. Mr. Best's stable plants were very fine, and those of other exhibitors very good, and not far behind them. Groups were creditable productions, Mr. Bowerman taking the highest prize, and Mr. Weaver the next highest.

Cut flowers in great variety were shown, and were generally good in quality, if *Roses* be excepted.

Fruit was a heavy item, and the winning collection of eight kinds was Mr. Bowerman's; the 2nd best being Mr. Osman's, Ottershaw Park. The Hackwood Park Hamburg Grapes were the best—Mr. Brown took the highest prize for Muscats, and Mr. Osman for any other white variety.

Vegetables were abundantly and well shown, and several special prizes were competed for besides the Society's prizes. Mr. Lye, gr., Sydmonton Court, Newbury, won Messrs. Sutton & Son's 1st prize for six kinds, and also Messrs. Sharpe & Sons'; whilst Mr. Bowerman secured Messrs. J. Carter & Co.'s premier prize for an unlimited collection, also Messrs. Webb & Son's, of Stourbridge.

THE ROYAL OXFORDSHIRE HORTICULTURAL.

AUGUST 24.—This society, established as far back as 1830, held the third of its annual exhibitions on the above date in the beautiful grounds of Headington-hill Hall, the residence of G. H. Morrell, Esq., on the north-east side of the city. Two very large tents, joined together to form one, were required for the exhibits, and in addition, some of the vegetables had to be placed in the open air. This exhibition was considerably extended by adding to it an exhibition of gardening produce from the allotments in the different wards, there being a large number of such gardens, and the produce generally proved remarkably good, and the competition in almost every class was very keen.

Stove and greenhouse plants were fairly well shown, considering the somewhat low prizes offered, and in the class for a single specimen hardy plant in flower, very fine examples of *Sedum Fabaria* were staged. Some good *Fuchsias* were shown by Mr. J. Mattock, nurseryman, Oxford. *Begonias*, double and single, made a good feature, and the single and double zonal *Pelargoniums* shown by Mr. J. Johnson, nurseryman, Garsington, were very fine. Exotic *Ferns* were in excellent form, but as the names of the exhibitors were not placed on them, we are unable to give particulars. *Coleus* were in the form of well-coloured bushes.

Cut flowers were numerous and very good, and were throughout a very attractive feature. Excellent bunches of cut double and single zonal *Pelargoniums* were shown by Mrs. Wooten-Wooten and Mr. John Walker, Thame. With twenty-four *Dahlias*, Mr. Walker was 1st, with capital flowers; Mr. J. Tranter, florist, Henley-on-Thames, was 2nd; and eighteen blooms were also well shown. Single and pompon *Dahlias* made very fine features, and the *Cactus* varieties highly attractive. Some remarkably good *Roses* were shown by Mr. J. Mattock, who was 1st with eighteen varieties, having in fine condition *Suzanne-Marie*, *Rodocanachi*, *Auguste Rigotard*, *Duchess of Bedford*, *Merveille de Lyon*, *Mrs. John Laing*, *Star of Waltham*, *Baroness Rothschild*, *Cornelia Koch*, *Comtesse de Nadailac*, &c.; 2nd, Mr. J. Tranter, *Gladioli*, *Asters*, *Helichrysums* in bunches, herbaceous *Phloxes*, annual *Phloxes*, &c., were all good in quality and numbers. Mr. J. Johnson had the best twelve bunches of hardy perennial and bulbous plants, staging a very fine lot indeed in

imposing bunches; and he was also 1st with six bunches of herbaceous *Phloxes*.

Fruit was much more numerously produced than is usual. The best three bunches of white Grapes were Buckland Sweetwater, from Mr. C. D. Batt, Witney; Mr. Horell, The Gardens, Headington-hill Hall, being 2nd, with Muscat of Alexandria. The best two bunches of Black Hamburg were from W. A. W. Musgrave, Esq., Thame Park; Colonel Meller, Shotover, was 2nd. In the class for black, other than Hamburg, some excellent *Alicante* were shown from Nuneham Park Gardens; Mr. Robens, Hartwell Gardens, Aylesbury, being 2nd with the same. The best dessert Plums were Jefferson's and Kirke's; the best cooking White Magnum Bonum and Pond's. Bon Chrétien and Beurré d'Amanlis were the best dessert Pears; Worcester Pearmain, Kerry Pippin and Ribston Pippin, the best dessert Apples. Emperor Alexander, Stirling Castle, and Peasgood's Nonsuch, the best culinary. Currants were remarkably good, Filberts and Figs also.

In the amateurs' division, plants were fairly well shown, and cut flowers good. The best six bunches of hardy perennials, and also of annuals, set up by Mr. W. F. Cross, were very fine; among the latter was a variety of *Cosmos bipinnata hybrida*, with red flowers, worthy of being noted as well suited for this purpose. *Roses*, *Dahlias*, &c., were decidedly good.

Vegetables were very good indeed, and we have to be content with mentioning the fact. We have reason to believe the show was a decided success all round.

RUTHIN HORTICULTURAL SHOW.

AUGUST 24.—A summer show of flowers, plants, and fruit was formerly a most successful institution in connection with the picturesque town of Ruthin, in the Vale of Clwyd, North Wales. From various causes, however, it languished, and then died. Some years afterwards a "Christmas show" on something of the same lines was instituted, resulting last year in a fair balance being obtained; consequently, the committee of the winter exhibition resolved upon a bold stroke—the resuscitation of the defunct summer show. To add to its interest, the sheep-dog trials were amalgamated with it, and a series of athletic sports were attached as a sort of gay ribbon to attract the masses! A strong committee carried out the arrangements, and the residents supported them well by their subscriptions. Col. W. Cornwallis West kindly allowed the exhibition and sports to take place on the lawns in front of his beautiful residence, Ruthin Castle, while the dog trials came off in the park. The show was held on the above date, resulting in a very large gathering of the public, excursions being run from Rhyl, Denbigh, Mold, Corwen, and other places. Col. West gave a brief address as a kind of opening ceremony, in which he commended the cultivation of flowers as a means of recreation for the Welsh peasantry, and suggested that it might be possible to organise some system of sending the vegetable produce of small country gardens to such places as holiday resorts, where the consumption of such produce during the season is enormous.

Plants.—For a circular group of plants, arranged for effect, Mr. H. Forder, gr. to Colonel Cornwallis West, was placed 1st with a light and graceful arrangement, consisting of well-coloured *Crotons*, light *Palms*, *Lilium longiflorum* Harrisii, *L. lancifolium*, *L. speciosum album*, and *L. s. roseum*; and grand spikes of *Tuberose*s, mixed with Maidenhair *Fern*. Mr. W. J. Bligh, gr. to P. F. Lyster, Plas Isafin, was 2nd, with a very pretty arrangement, but rather too flat and stiff.

For six stove and greenhouse plants, Mr. W. Price, gr. to Colonel Mesham, was 1st with a grand lot; Mr. Bligh and Mr. Forder following in their order.

Six Plants for Dinner-table Decorations.—The competition for these was very keen, the 1st prize going to Mr. H. Forder. His best plants were *Pandanus Veitchii*, *Croton Aigburth Gem*, and *Peonoma gracilis*; and Mr. H. Bennett, gr. to Rev. J. Gallagher, Clwyd Hall, was 2nd, with a neat lot.

Cut Flowers.—Twelve *Roses*, 1st, Mr. G. Goodwin. Six *Roses*, 1st, Mr. A. Goodwin. Twelve double *Dahlias*.—These made a grand display. Mr. H. Forder was 1st, with large well-finished blooms.

Prizes were offered for twelve bunches of annuals, twelve bunches of herbaceous flowers, twelve *Asters*, twelve stocks, &c. These were secured by Mr. H. Forder, Mr. Bodsworth (gr. to Lady Fitzpatrick, Plas Draw, Ruthin), and Mr. Curtis (gr. to J. W. Lumly, Esq., Haulfre, Ruthin), in their order.

Coleus, Begonias, Fuchsias, Pelargoniums, single Dahlias, Gladioli, cut blooms of stove and greenhouse plants, and hand bouquets were shown in considerable numbers.

Fruit was abundantly shown, Messrs. Forder, H. Bennett (gr., Mostyn Tallaere), Kelly, J. Price, J. Hubbard, and J. Jones being the chief prize-takers.

In the vegetable competition, Mr. Forder took 1st prize for twelve kinds. Mr. Forder won for a collection of Potatoes. Mr. G. Brockenhurst, Firgrove, was best in the Tomato competition.

Prizes were offered for single dishes of vegetables of nearly every kind, and the competition was keen, Messrs. Forder, Bligh, Price, Jones, and Bellis being the principal prize-winners.

The judges were Mr. D. Hughes, Chester; and Mr. Cowburn, Manchester, and their decisions gave every satisfaction.

THE BATH FLORAL FETE.

AUGUST 30, 31.—This, the second of three exhibitions held during the present year, was in all respects very fine—one of the best of its kind ever seen in Bath. Stove and greenhouse plants were a great feature. The best eighteen, twelve foliage and six flowering, came from Mr. James Cypher, nurseryman, Cheltenham—a superb group, included grand specimens of *Kentia Forsteriana* and *Belmoreana*, *Phoenix rupicola*, *Cycas undulata*, and *C. circinalis*, *Crotons Sunset*, *angustifolius*, *Bougainvillea glabra*, *Ixoras Williamsi* and *Pilgrimi*, &c.; 2nd, Mr. J. F. Mould, nurseryman, Pewsey.

In the class for eight foliage plants, Mr. Cypher was again 1st; his *Crotons* were very fine, and there was a very good example of *Caryota soubolifera*.

In the class for six stove and greenhouse plants in flower, Mr. Cypher and Mr. Geo. Tucker, gr. to Major W. P. Clark, Trowbridge, were placed 1st, each having some excellent plants. Specimen plants were also very good, and the same applies to Ferns, Mr. G. Tucker being 1st with a very fine collection.

As at Trowbridge so at Bath, Fuchsias were a very fine feature, Mr. James Lye, The Gardens, Clyffe Hall, Market Lavington, being 1st with nine, having admirably grown and flowered specimens. Mr. W. Marchant, gr. to J. Murch, Esq., the Mayor of Bath, was 1st with six specimens, mostly of Mr. Lye's raising. Single specimens, light and dark, were very good also. Tuberous-rooted Begonias were represented by very fine specimens, and Mr. Lye also exhibited his capital *Petunias*. Groups arranged for effect made an excellent feature, Mr. Cypher being 1st with one that was perfect at all points. Other flowering plants were numerous and very good, including fine examples of *Lilium speciosum*.

Cut flowers were numerous and very fine. Mr. Geo. Humphries, nurseryman, Chippenham, was 1st, with twenty-four varieties; and Mr. F. Lindsay, Frome, 1st with twelve blooms. Mr. Humphries also took the 1st prize with twelve fancy varieties, and also with twelve bunches of single. Roses were remarkably good; the best twenty-four blooms were staged by Dr. Budd, Bath. With twelve blooms, Dr. Budd was 1st. Twelve Teas were finely shown by A. H. Gray, Esq., his stand containing a remarkable bloom of the crimson Tea *Souvenir de Thérèse Levet*. Zonal Pelargoniums in twenty-four bunches, and Quilled and French Asters were remarkably good. Stands of twenty-four bunches of hardy annuals made a show in themselves; A. H. Newman, Esq., Bath, was 1st with an admirable collection. Hardy perennials in bunches of twenty-four varieties, were finely shown by Mr. Pritchard, Christchurch, who had a very fine lot. Stands of stove and greenhouse cut flowers were a very fine feature also.

Table decorations and bouquets were excellent; so were collections of wild flowers, and also epergnes and bouquets of the same.

Fruit was a great feature. Mr. W. Nash, The Gardens, Badminton, was 1st with a collection of twelve dishes, having excellent Alicante and Muscat of Alexandria Grapes, *Violette Hative* and Dymond Peaches, Humboldt and Victoria Nectarines, Figs, Plums, &c. The best eight bunches of Grapes came from Mr. Taylor, gr. to Mr. Alderman Chaffin, Bath, who had two finely finished bunches each of Gros Maroc, Alicante, Muscat of Alexandria, and Black Hamburg. Mr. C. Warden was 2nd, having good Muscat Hamburg, instead of Black Hamburg. White Muscats were finely shown by Mr. W. Iggulden; Buckland Sweetwater, as any other white, by Mr. J. Marshall, Bristol; Black Hamburg, by Mr. J. T. Jones, Bath; and

any other black was represented by finely-finished Madresfield Court.

Melons were numerous, Peaches and Nectarines good; Plums, Figs, Morello Cherries very good, and Filbert and Cob-nuts were very fine.

The best three dishes of Pears were *Conseiller de la Cour*, Gansell's Bergamotte, and Beurré Clairgeau, all very fine.

The best three dishes of dessert Apples: Worcester Pearmain, Ribston Pippin, and Cox's Orange Pippin. The best three dishes of culinary Apples: Emperor Alexander, Warner's King, and Peasgood's Nonsuch. The best twelve cooking Apples were the finest examples of Peasgood's Nonsuch we have ever seen, taken from a tree against a wall, rich in colour, and grown by Mr. J. B. Payne, Palace Gardens, Wells, the twelve weighing 15 lb.

Vegetables were very fine also, and extremely numerous.

A collection of plants and cut flowers not for competition, was shown by Messrs. Veitch & Son, Exeter; Begonias, double and single, by Mr. B. R. Davis, Yeovil; Apples and other fruits, by Messrs. Geo. Cooling & Sons; and from the same a very interesting collection of garden Roses.

SHOW OF APPLES AND PEARS AT THE MOSELEY BOTANICAL GARDENS, BIRMINGHAM.

AUGUST 29, 30, 31.—With a view to give encouragement to the more extensive cultivation of these fruits in the Midland districts, liberal prizes were awarded for collections, without limit to the numbers, and six exhibits were staged, three of 120 dishes each, the others of a lesser number. The 1st prize was awarded to Messrs. Bunyard & Co., The Old Nurseries, Maidstone, for a very fine collection of large and mostly light-coloured fruits; 2nd, Mr. J. Watkins, Pomona Farm, Hereford, with not quite such large fruits, but superbly coloured, and of fine quality; 3rd, Messrs. Lane & Son, the Nurseries, Great Berkhamsted, with a fine lot of fruit, not so rich in colour as the others; and by the side of this collection was a good display of Plums in variety, also Filberts and Crabs. In the class for six dishes of Apples, eight fruits of each, Messrs. Bunyard & Co. were 1st, with very fine Peasgood's Nonsuch, Stone's, Warner's King, Potts' Seedling, Cox's Pomona, and Lord Suffield. They were also 1st for six dishes of Pears, eight fruits of each, for very fine Pittaston Duchesse, Dr. Jules Guyot, Gross Calabasse, Beurré Clairgeau, Williams' Bon Chrétien, and Marie Louise d'Uccle. It was freely acknowledged to be the finest display of Apples and Pears ever seen in the Midlands, and the quality and colour was a surprise to so many.

Dahlias were also a great feature. Collections of the various kinds in spaces 15 feet long by 4 feet wide being invited, and there was a long attractive bank of these; 1st, Messrs. Perkins & Sons, Coventry; and 2nd, Messrs. Harkness & Sons, Bedale, with a very effective display. An excellent display of Dahlias in competition in the classes for thirty-six and twenty-four was made. For thirty-six blooms: 1st, Messrs. Heath & Son, Cheltenham; 2nd, Mr. John Walker, Thame. For twenty-four Dahlias: 1st, Mr. Walker; 2nd, Messrs. Heath & Son.

Herbaceous and hardy flowers, in twenty-four bunches, dissimilar, were a fine display. 1st, Mr. Walter Childs, Acock's Green, with grand masses, well displayed; 2nd, Messrs. Harkness & Sons, with other exhibits.

Roses, and other classes of cut flowers, were well filled; and Mr. J. White, nurseryman, Worcester, was awarded a Silver Medal for a very attractive display of various cut flowers and fruit, Gladioli, Cactus Dahlias, and Victoria Asters, being especially fine.

Vegetables were well shown, Messrs. Sutton & Sons' prizes being strongly contested, Mr. T. Wilkins, gr. to Lady Theodora Guest, Blandford, being well 1st with one of his well-known high-class exhibits; and for twelve varieties of the Pedigree Onions, nine bulbs of each, and wonderfully fine, a handsome Silver Medal was awarded.

Mr. F. Denning, nurseryman, had a very charming group of plants at the entrance, to which a well-deserved extra prize was awarded.

Mr. Robert Sydenham, Birmingham, gave liberal prizes for vegetables, and there was good competition; as also for prizes for collections by Messrs. Thomson & Co., and Messrs. Hewitt & Co. of Birmingham.

NATIONAL DAHLIA.

SEPTEMBER 1, 2.—The promoters of the National Dahlia Society have much reason to congratulate themselves upon the extent and quality of the blooms which were brought to the Crystal Palace on the above dates. The plants are rapidly recovering from the effects of the drought in early summer; and should the weather continue favourable through the present month, and the nights warm, the bloom promises to be at its very best about the third week in September. Week by week the quality of the flowers improve, and the later exhibitions will show. On this occasion the flowers were arranged in the eastern portion of the nave, and groups of plants and collections of cut flowers flanked them on either side. In no building, perhaps, do bright-coloured flowers like Dahlias display themselves to better advantage, as there is abundance of light above and at the sides. There were blanks in some of the tables, as is usual and inevitable, owing to exhibitors who had entered finding themselves unable to exhibit at the last moment. The arrangements made by Mr. W. G. Head were excellent; staging and judging went very smoothly.

Show Dahlias (Nurserymen's Classes).—There were three exhibitors of sixty blooms, distinct, Messrs. C. Turner, Royal Nursery, Slough, and Keynes, Williams & Co., Salisbury, taking the 1st and 2nd prizes with stands which came very near to each other in point of quality. Of self-coloured varieties, Mr. Turner had fine examples of Gordon, bright crimson; James Vick, Imperial, John Walker, the new white self which is being shown in excellent character this season; Clara, John Hickling, a very fine yellow self; Grand Sultan, Wm. Rawlings, J. Standish, W. Powell, yellow; H. Austin, R. J. Rawlings, Willie Garratt, Purple Prince, Sunbeam, Mrs. Gladstone, Ruby Gem, W. Keith, Herbert Turner, Seraph, Agnes, Mrs. G. Harris, Shirley Hibberd, Primrose Dame, Nellie Crammond, Flag of Truce, Crimson King, and a few others. Of edged flowers, John Bennett, Mrs. Langtry, Henry Walton, Mrs. W. Slack, Mrs. Shirley Hibberd, Maud Fellowes, and Miss Cannell. Of fancy varieties, Dazzle, Matthew Campbell, Comedian, a beautiful fancy when in true character; Rev. J. B. M. Camm, Duchess of Albany, and James O'Brien. Messrs. Keynes & Co. had a few fine blooms distinct from the foregoing, such as self: Arthur Ocock, Thomas Goodwin, Thomas Hobbs, Duke of Fife, Gloire de Lyon, Richard Dean, J. Ashby, and Colonist. Edged flowers: Ethel Britton, Mrs. Charles Noyes (light fawn), Mrs. Stancomb, J. T. West, &c. Fancies: Frank Pearce, Dandy, Hercules, Peacock, Pelican, and Dorothy.

There were four stands of forty-eight varieties, distinct, and Messrs. Keynes & Co., were placed 1st, with—Self: Gloire de Lyon, A. Ocock, T. Goodwin, Jas. Cocker, W. Rawlings, Mrs. G. Harris, Crimson Globe, Colonist, H. Bond, H. Keith, George Gordon, Mrs. Gladstone, Mrs. Foreman, R. Dean, Thos. Hobbs, W. Powell, W. Jackson, W. Garratt, J. Huntley, J. Ashby, and J. Hickling. Edged flowers: J. T. West, T. J. Saltmarsh, Mrs. Langtry, Ethel Britton, Majestic, Mrs. W. Slack, and H. Walton. Fancies: Peacock, James O'Brien, Buffalo Bill, Rev. J. B. M. Camm, Frank Pearce, Duchess of Albany, Gaiety, and Dandy.

With thirty-six distinct varieties, Mr. John Walker, nurseryman, Thame, was 1st, with excellent blooms of the following:—Self: W. Rawlings, W. Powell, John Henshaw, Mrs. Gladstone, Duke of Fife (very rich in colour), Purple Prince, John Standish, Colonist, Crimson King (singularly bright), Shirley Hibberd, Prince Bismarck, Seraph, W. Garratt, Dr. Moffatt, A. Ocock, Jas. Cocker, John Hickling, W. Keith, Mrs. H. Glasscock, Arthur Rawlings, &c. Of edged flowers: Maud Fellowes, Mrs. D. Saunders, J. T. West, Majestic, T. J. Saltmarsh, Mrs. George Rawlings, &c.; and of fancies, Dorothy, Hercules, and Hartie King. There were five stands in the foregoing class, and also in that for twenty-four varieties, where Mr. J. Walker was again 1st, having in fine Self-character, Geo. Rawlings, W. Rawlings, Seraph, H. Keith, Prince Bismarck, Arthur Rawlings, Shirley Hibberd, James Cocker, Duke of Fife, Flora Wyatt, J. Standish, J. Ashby, Mrs. J. Greaves, deep yellow; Burgundy, and W. Powell. Of edged flowers: J. F. West, Majestic, T. J. Saltmarsh, Miss Cannell, Constancy, Mrs. Geo. Rawlings, and Maud Fellowes. Fancy: M. Campbell. With twelve blooms, Mr. A. Rawlings, Romford, was 1st.

Cactus and Decorative Dahlias.—These made a very fine feature, and especially the bunches shown by nurserymen. It is gratifying to see the introduction of varieties of the type of Delicata, Robert Cannell, &c., flowers that are so distinct in character

and beautiful in form and colour that they are certain to drive out of cultivation many of the so-called decorative varieties, which are pretty much what our forefathers discarded half a century ago. There were three exhibitors of eighteen bunches, six blooms of each, and Messrs. J. Cheal & Sons, nurserymen, Crawley, were placed 1st, with Beauty of Arundel, Sir Roger (orange-salmon), St. Catherine, Christine Cheal, Countess of Gosford, Professor Baldwin, Delicata (very beautiful), Bertha Mawley, Countess of Radnor, and Robert Cannell, all these being of the true Cactus character. Of decorative varieties, Duke of Clarence, Honoria, Lancelot, Duchess of York, Ernest Cheal (bright in colour), Black Prince, Josephine, and Mrs. Tait, 2nd, Messrs. Keynes, Williams, & Co., who had of true Cactus varieties, Sir Roger, Lady Penzance, soft yellow, extra fine; Lady H. Grosvenor, salmon-brown base, with cream and yellow centre; Countess of Radnor, and Countess of Gosford; of decorative varieties, Josephine, Rayon d'Or, Apollo, Kaiserin, Maid of Kent, Dawn, Black Prince, Avalanche, Countess of Pembroke, and Lancelot.

With twelve blooms, Mr. George Humphries, florist, Chippenham, was 1st, with Countess of Radnor, St. Catherine, Professor Baldwin, Baron Schroder, Kynereith, Bertha Mawley, Juarez, May Pictor—clean yellow, R. Cannell, Amphion, Sidney Hollings, and Duke of Clarence; 2nd, Messrs. Paul & Son, with Black Prince, R. Maher, Beauty of Arundel, Marchioness of Bute, Lancelot, and Countess of Pembroke, distinct from the first-prize collection. The best twelve bunches of true Cactus varieties came from Messrs. Keynes, Williams & Co., who had Gloriosa, large bright scarlet; Kaiserin, Duke of Clarence, Countess of Radnor, Apollo, Delicata, R. Cannell, Miss Violet Morgan, Bertha Mawley, Countess of Gosford, Chancellor, and Lady Penzance, a very interesting stand; 2nd, Messrs. Cheal & Sons, having differing from the foregoing, Duchess of York, Juarez, St. Catherine, Josephine, Professor Baldwin, Bertha Mawley, Elith Cheal, and Beauty of Eynsford.

Pompon Dahlias (Nurserymen).—Very fine and attractive, also were the collections of twenty-four bunches of pompon Dahlias. Two stands, very close together in point of quality, were staged by Messrs. Cheal & Sons, and C. Turner, the 1st prizes being awarded to the former, who had very fine and effective bunches of ten blooms each of the following:—Fairy Tale, Arthur West, Ringdove, Geo. Brinckman, Martial, Tommy Keith, Marion, Isabel, Cecil, Phoebe, Goldfinch, Eva, Darkness, E. F. Jungker, Grace, Bouquet d'Or, Admiration, Lady Blanche, Sunabine, Iolanthe, Eurydice, Whisper, Favourite, and Rosalie. 2nd, Mr. C. Turner, with the following, differing from the foregoing:—Mabel, Lady Blanche, Eric, Little Lady, and Captain Boynton, a very fine dark shining maroon variety.

With twelve varieties, ten blooms of each, Mr. G. Humphries was 1st, with capital bunches of Arthur West, Geo. Brinckman, Darkness, Little Duchess, E. F. Jungker, Red Indian, Mabel, Favourite, Whisper, &c. 2nd, Messrs. Paul & Son, with Darkness, Rosalie, Red Indian, Achilles, Admiration, Little Darkie, and others.

Single Dahlias (Nurserymen).—Stands of twenty-four bunches of these were shown in very fine character, Messrs. Cheal & Sons, and M. V. Seale running a very close race for the supremacy, the 1st prize going to the former, who had Duchess of Fife, Annie Hughes, Jas. Scobie, Miss Linnaker, Kitty Lady Whitehead, Miss Roberts, Cleopatra, Victoria, Marion Hood, Duchess of Albany, Formosa, Yellow Satin, The Bride, Lowfield Beauty, Evelyn, Guliema, Amos Perry, W. C. Harvey, Eclipse, Northern Hero, Duchess of Anhalt, Miss Glascock, and Ruth. Mr. Seale had, differing from the foregoing, Miss Henshaw, Huntsman, Alice Seale, Northern Star, Madame J. Conninck, Florrie Fisher, Alfonso, Miss Gordon, Miss Jefferies, Cleopatra, and Miss Ramsbottom. With twelve varieties, Mr. Geo. Humphries took the 1st prize with capital bunches of Eclipse, Mrs. W. C. Harvey, A. Perry, Jas. Scobie, Florrie Fisher, Miss Roberts, Miss Gordon, Cleopatra, Duchess of Albany, Miss Henshaw, Duchess of Fife, &c.

Show Dahlias (amateurs).—The best twenty-four bunches out of six exhibits came from Mr. J. T. West, gr. to W. Keith, Esq., Cornwall, Brentwood, who had good ones of Willie Garratt, Mrs. Gladstone, W. Keith, A. Rawlings, H. Keith, Victor, W. Powell, E. Sherman, J. Walker, Geo. Rawlings, J. Scandish, Clara, W. Rawlings, Shirley Hibberd,

J. C. Vaughan, and Sunbeam, self; edged, Majestic, Maud Fellowes, Ethel Britton, and J. T. West; fancy, Matt. Campbell, Frank Pearce, John Britton, and Henry Glascock.

With twelve blooms, Mr. J. Vagg, gr. to J. Theobald, Esq., M.P., Havering, Romford, was 1st, with George Rawlings, J. Rawlings, W. Garratt, Maud Fellowes, Duke of Fife, R. T. Rawlings, W. Rawlings, A. Ocock, T. J. Saltmarsh, Mrs. Gladstone, Mrs. W. Slack, and Prince of Denmark.

With six varieties, Mr. Geo. Boothroyd, Chichester, was 1st, with James Cocker, Ethel Britton, Mrs. Gladstone, Duke of Fife, John Walker, and W. Rawlings.

Fancy Dahlias (Amateurs).—Two classes of these are still retained for the amateur growers. The best twelve came from Mr. J. T. West, who had capital blooms of Henry Glascock, John Britton, Salamander, T. W. Girdlestone, Frank Pearce, Matthew Campbell, Professor Fawcett, John Cooper, Mrs. J. Downie, Buffalo Bill, Egyptian Prince, and Mrs. Saunders.

With six blooms, Mr. T. Anstiss was 1st.

Cactus and Decorative Dahlias (Amateurs).—These were well shown by amateurs, the best twelve bunches of six blooms came from Mr. J. T. West, who had in fine character Marchioness of Bath, Charles Rolfe, Bertha Mawley, Mrs. Keith, J. Chamberlain, Glory of Brentwood, Blanche Keith, Duke of Clarence, and Seedlings. Mr. E. Mawley was 1st with Duke of Clarence, Bertha Mawley, Juarez, Professor Baldwin, Delicata, and St. Catherine.

Special prizes were offered by Messrs. H. Cannell & Son for six varieties, six blooms of each, distributed by themselves. Mr. J. T. West was again 1st with Edward Mawley, Marchioness of Bate, H. Cannell, Glory of Brentwood, Emily Girdlestone, and Mrs. Keith.

Pompon Dahlias (Amateurs).—With six varieties, ten blooms of each, Mr. J. T. West was again 1st with Arthur West, Mary Kirk, Winnifred, Eva, Tommy Keith, and a Seedling; 2nd, Mr. W. Mier, Igham, with Whisper, Grace, Dora, Prince of Lilliputians, Admiration, and Eurydice. With six bunches, three blooms of each, Mr. S. Cooper was 1st.

Single Dahlias (Amateurs).—With six varieties, ten blooms of each, Mr. T. W. Girdlestone was 1st, with varieties of his own raising, he being the only exhibitor. With the same number of bunches, six blooms of each, Mr. E. Mawley took the 1st prize, he being the only competitor.

Messrs. J. Cheal & Sons offered special prizes for twelve blooms of single Dahlia, six blooms of each, Mr. T. W. Girdlestone, who was the only exhibitor, taking the 1st prize, with The Mikado, Little Frank, Dearest (white, with side edgings of yellow), Prince of Orange, Maize, Marion Hood, Demon, Yellow Dwarf, Sanningdale Scarlet, Cinderella, Andry, and Florence.

In the class for six bunches of fancy single Dahlias, varieties whose blooms are tipped, striped, or edged, Mr. T. W. Girdlestone was 1st, with Splash, Tommy, M. C. C., Phyllis, Howie, and Irene, all fine seedlings of his own; 2nd, Messrs. J. Cheal & Sons, with Marv Sharp, Stars and Stripes, Jas. Scobie, Guliema, Victoria, and Miss Glascock.

Then followed the following open classes, viz., six blooms of any dark Dahlia: 1st, Mr. J. Walker, with Prince of Denmark; 2nd, Messrs. Keynes & Co., with Niobe. Six blooms of any light, not yellow: 1st, Mr. J. T. West, with Mrs. Gladstone; Mr. G. Humphries being 2nd with the same.

The best six blooms of any yellow, were John Hickling, from Mr. J. Walker; and Mr. G. Humphries was 2nd, with R. T. Rawlings. Mr. Mortimer was 1st with a tipped Dahlia, having six good blooms of Mrs. N. Halle; Mr. M. V. Seale was 2nd, with Mrs. Saunders. The best six blooms of a striped Dahlia were Frank Pearce, from Mr. G. Humphries; Mr. Walker being 2nd with Matthew Campbell.

The best six blooms of an edged Dahlia was Miss Cannell, from Mr. C. Turner; Mr. J. T. West was 2nd with J. T. West. Mr. John Walker offered special prizes for six blooms of his new white John Walker: Mr. Mortimer was 1st.

In the way of miscellaneous collections, Mr. T. S. Ware, Hale Farm, Tottenham, had a large and thoroughly representative stand of Dahlias of all types, effectively arranged; and Messrs. H. Cannell & Sons, nurserymen, Swanley, an imposing stand of Cactus and decorative varieties, set up in fine bunches—also blooms of Begonias, Messrs. J.

Laing & Sons, Stanstead Park Nursery, Forest Hill, had a group of Begonias arranged with Palms, Ferns, &c., and also a representative collection of hardy flowers. Messrs. B. Peed & Son, nurserymen, Lower Norwood, had a group of plants, and also of cut flowers; and Messrs. W. Paul & Sons, nurserymen, Waltham Cross, a large collection of cut Roses, including their new Tea-shaped China Rose, Duke of York.

Novelties.—New show varieties of Dahlias were scarce. Messrs. Keynes & Co. had Niobe, a deep crimson self of good promise. Mr. J. Tranter had Nellie Tranter, a very pretty light variety, edged with lilac-purple; and Mr. G. St. Pierre Harris had Beauty of the Grove, Snowflake, and Charmer; and another exhibitor had A. H. Collinson, and also Mrs. Collinson, all of which will, no doubt, be seen in a more developed character later on. Cactus and Decorative Dahlias were largely produced in new forms. Messrs. Keynes, Williams, & Co. received First-Class Certificates for Lady Penzance, soft clear yellow, very fine; Lady H. Grosvenor, delicate sulphur base, with a bright yellow centre; and Chancellor, bright crimson purple, all true Cactus varieties. First-Class Certificates were given to Messrs. Perkins & Sons, nurserymen, Coventry, for Matchless, a very fine maroon, paling to crimson on the petal tips, and of the true Cactus type, very distinct; and Purple Prince, the base of the petals maroon, tipped with bright-purplish crimson, a true Cactus; to Messrs. H. Cannell & Sons, for Lilacina, a very distinct decorative variety, pale yellow ground deeply suffused with bright pinkish-mauve, very distinct; to Mr. T. S. Ware, for Mrs. A. Pearl, the nearest approach yet seen to a white Cactus type, creamy white, with a bright yellow centre; to Mr. H. R. Pictor, for Beauty of Wilts, bright orange-salmon, very distinct, and pleasing; and to another exhibitor for Mary Hillier, very like Beauty of Wilts, that it would be running a risk to have both in the same stand.

New Pompon Dahlias were shown by several, and First-class Certificates were awarded to Mr. Charles Turner for Captain Boynton, deep shining maroon, very fine shape; and to Rovena, yellow ground, tipped with bright pale red. Pompons: Ceres, pale primrose, Sovereign, bright yellow; Midnight, shaded crimson; and Madge, orange-red, tipped with white, are all promising varieties.

New single Dahlias were largely represented. First-class Certificates of Merit were awarded to Messrs. Perkins & Son for Scarlet Perfection, very bright scarlet, excellent shape, and very smooth; they also had Queen of Beauties, orange-scarlet, with a distinct tip of orange on each petal—very distinct; to Mr. T. W. Girdlestone, for Demor, rich bright blackish-maroon, of the finest shape; Phyllis, pale ground, mottled and striped with lilac round the centre, and flaked with crimson; Tommy, yellow, flaked with bright crimson, very handsome; and M.C.C., yellow striped and flaked with bright orange-red; to Messrs. J. Cheal & Sons for May Starpe, buff ground, reddish-orange round the eye, and flakes of orange-red, deepening to crimson; and Mrs. Harris, bluish, with side margins of bright rosy-purple, small, very distinct.

Obituary.

CHARLES VERDIER.—In Mr. CHARLES F. VERDIER, whose death on the 18th of August is announced, the Rose world and French horticulture lose a distinguished and ardent Rose-grower. Associated in early years with his father, Mr. Victor Verdier, in the old garden just opposite the scene of Rosa Bonheur's picture of "The Horse Fair," in Paris, he has died ripe in years and honours. Having known him for forty years, I can but speak with respect of his perfect knowledge of Roses, his care and honesty in the discrimination of novelties, and his worth as a friend and colleague. He had seen the growth and consummation of the race of hybrid perpetuals and of the Teas, and had a fifty-years' Rose experience. His health had somewhat failed in the last three years; but when last I saw him he had planted in his new garden one of the most perfect collections of all the Roses, arranged in their several sections, and was, though not so vigorous as a cultivator, as ardent as ever in his enthusiasm and knowledge of his favourite flower. *George Paul.*

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending September 2.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	1 +	88	0	+ 571	— 57	3	— 153	26 6	13	25
1	2 +	102	0	+ 374	— 21	4	— 125	16 8	31	33
2	1 +	109	0	+ 425	— 62	4	— 107	13 3	23	26
3	1 —	109	0	+ 500	— 37	4	— 104	12 5	31	44
4	1 +	114	0	+ 647	— 47	3	— 102	12 8	32	42
5	0 aver	122	0	+ 547	— 43	3	— 97	12 6	36	46
6	2 +	104	0	+ 511	— 63	8	— 121	23 1	40	37
7	1 +	113	0	+ 680	— 91	6	— 110	17 0	31	37
8	1 +	119	0	+ 687	— 70	7	— 101	19 0	55	49
9	1 +	107	0	+ 570	— 104	7	— 132	21 0	22	32
10	0 aver	111	0	+ 620	— 100	8	— 116	19 9	48	36
*	1 +	138	0	+ 783	— 52	6	— 104	14 2	66	58

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, Ireland, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 2, is furnished from the Meteorological Office:—

"The weather during this period was generally fair and dry, but some rain was experienced over Great Britain during the middle part of the week, the fall being heavy at Cheshire and Dungeness.

"The temperature was 1° below the mean in 'England, E.' and just equal to it in 'England, S.', but was 1° or 2° above it in all other districts. The highest of the maxima, which were registered on August 30 over England, but on irregular dates in Ireland and Scotland, ranged from 77° in the 'Midland Counties and England, S.W.' to 69° in 'Ireland, N.', and 68° in 'Scotland, W. and England, N.W.' The lowest of the minima were recorded during the earlier days of the week, when they ranged from 31° in 'Scotland, E.' (at Braemar), and 34° in 'Scotland, W.', to 44° in 'England, N.E. and N.W.', and to 54° in the 'Channel Islands.'

"The rainfall was less than the mean in all districts, the deficit in nearly every case being considerable.

"The bright sunshine was much less prevalent than during the preceding week in all districts, except the Channel Islands. In the Wheat-producing districts the values were less than the mean, but in most of the 'Grazing' districts they again exceeded it. The percentage of the possible duration ranged from 13 in 'Scotland, N.' and 22 in 'Ireland, N.' to 40 in 'Scotland, W.' 48 in 'Ireland, S.' 55 in 'England, S.W.' and to 66 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, September 7.

MARKETS abundantly supplied. Prices low. James Webber, Wholesale Apple Market.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Peaches, per doz. ... 1 0-6 0
Cobs, per 100 lb. ... 30 0-0	Pine-apples, St. Michael ... 2 0-5 0
Grapes, per lb. ... 0 6-3 0	Lemons, per half-sieve, 1 3-4 0
Lemons, per case ... 18 0-30 0	
Oranges, per case ... 20 0-30 0	

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Orchids:—
Aster, dozen bun. ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Bouvardia, per bun. 0 6-1 0	Odonatoglossum
Carnation, doz. bun. 4 0-9 0	crispum, 12 blms. 2 0-6 0
— dozen blooms 1 0-3 0	Pelargoniums, scar-
Cornflower, 12 bun. 1 0-2 0	let, p. 12 bun. 2 0-4 0
Dahlia, doz. bun. ... 2 6-6 0	— 12 sprays ... 0 6-0 9
Eucharis, per dozen 1 6-4 0	Poppy, doz. bunches ... 1 6
Gardenia, per dozen 2 0-4 0	Primula, dble. p. bun. 0 6-1 0
Heliotrope, 12 sprays 0 3-0 4	Pyrethrum, 12 bun. 2 0-4 0
Lilium lancifolium,	Roses, doz. bunches 3 0-8 0
p. doz. blooms 1 0 4 0	— Tea, per dozen 0 6-2 0
— Harrisii, p. doz. 2 0-5 0	— coloured, dozen 2 0-4 0
Maiden Hair Fern,	— yellow (Maré-
12 bunches ... 4 0-6 0	chals), per doz. 1 6-6 0
Marguerite, 12 bun. 1 6-3 0	— red, per dozen ... 1 0-1 6
Mignonette, 12 bun. 2 0-4 0	Stocks, per bunch ... 0 4-0 6
Myosotis, 12 bunches 2 0-3 0	Sunflower, various,
Peas, Sweet, various,	dozen bunches ... 2 0-6 0
doz. bunches ... 3 0 6 0	Sweet Sultan, 12 bun. 2 0-4 0
Pansy, per doz. bun. 1 0-2 0	Tuberose, 12 blms. 0 4-0 6

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

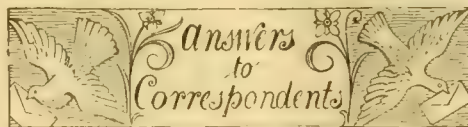
s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Fuchsia, per doz. ... 4 0-6 0
Aspidistra, per doz. 15 0-30 0	Heliotrope, per doz. 4 0-6 0
— specimen, each 7 6-21 0	Hydrangea, per doz. 12 0-24 0
Asters, dozen pots ... 3 0-6 0	Ivy Geranium, doz. 4 0-6 0
Balsams, per doz. 4 0-6 0	Lilium Harrisii ... 18 0-24 0
Campanula, per doz. 6 0-12 0	— lancifolium, dz. 12 0-18 0
Cyperus, per dozen 4 0-10 0	Marguerite, per doz. 6 0-12 0
Dracena, each ... 1 0-5 0	Mignonette, per doz. pots 4 0-6 0
Ferns, various, doz. 4 0-9 0	— specimens, each 10 8-84 0
Ferns, small, per 100 ... 4 0-6 0	Pelargonium, p. doz. 6 0-12 0
Ficus elastica, each 1 6-7 6	— scarlet, p. doz. 3 0-6 0
Foliage plants, doz. 12 0-42 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 4-...	Mushrooms, punnet 2 0-
Beet, red, per dozen 2 0-3 0	Mustard and Cress, punnet ... 0 2-...
Carrots, per bunch ... 0 4-0 6	Parsley, per bunch ... 0 2-0 3
Cauliflowers, each ... 0 3-0 6	Shallots, per lb. ... 0 3-...
Cucumbers, each ... 0 2-0 6	Tomatoes, per lb. ... 0 3-0 4
Endive, per dozen ... 1 3-1 6	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 3-1 0	
Lettuces, per doz. ... 0 9-1 0	

POTATOS.

The demand is not equal to the supplies, which are very heavy, except for best samples, which are readily picked up at good prices, 80s. to 90s.; ordinary stuff, 40s. to 50s.; and even at these prices slow trade. J. B. Thomas.



ADDRESSES OF HOME AND FOREIGN SUNDRIESMEN: G. B. We cannot afford the space, nor have we the time, to copy out the addresses of the home firms. You should obtain the *Horticultural Directories* published at 171, Fleet Street, E.C., and 37, Southampton Street, W.C. We do not think that any list of foreign firms is published here. Enquire at Hachette's.

BLACK HAMBURGH GRAPE: G. W., Crawley. The appearance of the bunch sent indicates over cropping, or an indifferent state of the Vine border. The berries are in every case shanked, but only in a few cases has the sour fermentation of the sweet juices been set up; the colour is not what it should be, being uniformly of a dull red; but, in some kinds of soil that is always so; good flavour usually goes with red Black Hamburgh.

BOOKS: J. L. B. There is no book which specially treats of the culture of the Tomato and Strawberry in unheated houses. The culture of these fruits in this manner, is modified forcing, and you will find what information you need in *The Tomato and its Culture and Uses*, by W. Isgulden, published for ls. at the *Journal of Horticulture* Office, 171, Fleet Street, E.C.; and *Strawberries*, by Mr. W. H. Harrison, M.A., published by Simpkin, Marshall, Kent, & Co., London, for ls.

CANARY CREEPER: A. H. It is the effect of the drought. No disease.

COBBA ROTTING: H. The stem has been injured in some way, and the water having entered, it has decayed.

CORRECTION.—In our last issue (No. 349, p. 279, col. c), the Stotts Patents, for Deansfell read Deans Gate, and for J. J. Scott, read J. J. Stott. In the report of the fruit competition at the Agricultural Hall, Mr. Masterson should have been placed equal 3rd with Mrs. Crawford, of Gatton, gr., Mr. Slogrove.

DANDELIONS ON LAWN: W. T. G. Provide yourself with an earthenware jar of vitriol, and with a pointed bit of stick let fall a few drops of the liquid into the heart of the plants; or make use of the instrument mentioned in our last number, "The Easy Weed Destroyer." The plants will die out completely in a short time; the leaves should then be swept up, and if the bare patches that are left are so numerous as to be unsightly, sow Grass seeds (lawn mixture), or inoculate with little tufts of Grass, by means of a dibble or trowel.

EXHAUSTED ROSE BED: X. Y. Z. Dig up the plants carefully in early October, lay them in carefully in soil, separately, not in bundles; those in the middle of the bundles will be dried up. Having done this, throw out most of the soil if you suspect the drainage is bad, and put into the bottom a drain filled-in with stones or brickbats, and lead this to a kind of dry well, also filled-in with the same materials; spread a layer of rough stable dung or kitchen-garden refuse over the bottom, and return half of the soil. Coat this with a layer 6 inches thick, of pig manure, and then fill-in with fresh fertile soil—that is, top spit soil from the vegetable garden or loam from a pasture. Trench it all over, and intimately blend together the various materials, but do not disturb the rough litter, &c., at the bottom. On a dry day, a week or so after digging, level it and trample it evenly all over, and plant out the Roses after slightly trimming the roots, and carefully clearing off all suckers on the worked plants. Do nothing whatever to the bed whilst it is in a wet condition, or it will be spoilt. When winter has commenced, and frost has hardened the ground, put on a slight mulch, packing it round the plants; but this is scarcely wanted if your garden is at the seaside.

GARDENIAS: F. F. There are traces of some grub, which has tunneled into the wood and occasioned the swelling. We will endeavour to tell you more fully about it later on. Meanwhile, we fear there is no cure.

MYRICA GALE: G. B. We never saw this in fruit before, the Ptelea often, and at one time in the Times Office yard!

NAMES OF FRUITS: Mr. Noakes, Pear: Beurrié Bosc.—J. W. Large Pear: next week.—J. B. 1, Pear, Peach, Pear. The labels of the Plums got mixed: the yellow varieties, Lawson's Golden Gage; the red one, Pond's Seedling.—Wm. Logan, Apple: Lord Suffield.—D. M. L. Pear: Williams' Bon Chrétien.—A. E. 1, Duchess of Oldenburgh; 3, Emperor Alexander; 4, Kerry Pippin; 5, Lane's Prince Albert.—R. W. H. Pears: not known; should think gone out of cultivation; small and worthless.—Helen, Apple: Golden Reinette, most probably.—F. B. S. Plum: Jefferson. Cherry: smashed and decayed.—G. E. L. 1, Pitmaston Duchess; 2, Beurrié d'Amanlia; 3, Hessel.—F. K. & Co. 1, Achau; 2, Beurrié d'Amanlia; 3, Uvedale's St. Germain; 8, Red Quarrenden. The other Apples we do not recognise. They are very probably local varieties peculiar to Scotland.—W. S. L. 1, Beauty of Kent; 2, Gravenstein; 3, not recognised.—G. T. Plum: Automne Compôte.—G. G. 1, not recognised; 2, Grenadier; 3, Autumn Pearmain; 4, Gascoyne's Seedling; 5, Keswick Codlin; 6, not recognised; 7, Waltham Abbey Seedling; 8, Yorkshire Greening; 9, Ecklinville Seedling.—W. R. J. 1, Clapp's Favourite; 2, Williams' Bon Chrétien.—J. H. C. Pear: Beurrié d'Amanlia. Apple: Winter's Coleman.—J. G. W. 1, Plum: Diamond; 2, not recognised; 3, Ickworth Imperatrice; 4, Autumn Pearmain; 5, King of the Pippins; 6, Heary Morning.—R. W. 1, Comte de Lamy; 2, King of the Pippins; 3, Beurrié Superfin; 4, Williams' Bon Chrétien; 5, Beurrié Hardy.—C. Ayres, Capetown. We regret our inability to name Apples grown in South Africa. They are very different in appearance from the same sort grown in this country.—A. C. Next week.

NAMES OF PLANTS: W. S. Dimorphotheca pluvialis.—F. W. K. Artemisia rupestris, Italian form.—A. J. H. Panicum crus-galli, Eragrostis minor.—W. L. Schomburgkia Lyonii, Lindl., flower white and purple; Epidendrum umbellatum, Sw., flower green; Brassavola sp., flower necessary for determination (no numbers are given by sender).—C. R. 1, Funkia ovata; 2, Taxodium distichum; 3, Hibiscus syriacus; 4, Sedum spectabile; 5, Rudbeckia Newmannii; 6, Epilobium angustifolium album.—G. H. S. 1, Smilacina oleracea; 2, Oxalis; 3, Chelidonium majus; 4, Echium

creticum; 5, Pellionia pulchra; 6, Passiflora suberosa; 8, Epilobium angustifolium album.—*Lothian*. 1, Stachys lanata; 2, Sedum telephium; 3, Tanacetum vulgare; 4, Chrysanthemum maximum; 5, Campanula Rapunculoides; 6, Chrysanthemum lacustre; 7, Erigeron speciosus; 8, Hieracium, not recognised; 9, Nigella damascena.—*F. Y.* A garden variety of Ceanothus azureus.—*J. H. W.* 1, Rubus nutkanus; 2, Polygonum cuspidatum; 3, Phytolacca decandra.—*L. G.* 1, Aira præcox; the fungus is the common Morel, poorly developed.—*R. A. K.* 1, Tunga canadensis, Canadian Hemlock Spruce; 2, Cornus mas, variegata.—*R. C.* 1, Chrysocoma Lynosyris; 2, Pulmonaria officinalis; 3, Scabiosa caucasica; 4, Achillea millefolia rubra; 5, Polemonium sps.—*S. R.* next week.—*H.* 1, Spiræa, no flowers; 2, Vaccinium, no flowers; 3, Polygonum cuspidatum; 4, Leycesteria formosa; 5, Gnaphalium margaritaceum.—*C. B.* Cattleya Harrisonæ, Oncidium flexuosum, and probably Thunia alba, but the specimen sent had withered.—*F. K.*, Forest Hill. 1, Alternanthera paronychioides aurea; 2, Alternanthera amœna; 3, Alternanthera versicolor; 4, Alonsoa incisa; 5, Vinca oculata rosea; 6, Hibiscus Cooperi.—*Coraline*. 1, Aspidium coriaceum cespense; 2, Polypodium appendiculatum; 3, Polypodium phymatodes; 4, Nipholobus lingua; 5, Encomis punctata; 6, Zephyranthes atamasco.—*S. Ray*. It is a large immature Geaster, and most probably Geaster Michelianus, but not well enough developed to determine accurately. It is not edible, but has no reputation of being poisonous. *M. C. C.*—*C. M. B.* Judging by the scrap of a flower sent, it may be a garden variety of Nasturtium. You should send more materials.

PEARS: *J. S.*, next week. We give time and money for work that is not editorial, or within the terms of our obligations, in the desire to be useful to our readers, but they should pay the carriage of their parcels!

TOMATO FRUITS SPLITTING: *W. Jinks*. Excessive watering, or affording large quantities of water after a period of drought—the latter more probably.

TOMATO SEED: *Interested*. Let the fruits hang till quite ripe, or even over that stage; skin the fruits, and wash the seeds from the pulp over a fine sieve held in a tub of water, which will not let the seeds through it, and then dry the seeds in an airy place. It retains its vitality from four to six years. There is no book in our language which will give you just the information you want in regard to seeds; but *MM. Ernst Benary and H. Jager* published, in 1887, through the house of Otto Spamer, bookseller, Leipzig and Berlin, a book entitled, *Die Erziehung der Pflanzen aus Samen*. This contains in concise form a mass of information regarding the subject of seed-saving, sowing, and cognate subjects.

VERBENA VENOSA: *P. C. H.* From seed which is readily obtainable, or root division in the spring; the roots being put into boxes of soil, and stored in a cold pit at the commencement of winter. If the pit has an earthen floor for the box to stand upon but little water will be required.

WEATHER FORECAST: *Anxious Reader*. No reliable forecast of the weather in this country can be made a week in advance. Any attempts that are made are by honest but mistaken persons; or, more likely, by quacks and gamblers.

WOOD-LICE AND EARWIGS ON WALL TREES: *X. Y. Z.* Catch them in short lengths of Broad Bean haulm, stuck behind the branches; the more traps, remember, the greater the hauls, which should take place each morning. The depredators work at night mostly. In the winter, syringe the trees heavily when sharp frost is imminent, or have the wall pointed.

COMMUNICATIONS RECEIVED.—*C. de B.*, Lierre.—*W. Wood & Sons*.—*G. M.*—*J. W.*—Dutch Horticultural Society.—*H. H.*—*G. P. S.*—*A. M. W.* should have addressed the publisher, the editor has nothing to do with the publishing department.—*A. D. M.*, with thanks.—*G. S.*, La Mortola.—*W. K.*—*M. D.*—*C. B.*, Troyes.—*A. P.*—*G. P.*—*A. G. M.*—*W. B. H.*—*W. W.*—*Prof. L.*—*Lady G.*—*L. C.*—*G. T.*, Versailles.—*E.*, California (many thanks, but we have several correspondents there; and, moreover, we see your name in many of our horticultural journals).—*W. T. B.*—*J. Stubbs*.—*R. B.*—*A. C.* Old Subscriber.—*Pom.*—*H. D. H.*—*G. P.*—*G. W.*—*B. R. D.*—*J. R.*—*M. T.*—*D. D.*—*A. D. W.*—*J. J. W.*—*J. U.*—*H. D.*—*H. W.*—*W. A. C.* Forbes.—*F. V. D.*—*J. H.*—*W. D.*—*W. H. M.*—*J. P.*

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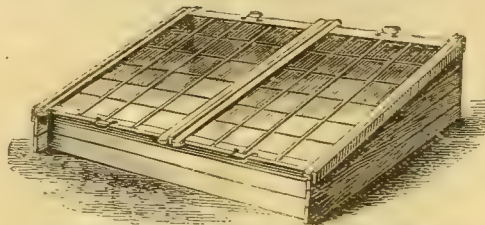
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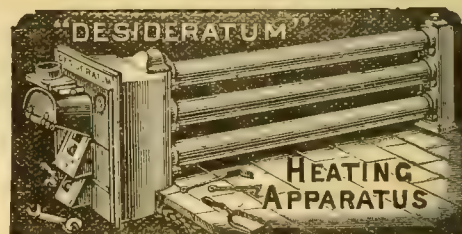
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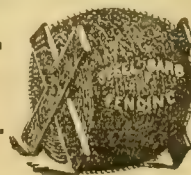


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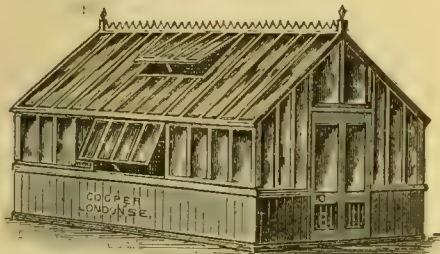
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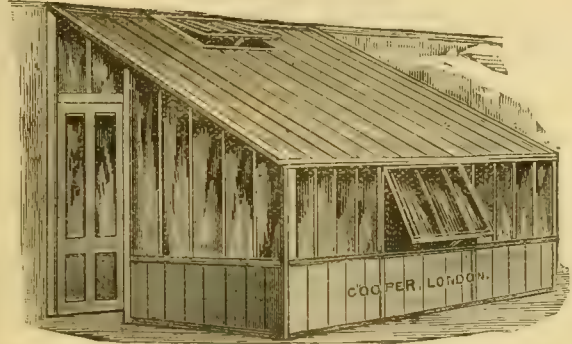
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10ft.	7ft.	7ft.	6in.	4ft. 6in. ... 5 0 0
12ft.	8ft.	8ft.	5ft.	" ... 6 0 0
15ft.	10ft.	8ft.	6in.	5ft. ... 8 10 0
20ft.	10ft.	9ft.	5ft.	6in. ... 12 0 0
25ft.	10ft.	9ft.	5ft.	6in. ... 17 0 0
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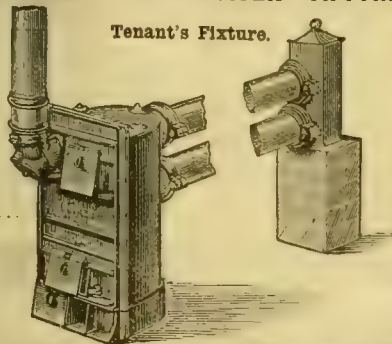
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10ft.	7ft.	7ft.	6in.	4ft. 6in. ... 4 10 0	6 0 0
12ft.	8ft.	8ft.	5ft.	" ... 5 10 0	7 5 0
15ft.	10ft.	8ft.	6in.	5ft. 6in. ... 8 0 0	11 0 0
20ft.	10ft.	8ft.	6in.	5ft. 6in. ... 11 10 0	15 10 0
25ft.	10ft.	9ft.	5ft.	6in. ... 16 10 0	21 0 0
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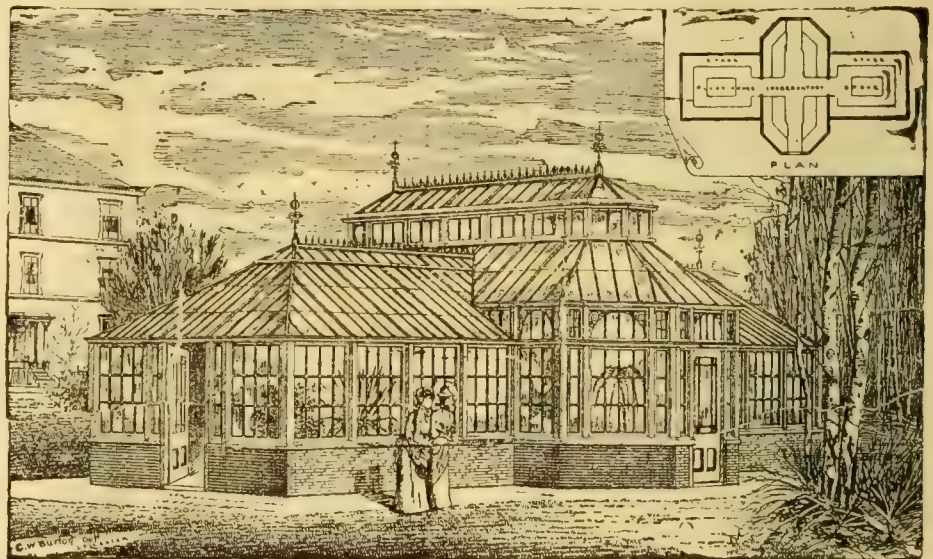
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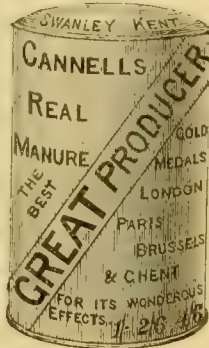
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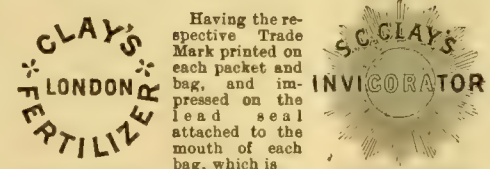
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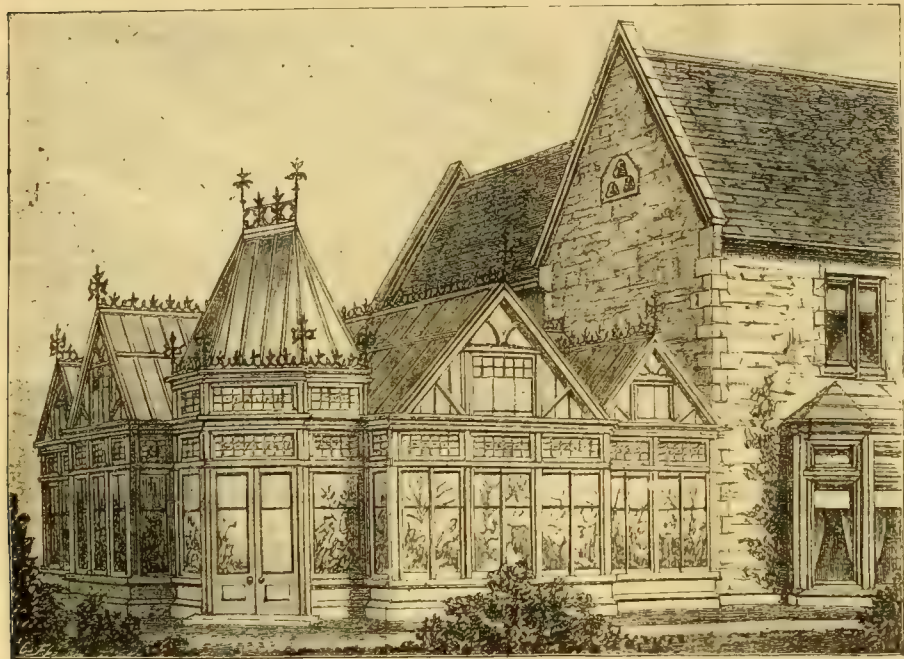
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2751.

No. 351.—VOL. XIV. { THIRD SERIES. }

SATURDAY, SEPTEMBER 16, 1893.

{ Regt. as a Newspaper. { PRICE 3d.
{ WITH SUPPLEMENT. { POST-FREE, 3d.

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WANTED, Bedding GERANIUMS, CUTTINGS or old stools; ONION TUBERS, PEAS, English Wonder, new seed. Particulars to H. CANNELL AND SONS, Swanley.

WANTED, good CUTTINGS OF BEDDING GERANIUMS, COLEUS, and FUCHSIAS, per 100 or 1000; also 2000 CALCEOLARIA CUTTINGS "Yellows." State kinds and price.—W. J. ALLEN, The Gardens, Burlaston Hall, S.oke-on-Trent.

F. V. RASPAIL GERANIUM, strong rooted Cuttings, £2 10s. per 1000, or 6s. per 100. Cash with order—BOULTON, Beechenlea Nursery, Swanley.

CUT LILIES OF THE VALLEY.—Boxes at 5s. and 10s. of beautiful cut Lilies of the Valley will be sent to any address on receipt of P. O. N.B.—The above are offered subject to being unsold on receipt of order. T. JANNOCH, Lily Nursery, Dersingham, Norfolk.

Prize Cob Filberts.

MR. COOPER, Western Elms, Reading (late of Calcot Gardens), is the largest grower of Prize Cob Filberts in the Kingdom; 20,000 fine young Trees now ready for Sale. Pamphlets and Price Lists on Application.

CARNATIONS.—Miss Joliffe Improved, best winter-blooming, flesh pink, fine bushy plants in 5 inch pots; also La Neige, best white. Price on application. Germania, best yellow, in 60's, fit for 48's or planting-out at once, 30s. per 100. Cash with order. CRANE AND CLARKE, The Nurseries, March, Cambs.

PALMS, FERNS, &c.—FERNS in Variety.—ARALIAS and CYPERUS NATALENSIS in 48's, 6s. per dozen; LARGE A. CUNEATUM in 48's, 6s. and 7s. per dozen; PALMS in variety, and FICUS in 48's, 12s. per dozen; PALMS, fine stuff, in large 60's, 5s. per dozen; FERNS and CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order. LANE AND MARTIN, 227, Brixton Road, London, S.W.

I Want to Sell of Real Good Value, 100,000 SNOWDROPS, Single or Double, 1s. 4d., 1s. 8d., and 2s. per 100; Double DAFFODILS, 3s. 6d. and 4s. 6d. per 100; Double White NARCISSUS, 2s. per 100; SCILLA (Blue), ACANTHUS, PLEASANT-EYE NARCISSUS, and STAR OF BETHLEHEM, all 1s. 6d. per 100; 10 per cent. less for 500 or 1000 quantities of each. Cash with Order. G. YORKE, Bulbist, Retford.

Hyacinths, Tulips, Crocus, Lilies, &c. C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C. N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

Kent: the Garden of England.

GROW ONLY the BEST STRAWBERRIES, AND CONSULT GEORGE BUNYARD AND CO.'S NEW LIST. A Chester Gardener says:—"In all my long experience I never had such crops from your Kent plants." Extra fine plants in little pots and runners ready shortly. The Old Nurseries, Maidstone.

To the Trade.

IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order. E. D. SHUTTEWORTH AND CO., LTD.,

Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our specialty—really good stuff grown for the Trade.

"KILLMRIGHT,"

For Destruction of all Insect Pests and Mildew.

THE STOTT DISTRIBUTOR CO. (Lmt'd.), Barton House, Manchester.

J. WEEKS & Co., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentes of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers.

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Turnham Green. — Without Reserve.
GREENHOUSE, PIPING, and STOCK.
ABSOLUTE CLEARANCE SALE, the Land having been Sold for Building.

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, Chiswick Nursery, Turnham Green, two minutes' walk from Turnham Green Station, on MONDAY NEXT, Sept. 18, at 12 o'clock, by order of Mrs. Ewen, 1000 ponticum and Cunningham's white RHODODENDRONS, 1000 AZALEA MOLLIS, a choice assortment of GREENHOUSE PLANTS, ornamental PALMS, 300 EUCHARIS AMAZONICA, 300 CALLAS, 600 BOUVARDIAS, 80 AZALEA INDICA ALBA, including several fine specimens; 1000 LILIAM SPECIOSUM ALBUM in pots, 600 old Clove CARNATIONS. Also the erections of nine Greenhouses, 3900 feet of Hot-water Piping, mostly 4-inch, Bricks, several Pits, Lights, Boilers, Tandem Safety Bicycle, Mowing Machine, and other effects.
May be viewed Friday and Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

East Grinstead.
IMPORTANT to the TRADE and PRIVATE BUYERS.
FOURTH ANNUAL SALE of well-grown STOVE and GREENHOUSE PLANTS, by order of Mr. A. Clark (late Roberts Bros.).

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, The Moat Nursery, East Grinstead, close to the East Grinstead Station, on TUESDAY NEXT, September 19, at half-past 11 o'clock, without Reserve.

10,000 unusually well-grown STOVE and GREENHOUSE Plants, including:—
3500 Tea Roses in pots, the best lot ever offered at this Nursery, comprising
Perle des Jardins, 600
Niphotos, Gloire de Dijon, &c., 400
300 Mâché Niel Roses, 500
rods 5 to 6 feet long 500 Palms

Stephanotis, Azaleas, Imatophyllums, Chrysanthemums, Specimen Eucharis, Mixed Ferns, &c.
May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

In Bankruptcy, Re J. Gough. — Sunbury, Middlesex.
About a mile from the Sunbury Railway Station.
ABSOLUTE CLEARANCE SALE of the GREENHOUSE and OTHER PLANTS in Pots, by order of the Trustee (R. J. Ward, Esq.).

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, The Osborn Nursery, Sunbury, Middlesex, on WEDNESDAY NEXT, September 20, at 11 o'clock punctually, in consequence of there being upwards of 1100 lots, absolutely without Reserve:—

6550 MAIDENHAIR FERNS,
In 48, 32, and 24-pots; 250 AZALEA MOLLIS, PRIMULAS, 150 GREVILLEAS, 200 PTERIS TREMULA, 200 PELARGONIUMS, 800 GERANIUMS, 750 Oak-leaved ditto.
2600 ARUM LILIES, in 48-pots.
1200 LILIAM CANDIDUM, 1000 LILIAM LONGIFLORUM, 1300 SOLANUMS, 1000 CYPERUS ALTERNIFOLIUS, 300 HYDRANGEAS, 1100 MARGUERITES, in 48-pots.
3000 CYCLAMEN PERSICUM in 48-pots.
200 BOUVARDIAS, 500 Tree and Other CARNATIONS.
12,000 CHRYSANTHEMUMS, comprising all the best sorts for cut flower purposes.
100 FIGUS ELASTICUS, 100 ORCHIDS, various.
1100 EUCHARIS AMAZONICA bulbs.
CAMELLIAS, AZALEAS, 600 TEA and other ROSES, 1000 PALMS in variety, including Kentias, Arcas, Scafothias, Chamerops Fortunei, Cocos Weddelliana, and other stock.
May be viewed two days prior to the Sale. Catalogues may be had on the Premises; of Messrs. WARD and WILLING, Chartered Accountants, Bloomsbury Mansions, Hart St., W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The SALE of the OUTDOOR NURSERY STOCK, including a large quantity of Fruit Trees and Roses, will take place on the Premises in OCTOBER NEXT.

Bickley.
Ten minutes' walk from the Bickley Railway Station.
CLEARANCE SALE of STOVE and GREENHOUSE PLANTS, ORCHIDS, GLASS ERECTIONS, PIPING, surplus FURNITURE and EFFECTS, by order of F. A. Philbrick, Esq., Q.C., whose lease of the property has expired.

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, "Oldfield," Oldfield Road, Bickley, Kent, on THURSDAY NEXT, September 21, at 1 o'clock, the remaining STOVE and GREENHOUSE PLANTS, consisting of Palms, Fuchsias, Geraniums, Camellias, Azaleas, Callas, 150 Ferns in variety, Anthuriums, choice Tea Roses in pots, and a few Orchids; the erections of 6 Greenhouses, 2 Sheds, 1300 feet 4-inch Piping, Boilers, Brickwork, and Sundries. Also the remaining HOUSEHOLD FURNITURE, comprising Bed-room appointments, Book-cases, Couches, Oak Chairs, Axminster Carpets, and other effects.
May be viewed day prior and morning of Sale. Catalogues had on the Premises; of Messrs. HANCOCK, MARRABLE and TERRELL, Solicitors, 8A, New Inn, W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.
ODONTOGLOSSUM CRISPUM, Pacho variety; 100 lots of fine single plants, and 100 lots of two plants, by order of Messrs. Pitcher & Mandia.

MESSRS. PROTHEROE and MORRIS will
include the above in their SALE on TUESDAY NEXT, September 19.

On view morning of Sale, and Catalogues had.

Croydon Lodge, Croydon.

About ten minutes' walk from West Croydon and Addiscombe, and twenty minutes from East Croydon Railway Stations.

Highly important THREE DAYS' UNRESERVED SALE of the valuable Collection of ESTABLISHED ORCHIDS, STOVE and GREENHOUSE PLANTS, and GARDEN EFFECTS, by order of the Executors of the late Stephenson Clarke, Esq.

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, Croydon Lodge, Croydon, on TUESDAY, September 26, and TWO FOLLOWING DAYS, at half-past 12 o'clock punctually each day, absolutely without reserve, the whole of the extensive, valuable, and well-grown COLLECTION of ESTABLISHED ORCHIDS, comprising about 1500 plants, and including Cymbidium Mastersii, C. eburneum, C. Dowianum, Phalenopsis Schilleriana, Cypripedium Elliottianum, C. Chamberlainianum, Cattleya Trianae bella, 3 plants of C. T. Clarkiana, fine plants of C. Mossii and C. Trianae, C. gigas, Maxillaria, Sanderiana, Peristeria elata, Sobralia macrantha, S. xantholeuca, Lycaste Skinneri alba, Odontoglossum Alexandræ in variety, O. hebraicum, Dendrobis, Calanthes, Vandas, Aerides, Masdevallias, and others. An unusually fine collection of

STOVE and GREENHOUSE PLANTS, Many of them choice specimens, which have been successfully exhibited at various shows, including Anthurium Scherzerianum, A. Andreanum, A. magnificum, Cyas revoluta, Alocasias, 9 Eucharis amazonica, 9 Pancratium fragrans, a grand plant of Lantana borbonica (13 feet through), Scafothia elegans, Kentias, Clorodendrons, Lapageria alba, Rondeletia speciosa major, Allamandas, a good batch of well-coloured Dracaenas and Crotons, well-grown plants of Caladiums, Dipladenias, Pandanus, and Gardenias.

Amongst them being Adiantum cuneatum, A. Mooreanum, A. trapeziforme, Dicksonia antarctica, Microlepia hirta cristata, Nephrolepis Davallioidea furcata, Selaginellas in pans, and numerous others. Fuchsias, and Agapanthus umbellatus.

EIGHT SPLENDID SPECIMEN AZALEAS, And 70 smaller plants, large Camellias, a superb strain of Double and Single Begonias, Amaryllis, Tea Roses, Azalea mollis, Ghent Azaleas, Hardy Ferns, and large numbers of other plants. Also

15 FRAMES, various sizes, and a Quantity of FLOWER-POTS.
May be viewed three days prior to the Sale. Catalogues may be had of Mr. W. CARR, the Head Gardener, on the Premises; of Messrs. WILKINS, BLYTH, DUTTON and HARTLEY, Solicitors, 112, Gresham House, Old Broad Street, E.C., and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Isleworth.
ANNUAL TRADE SALE of GOLDEN EUONYMUS and young CONIFERS for potting, window boxes, and growing on, by order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE & MORRIS will
SELL by AUCTION on the Premises, The Wood Lane and Arboretum Nurseries, Isleworth, Middlesex (five minutes' walk from Isleworth or Osterley Park Stations), on THURSDAY, October 5, at 12 o'clock precisely,
4000 BEST GOLDEN EUONYMUS, from 9 to 15 inches, in splendid condition and colour; undoubtedly the finest lot ever offered at this nursery.

Thousands of SMALL SHRUBS for BOXES, including Golden Privet, Aucubas, Yellow-berried Tree-Ivies, Osmanthus, Gold and Silver Box.

4000 CONIFERS, 9 to 24 inches, for boxes, potting, or growing on.
Thousands of Specimens from their famed Collection of ORNAMENTAL TREES, consisting of Cornus elegantissima, flowering Catalpas, Talip Trees, Planes, Purple Beech, Limes, Acers, Chestnuts, Poplars, and other Standard Trees.

1000 GREEN HOLLIES, 2 to 6 feet.
Hundreds of well-grown Erica hyemalis, gracilis, and others; Acacia Drummondii, Eurya variegata, Cyclamen.

500 KENTIAS, COCOS and other PALMS, &c.
May be viewed one week prior to Sale. Catalogues had at the Nurseries; at the Royal Vineyard Nursery, 2, Hammer-smith Road, W.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—Special attention is drawn to the unusually fine stock of Ornamental and other Trees, which are a great feature at the Arboretum Nursery, and intending purchasers are invited to inspect the lots whilst the foliage is still on the trees.

Tuesday Next.
Great and nearly unreserved SALE of over 1500 ODONTOGLOSSUM ROEZZII and six ROEZZII ALBUM of the finest type collected in the best district, and brought home by Mr. F. C. Lehmann. The plants are the finest, and in the best condition ever imported, and it, and the following, brought home by the same renowned collector, afford buyers of large or small quantities a grand chance to procure what they require at convenient prices. Also a quantity of ODONTOGLOSSUM VEXILLARIUM RUBELLUM, the richest coloured of the genus. ONCIDIUM KRAMERI, the most beautiful of the butterfly Orchids. ONCIDIUM UNDOULATUM, the finest of the O. macranthum section; flowers large, white and purple. MILTONIA WARSCWICZII, now very rare, and other fine ORCHIDS, all in grand condition.

MESSRS. PROTHEROE and MORRIS will
sell the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, September 19, at 12.30 o'clock precisely.

On view morning of Sale, and Catalogue had.

Maidenhead.

UNRESERVED SALE of well-grown GREENHOUSE PLANTS, FERNS, &c. By order of Mr. R. Owen.

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, the Floral Nursery, Castle Hill, Maidenhead, 1 mile from Maidenhead Station, on WEDNESDAY, September 27, at 2 o'clock, 4000 GREENHOUSE PALMS and FERNS, CROTONS, coloured DRACENAS, FIGUS ELASTICA VARIEGATA; 2000 CYCLAMENS, 600 PELARGONIUMS, TUBEROUS BEGONIAS, 500 IRIS, 200 CALLAS LITTLE GEM, 2000 ARBOR-VITÆ, LAURELS, and other SHRUBS.

May now be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Bagshot. — Absolutely Without Reserve.
Important TWO DAYS' SALE of unusually well-grown NURSERY STOCK, by order of Mr. R. Mason.

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION on the Premises, the Windlesham Nurseries, Bagshot, Surrey, a few minutes' walk from Bagshot Station, on TUESDAY and WEDNESDAY, October 3 and 4, at 12 o'clock each day, 1000 Standard and Bush Hybrid RHODODENDRONS, of the choicest sorts, 2000 R. ponticum, 3 to 3½ feet; 900 AZALEA PONTICA, 1½ feet; 400 Variegated Gold and Silver Hollies, 1½ to 3 ft.; 5000 Green Hollies, 6 to 9 inches; 10,000 Portugal, common, and other Laurels, 9 inches to 3 feet; 100 Golden Yews, 2 to 3 feet, many thousands of Conifers and Evergreen Shrubs, 1 to 6 feet, including some fine specimens; 300 Retinodora plumosa aurea, 2300 Thujaopsis borealis and dolabrata, Thuja gigantea and Lobbii, 2500 Cupressus, 3 to 3½ feet; 4500 Pinus austriaca, 1½ to 6 feet; 800 Weymouth Pines, 3 to 9 feet; 300 Araucaria imbricata, 2 to 4 feet; 6000 Berberis aquifolia Darwinii and stenophylla, 9 inches to 4 feet; some thousands of Standard Ornamental and Forest Trees, 1000 Purple Beech, 700 Limes, Elms, and Planes, 6 to 10 feet; 1000 Standard and 1 Pyramid Fruit Trees, 500 Kentish Cob and Filbert Nuts, and other stock.

The stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers & Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—Purchasers can arrange with Mr. Mason to lift and forward any lots to any part of the country.

Silverdale Lodge, Sydenham.
TWO DAYS' UNRESERVED SALE of well-grown ORCHIDS and PLANTS, by order of Walter Cobb, Esq., who is leaving the Residence.

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, as above, on MONDAY and TUESDAY, October 9 and 10, at half-past 12 o'clock each day, a very fine Collection of about 1500 ESTABLISHED ORCHIDS, including a splendid lot of 400 Cattleyas, 100 Lycastes, grand pieces of Lælia grantii tenebrosa, 100 Coelogyne cristata, 3 C. c. alba, 400 Masdevallias, 100 Dendrobiums, 100 Cypripediums, 100 Phalenopsis, STOVE and GREENHOUSE PLANTS in variety, 4 two-light Frames, 2 capital Horses, and effects.

May be viewed the Friday and Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Highbury, N.
Five minutes' walk from Highbury Station.
CLEARANCE SALE of GLASS ERECTIONS, Hot-water PIPING, GREENHOUSE PLANTS, &c., by order of Messrs. Parker & Co.

MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, the Aberdeen Park Nursery, Highbury Grove, N., on FRIDAY NEXT, September 22, at 1 o'clock, the Erections of seven GREENHOUSES, 1700 feet of Hot-water Piping, mostly 4-inch; six Boilers, Lights, &c. Also specimen and half-specimen Azaleas, Palms, Aralias, Dracaenas, and other Greenhouse Plants; Garden Tools, Mowing Machine, Delivery Cart, and Sundries.

On view day prior and morning of Sale. Catalogues had on Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Hounslow Heath, Middlesex. — Preliminary Notice.
EXPIRATION of LEASE. CLEARANCE SALE of the whole of the NURSERY STOCK, at this Branch Nursery, by order of Messrs. Charles Lee & Son.

IMPORTANT to the TRADE and PRIVATE BUYERS.
MESSRS. PROTHEROE and MORRIS will
SELL by AUCTION, on the Premises, The Nursery, Hounslow Heath, Middlesex, EARLY in OCTOBER NEXT, the whole of the VALUABLE NURSERY STOCK, which is in capital condition for removal, and includes:—

3000 Victoria Plums	4000 Apples, Standards and others, of the most popular kinds
700 Czar do.	2000 Dwarf M.P. and Tea Roses
330 Gisborne do.	
Hundreds of Rhododendrons	
1600 Poplars of sorts, 10 to 14 feet	

Thousands of Limes and other Standard Trees, enormous quantities of Conifers in various sizes, and other Stock.

Further particulars will appear in future announcements. The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, at the Royal Vineyard Nursery, 2, Hammer-smith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday Next.
Choice FERNS and Decorative PLANTS, CARNATIONS, HOLLYHOCKS, AMPELOPSIS, CLEMATIS, thousands of DAFFODILS, ANEMONES, 50 lots of English-grown LILIES, 700 CALLAS from India, enormous Bulbs, the finest ever received; 2000 NARCISSUS RUGILOBUS, CAPE BULBS, GLORIOSA SUPERBA, &c.

MESSRS. PROTHEROE and MORRIS will
SELL the above by AUCTION, at their Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, September 18, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.
5000 Lots Sold Weekly.

MESSRS. PROTHEROE & MORRIS will
SELL by AUCTION at their Central Sale Rooms, 67 &
68, Cheapside, London, E.C., every day at 12 o'clock, large
consignments of first-class HYACINTHS, TULIPS, CROCUS,
NARCISSUS and other BULBS from Holland; also ROMAN
HYACINTHS, LILUM CANDIDUM and other bulbs for
early forcing, lotted to suit the Trade and private buyers.
On view morning of Sale, and Catalogues had.

Thursday Next.

CAMELLIAS, AZALEAS, PALMS, and FICUS, from BEL-
GIUM; English-grown LILIES, NARCISSUS, and other
BULBS.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Rooms, 67 and
68, Cheapside, E.C., on THURSDAY NEXT, September 21, at
12 o'clock.

On view morning of Sale, and Catalogues had.

Friday Next.

By Order of Messrs. Fred. Horsman & Co.

Splendid Importations and Semi-established Unflowered OR-
CHIDS, consisting of a NEW CATLEYA, selected *Laelia*
purpurata, *Oncidium* *Mashallianum*, *Forbesii*, *Cartum*,
and species unknown; *L. prestans*, huge masses of *Sop-*
hrontis grandiflora, 6 varieties of *Miltonias*, *B. freyana*
(*Lycaste*), unknown; *Laelia anceps* and *L. anceps alba*
varieties in spike; *Oncidium tigrinum* in spike, *Oncidium*
tigrinum, *Odontoglossum Alexandræ* (best type), *Laelia*
flava, choice, *Madevalli*, and many other beautiful
Orchids for Winter and Spring-flowering.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY
NEXT, September 22, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Friday Next.

A small importation of the fine *CALANTHE NATALENSIS*,
in splendid condition. See the *Garden*, September 9, 1893,
p. 237: "Undoubtedly one of the most charming of this
(the evergreen) group, at present a very rare species."
Flowers large, many together on stout scapes, bluish-
lilac, with large purple lip; a very free grower, if not
kept too hot. Also a small lot of established rare DEN-
DROBIUMS, including four *D. Griffithianum* *Guthriei*, a
magnificent species, with very large racemes of light and
dark yellow flowers; four *D. noble* *Ruckerianum*, a
splendid form, which originated with the late Mr. S. Rucker;
D. amicum, *D. mesochlorum*, *Acerides odoratum* *pur-*
pureum, a few established *LELIA MONOPHYLLA*, and
some grand masses of *BROUGHTONIA SANGUINEA*
MAJOR.

MESSRS. PROTHEROE AND MORRIS will
include the above in their ORCHID SALE on FRIDAY
NEXT, September 22.

On view morning of Sale, and Catalogues had.

Friday Next.

500 LYCASTE SKINNERI, Imported Plants.

MESSRS. PROTHEROE AND MORRIS will
include the above in their ORCHID SALE on FRIDAY
NEXT, September 22.

On view morning of Sale, and Catalogues had.

GREAT SALES OF NURSERY STOCK.

Preliminary Notice of Forthcoming Auctions.

Important to those Largely Engaged in Planting.

MESSRS. PROTHEROE AND MORRIS
have been favoured with instructions to conduct the
following SALES, in addition to those advertised in this week's
Gardeners' Chronicle:—

OCTOBER 4.—At PERRY HILL, CLIFFE, near ROCHESTER, by order of Mr. W. Horne.

OCTOBER 11.—At THE DARANTH NURSERY, WESTERHAM, by order of Mr. A. Jiffkins.

OCTOBER 23 to 25.—At the SUNNINGDALE NURSERIES, BAGSHOT, by order of Mr. C. Noble.

OCTOBER 26 and 27.—At the GOLDSMITH PARK NURSERY, GROOMBRIDGE, TUNBRIDGE WELLS, by order of Mr. E. Hollamby (two days).

NOVEMBER 7.—At the HALE FARM NURSERIES, TOTENHAM, by order of Mr. T. S. Ware.

Dates Not Fixed.

At the CART HOUSE LANE NURSERY, WOKING STATION, by order of Mr. R. Collyer (two days).

Other Sales are being arranged, and the dates will be notified in future announcements.

The Auctioneers desire to call the special attention of those who may be planting during the season to these important Sales. They are now revising their Permanent Lists, and will be pleased to add the names of intending purchasers who may wish to have Catalogues forwarded of the above, or any particular auction.

Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Tuesday Next.

SPECIAL SALE OF DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, September 19, at half-past 12 o'clock precisely, an extensive IMPORTATION of Choice HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, in splendid order, just received from well-known growers in Holland, and specially lotted to suit all Buyers. 10,000 Roman HYACINTHS, Forcing LILUM, NARCISSUS, &c., from France, &c.

On view morning of Sale, and catalogues had.

Bulb Sales. Birmingham.

MESSRS. JAMES AND BAXTER (late THOMAS B. JAMES), beg to announce that they are holding their SALES OF DUTCH BULBS, LILUM HARRISI, White Roman HYACINTHS, Paper White, &c., &c., EVERY TUESDAY, at half-past 11 o'clock A.M., at their Spacious Sale Rooms, 12, Bull Ring, Birmingham, usual number of lots 1300 to 1500.

The Weekly Sales of Azaleas, Camellias, Ficus, Palms, Dracenas, and other Plants from Belgium, commence in September, and continue until March next.

The Weekly Sales of Roses, Fruit Trees, Ornamental Flowering Trees, and General Nursery Stock, will commence in October, and continue until March.

Sales of Orchids are held every month.

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MESSRS. WHATLEY & SON are instructed by the owner to SELL by AUCTION on the Premises, without reserve, and in lots to suit buyers, on WEDNESDAY, September 20, 1893, commencing at 2 o'clock precisely. Fourteen days allowed for delivery. No Catalogues.

Auction Offices, 1, Hill's Place, Oxford Circus, W.

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SALE of the REMAINING CONTENTS of the RESIDENCE, also the CONTENTS of the GLASSHOUSES.

MESSRS. PRICKETT AND ELLIS will SELL by AUCTION, on the Premises, as above, on SEPTEMBER 27 and 28, at 1 o'clock precisely each day, the remaining Contents of the Residence, also the Contents of the Glasshouses, consisting of ORCHIDS, PALMS, Stove PLANTS, FERNS, &c.

To be viewed Tuesday previous and mornings of Sale, and Catalogues obtained of the Auctioneers, 57, Chancery Lane, W.C., and 32, High Street, Highgate, N.

Preliminary Notice.

MR. HORNE'S GREAT FRUIT TREE SALE will take place on the premises at PERRY HILL, CLIFFE, near Rochester, October 4, 1893.

CATALOGUES may be had of Messrs. PROTHEROE AND MORRIS, 67, Cheapside, London.

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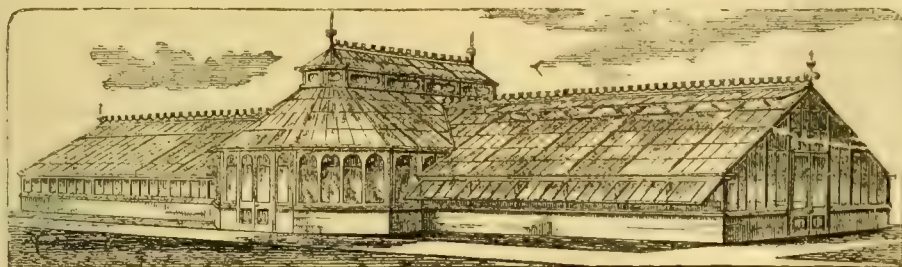
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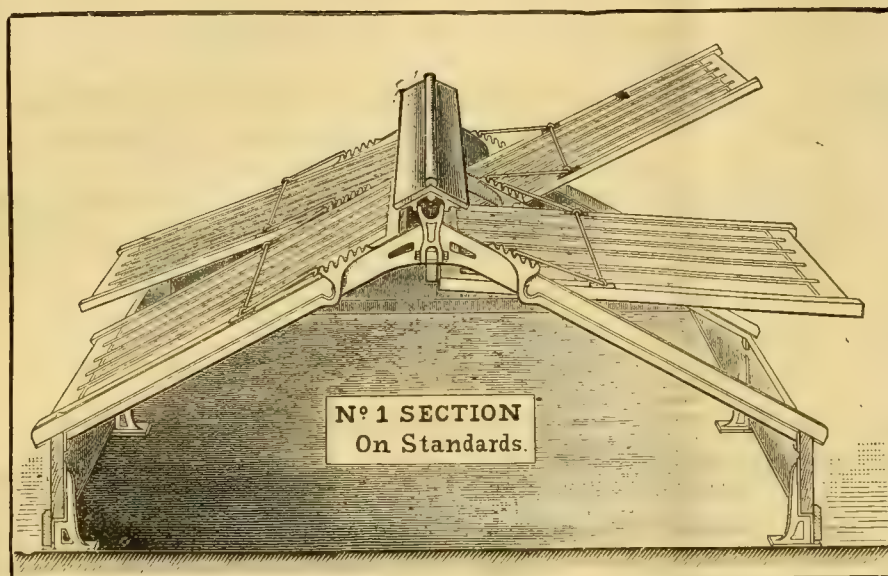
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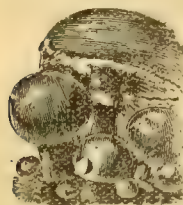
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 16, 1893.

THE RESIN OF CONIFERS.

THE origin and properties of resin in Coniferous timber have recently been investigated by Dr. H. Mayr, and he has succeeded in demonstrating several new and interesting points. The subject is treated rather fully in an article contributed by Dr. Mayr to the *Zeitschrift für Forst und Jagdwesen* for June, and his conclusions, some of which differ from those of previous investigators, are summarised as follows:—

1. Only in an invisible, and thus in the molecular form, in the plasma, can existing resin pass into an intercellular space. Therefore—

2. The cell wall is only permeable for resin so long as it is in process of formation.

3. All resin-canal cells which subsequently belong to the permanent tissue of the wood, not resin secreting, epithelial cells, but partly store cells, as other parenchyma cells, partly secondary meristem cells (thin-walled), are converted after a series of years into permanent cells; therefore, it follows that a secretion of resin in the canals can only occur during the first year or two of the formation of the canal-carrying annual rings.

4. Finished cell-walls, whether lignified, thickened, or not, cannot be permeated by resin so long as the respective walls are saturated by water, and, as in the living tree, both sap and heartwood are always saturated so, it follows that:—

5. All cell-walls of normal wood in the living tree are always free from resin.

6. All resin-holding spaces are surrounded by an impervious, continuous cell-tissue, and, therefore, are completely isolated. The resin cavities are entirely closed in on all sides, and never open at the exterior in an uninjured tree.

7. There is, therefore, no spontaneous exudation of resin towards the surface; every outflow of resin is pathological; where, *primo aspectu*, a spontaneous outflow appears to occur, as on the buds of different Conifers, a close investigation shows that it is connected with exudation into an intercellular space, or with the drying-up of the outer layers, thus in the case of the latter a pathological occurrence.

8. All resin canals of the wood stand vertically over one another, and the horizontal always arise from the vertical; should the place of origin have become lignified with the respective year ring, then the connection between the two forms is effected where the horizontal and vertical canals occasionally cross.

9. With the conversion of sap-into heart-wood, the resin-canals are filled up by tyloses, so that a subsequent flow of resin from the sap to the heart-wood, or *vice versa* (as with the economic extraction of resin), is impossible.

10. The resin must be a bye-product in the formation of coniferin, one of the usually occur-

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ring substances in the resin-yielding Conifers; the resin does not arise from the coniferin, but simultaneously with it, and starch may be considered as the raw material for the formation of both.

11. Neither by normal nor pathological causes (chemical decomposition, or fermentation through fungi) does a conversion of coniferin, lignin, or cellulose (the constituents of the cell-walls), into resin occur.

12. Should a gradual diminution of the watery contents of the cell-wall occur through mechanico-pathological causes (wounds, punctures by insects, &c.), the resin partly takes the place of the water, and can, through unwounded and turgescient neighbouring wood, also fill the "lumina" of the cells. Should fresh wood remain in the ground, as, for example, the stumps of felled trees, the resin is gradually forced by the surrounding moisture into the interior of the stump. Under favourable conditions, as in stagnant water or bogs, the resin occurs in the rotting wood as resin-hydrate in a crystalline form. *A. C. F.*

PLANT NOTES.

HELIANTHUSES.

THE more important autumn flowers are the species and varieties of *Helianthus*, of which there are a large number, differing chiefly in habit of growth. The finest of all is the tall-growing *H. multiflorus maximus*, of which two immense beds are in full bloom near the Palm-house at Kew. This is a striking variety, the leaves large, rich green in colour, and the flowers, though not coarse, are broad, and deep yellow; it grows fully 7 feet in height. The varieties of *H. multiflorus* are very handsome, particularly that called *Soleil d'Or*, which is not of tall growth comparatively, about 4 feet only in height, the flowers perfectly double, and rich yellow; it is remarkably showy. Such kinds as *H. giganteus* are almost too unruly for the garden. Their slender stems rise to a great height, 10 or 11 feet, and the flowers, though small, are carried in profusion. When left to itself, it is very beautiful, the shoots waving about in the wind. The slender flower-laden branches are useful to cut for the house, and for decorations of all kinds. It must be a poor soil and position that will not grow any of the *Helianthus* well.

CHRYSANTHEMUM GUSTAVE GRUNERWALD.

This is a very beautiful early-flowering variety, and was shown by several exhibitors at the recent exhibition of the National Chrysanthemum Society. The flowers are similar to those of *Madame Desgranges*, as large, and as plentiful. The colour delicate pink, shading to white. Mr. Norman Davis, Lilford Nursery, Camberwell, exhibited it well, and it is a variety that we welcome for its freedom and beauty. *V.*

THE AUSTRIAN BRIARS.

M. P. HARIOT in the *Journal de la Société Nationale d'Horticulture* has an interesting note on the history of this Rose, "*la Rose Capucine*." It was, it appears, named *Rosa punicea* by Cornut, *Canadensium Plantarum Historia*, p. 11 (1635). In 1640, Parkinson, *Theatrum Botanicum*, figures the plant as *Rosa sylvestris austriaca flore phoeniceo*, the vermilion Rose of Austria. In 1770, Jacquin mentioned the same Rose under the name *Rosa bicolor* (*Hortus vindobonensis*, p. 1, t. 1), but avowed his ignorance of its origin. M. Hariot goes on to say that the copper-coloured Austrian Briar is simply a "sport" or bud variation from *Rosa lutea*, a plant figured by Dalechamps so long since as 1587, and asserted to be a native of Asia Minor, Armenia, and Persia. In 1720 Boerhave recorded the existence in

the Leyden Botanic Garden of a Rose, one of the branches of which bore yellow Roses, whilst all the rest were of the copper colour of the Capucin Rose. Thory recorded a similar circumstance, and this year M. Hariot himself found on two plants of the Austrian Briar branches bearing only yellow flowers.

In strict accordance with priority, M. Hariot calls the plant *R. punicea* of Cornut. He would have done better to have written *R. punicea*, Miller, ex Cornut, for Cornut wrote long prior to the establishment of the binominal system of nomenclature; or, better still, as the plant is proved to be a mere form, to have written *R. lutea* var. *punicea*, as Lindley did in his *Rosarum Monographia* (1820), p. 84. In the *Botanical Magazine*, t. 1077, the plant in question is called *Rosa lutea*, β bicolor, and Jacquin is there cited as having at first considered the plant to be a distinct species; but observing it afterwards to bear sometimes flowers that were yellow on both sides, he changed his opinion. Parkinson also considered it a variety of *lutea*.

Gerard, p. 1084 (1597) mentions—"The yellow Rose which (as divers do report) was by art so coloured and altered from his first estate by grafting a wilde Rose upon a Broome stalke," but he goes on to say that he has "found the contrarie by mine owne experience"!

The mention of the Rose by Cornut (not Cornuti, as generally but erroneously written) in a history of Canadian plants might mislead the incautious were they not reminded that Cornut appended to his work an "enchiridion" containing the names of plants growing in the vicinity of Paris. We have, however, not seen Cornut's work.

Rivers says the yellow Rose produces copper or red as well as yellow flowers; but, strange to say, though the flowers are invariably single, yet they never produce seed in a wild state, and "in this country . . . it is with extreme difficulty, and only by fertilising its flowers, that seed can be perfected; if the flowers are examined, they will all be found deficient in pollen, which accounts for this universal barrenness." If this be true in other countries, it might lead to the inference that the species is dying out. Another fact tending in the same direction is the circumstance that the yellow Rose, and more especially the copper-coloured variety, will not thrive in the vicinity of London, being in this respect apparently more sensitive than other Roses, none of which can be said to be good Londoners.

THE ROSERY.

ROSES IN SEPTEMBER.

As a rule, when September arrives we can generally speak of the Rose season as past; that is, with the exception of a few stray flowers. This year, however, we are having quite a feast of Roses, and they look like lasting well into October. Taken altogether, I think we may look upon 1893 as having been a fairly good season for Roses. They were in bloom particularly early, many walls and fences being a mass of colour during April and May, and although the unusually hot and dry weather through June and July reduced the quality of summer Roses, we were amply repaid for this in the splendid autumnal display, still with us. Personally, I much prefer an extended season like the present, to a glut from mid-summer until the second or at most third week in July.

The Rose exhibitions were much handicapped by the weather, and with the exception of those stands from Yorkshire, I did not notice anything remarkable at the Metropolitan show of the National Rose Society. There were a few good blooms in some of the stands, but they were very far between. *Madame Cusin* was good; so, too was *The Bride*. Among the H.P.'s, *Horace Vernet* has come more prominently to the front than any other. Seen in the form Messrs. Harkness & Sons have exhibited it this season, it is one of the finest of dark Roses. But how long will it be ere we see it shown in such form again? This is a peculiar Rose; always good with some, and seldom producing

a bloom of any merit with others; indeed, many find a great difficulty in persuading it to live over the second year. Mr. Mawley tells me that his plants are perfect bushes, and I have noticed that he almost always includes *Horace Vernet* in his stands; while more than once he has gained premier honours with six of this against any other variety of dark Rose. With me, it is useless unless grown as a maiden on the Briar, and afterwards cast away. Under this treatment I can sometimes secure a fairly good bloom.

We often find a grower recommending one Rose over all others, much to the surprise of his brother rosarians. With one it is *La France* (a wretched thing with me), another *Madame Lacharme*, and so on. Roses are of such different types and characteristics, that there are sure to be some which will thrive better in one locality than another. Countess of Oxford seldom comes good with me; but, strange to say, its sport, *Pride of Reigate*, invariably produces heavy and shapable blooms. Among a few of the best Roses this season, I may mention *Dupuy Jamain*, *Suzanne M. Rodocanachi*, *Alphonse Souperet*, *Horace Vernet*, *Her Majesty*, *Gustave Piganeau*, *Duchess of Bedford*, and *Duc de Montpensier*. Among *Teas* and *Noisettes*, *Innocente Pirola* and *Ernest Metz* have been most remarkable with me.

As the cool, dewy mornings of autumn approach, we find much more colour in the dark varieties; while such *Teas* as *Marie Van Houtte* have been highly coloured on the edges of their petals. Mildew has not been nearly so common as usual; doubtless, this is owing to the long spell of warm weather, when the temperature was more uniform than we are generally favoured with. Now, however, colder nights and mornings are bringing it on apace. Red-rust, another autumnal disease that is often very destructive among the Hybrid Perpetuals, has not attacked one of my plants. When shall we understand this pest? It does not attack the true *Teas* and *Noisettes*, but it does the so-called Hybrid *Teas*; while beds of Hybrid Perpetuals are suddenly denuded of all foliage by it. *Ulrich Brunner*, *Gloire Lyonnaise*, and *Duchesse d'Autriche*, seem the least affected with me.

It would be worth while to encourage the introduction of dark-coloured *Teas*, if only to secure dark Roses free from red-rust. Like many of my friends, I cannot help feeling that deep-coloured blooms detract from, and break up the softness of colour-tones and chasteness we have always associated with a box of *Teas* and *Noisettes*; but if we can secure the colours of the H.P.'s with the greater floriferousness of the *Teas*, surely a great advance will be made. Year by year we seem to be approaching this nearer.

Single, and what are by the National Rose Society styled garden Roses, have been well shown, and seem to gain in popularity. Such favourites as the best of the Hybrid, *Sweet Briars*, *Bardon Job*, *Paul's single White*, *Rosa macrantha*, and many of the sweet little *Polyanthas* are likely to be extensively grown. But why call them garden Roses? Mrs. J. Laing, Viscountess of Folkestone, General Jacqueminot, and Augustine Guinoisseau are my ideal of garden Roses. These flower very freely, grow well, and will thrive in any soil or position.

Not the least among the beauties of Roses this autumn are the numerous berries of the *Rugosa* or Japanese section; also those of *Rosa pomifera*, and the sweet Briar. The former are always good. Early, mid-season, and late, we can find handsome green foliage, showy single blooms, and trusses of berries, that are admirably adapted for decoration. They are among the last to shed their leaf, are never affected by mildew or red-rust, and when grown in pots, and removed to a cool greenhouse late in the autumn, will retain their beauty until Christmas. I use them largely for Christmas decorations. We shall very soon be busy with planting, mulching, &c. I do not remember seeing the plants with better growth for passing through a severe winter, or with harder and better matured wood for next season's bloom. The drought has reduced the length of many climbers, but it has caused what is made to ripen thoroughly. A smaller quantity of well-

matured wood is preferable to so much rank growth. I shall very soon commence planting my dwarf H. P.'s, especially those growing upon the Manetti. If done early, the roots get a slight hold previous to hard weather setting in. This is an advantage. If we lift a plant and lay it in for a few weeks, we shall find that it makes a quantity of new roots. How much better it would be if these were in established quarters, and what a support they must be against dry winds; the plant being able to derive moisture and sap to maintain the wood in a plump condition. My practice is to plant early, while the ground is still warm; or else leave it until February or March, choosing the first favourable opportunity in these two months.

The question of what stock to purchase plants

of about a dozen species, has long been in cultivation in this country. It belongs to *Ericææ*, and the species the subject of our illustration has white flowers, which appear in September and October, succeeded by rough globular fruits, ripening the second year. These at a distance resemble Strawberries, and although edible they are not pleasant, and it is said that they possess narcotic qualities.

It is cultivated as an ornamental evergreen shrub, and grows from 15 to 20 feet high, of a close, compact, rounded form of growth, and likes a warm, well-drained soil—if sandy and peaty so much the better; and a position somewhat sheltered, it not being hardy in the colder parts of Britain—or at least it does not attain its full proportions in them. It is an admirable shrub for gardens near the sea that are not exposed to the full blast off the water.

they are reflexed; the colour, too, is several shades lighter. This, perhaps, after all, is immaterial, as the major variety (so-called of catalogues) is now grown far more than the other, but still not nearly enough for general purposes. The mistake that many growers commit is in not making a free use of the knife in the early spring, before growth commences. When once a good-sized plant has been obtained in bush-shape by repeated pinchings, then pruning every season should be the rule, only allowing extension for further increase in size; but then even a moderate pruning is better than none at all. To treat this plant, as some do, as a semi-climber is altogether wrong. I have seen it thus trained on trellises, large plants, it is true, but with a deal too much wood laid in ever to flower well.

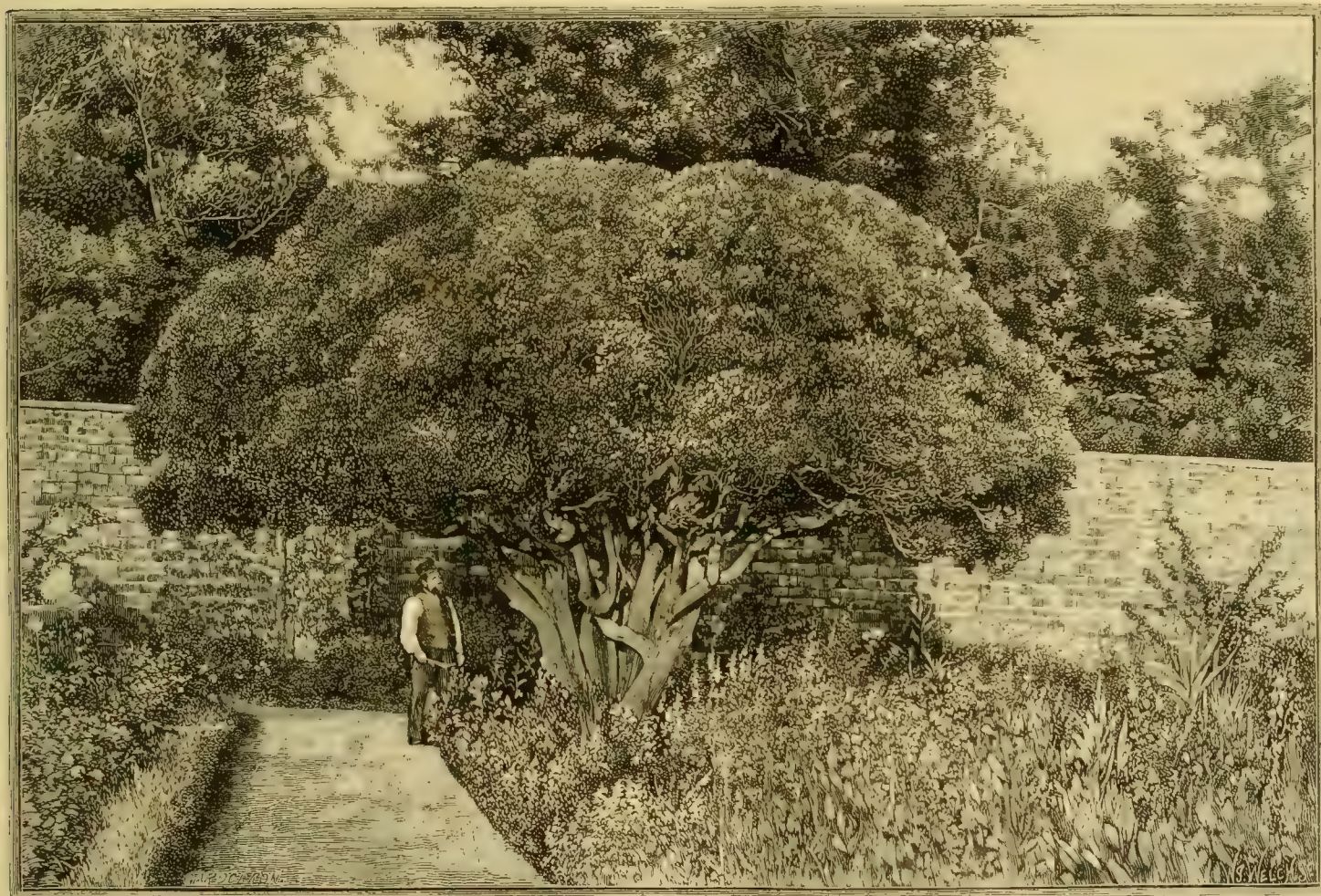


FIG. 54.—*ARBUTUS UNEDO*, IN THE GARDEN AT BALCARRES, COLINSBURGH, FIFESHIRE.

upon, is sure to cause a little doubt with many; but they may safely leave this question to the tradegrower, who will naturally grow each class and variety upon the one he has found most suitable to it. No one stock will suit all Roses equally well, and the soil also has to be taken into consideration; therefore, if when ordering, purchasers would give a few particulars, and then trust their order to a good firm, with a reputation at stake, they would be far better satisfied with the results. *A P.*

ARBUTUS UNEDO AT BALCARRES.

Our illustration (fig. 54) depicts a fine example of *Arbutus Unedo*, the Strawberry Tree, growing in the Earl of Crawford's garden at Balcarres. We need scarcely remind our readers that the *Arbutus*, a south European representative of a genus consisting

A. Unedo is the stock most commonly employed on which the other species of *Arbutus* are inarched.

We are indebted to the kindness of Mr. Tate, the gardener at Balcarres, for the opportunity of figuring this plant.

A GOOD AUTUMN-FLOWERING STOVE PLANT.

RONDELETIA SPECIOSA MAJOR COMPARED WITH THE SPECIES (*R. SPECIOSA*).—This form of *Rondeletia* is much superior in every way when once its treatment is understood. Under ordinary culture it would not possibly flower so freely, being of more robust growth. I have often wondered if the two really are not distinct species. That now under notice has its leaves wider, and not so pointed, whilst they are also of a paler colour; the flowers are borne in larger trusses, but the petals are flat, whereas in *R. speciosa*

It is recommended in one catalogue, at least, as a pillar or wall-plant; this, too, is wrong if the flower is to be the essential feature of the plant. The bush form is far the best way of treating it, and this can only be arrived at by shortening the growths so as to make them self-supporting. Thinning out the weakly wood in conjunction with this will be a good plan also. In form the pyramidal is better than any other for general purposes.

The plants after flowering should be dried off gradually, as in the case of an *Allamanda* or a *Clerodendron*; in due course the leaves will fall off, but this is an advantage rather than otherwise, from the point of cleanliness. To treat this *Rondeletia* as one would an *Ixora* is a mistake; the latter plant will not bear a dry course, the *Rondeletia* will, and be all the better for it. It will be found safe to expose the plants to a slightly lower temperature after flowering, but nothing lower than that which

is safe for a *Clerodendron*, viz., 55° minimum. It is best when treated in a similar way to these other plants in the spring as to starting into growth and temperature, and with no reduction in the size of the ball. The roots are so extremely fine, clustering in such numbers around the sides of the pots; to take these away means a check to the plants, with a correspondingly weaker start into growth. All that is needed when a fresh potting is not really essential, is a top-dressing. Every other season, or once in three years, will be quite often enough to shift into larger pots; as growth commences, let the plants have all the light possible, to prevent the shoots from drawing up weakly. Watering must be increased gradually, until it is seen that the roots and growth are quite active; then, when a plant is in good condition as to soil, the *Rondeletia* will take quite as much water as an *Allamanda*. As soon as the flower trusses are seen to be forming, weak manure-water will be an assistance, thence onwards until the flowering period is passing by; the supply of water should be more after the manner of *Chrysanthemums* than anything else.

About May, or early in June, at the latest, the plants should be stopped simultaneously all over, no shoot being missed, taking the points out just above the last pair of leaves that are nearly developed. By this stopping, two shoots will be produced in place of the one, and sometimes more; besides which, the back buds are strengthened for another spring's break into growth. With a few plants it is easy to thus regulate the flowering season. It takes from fourteen to sixteen weeks to bring a plant into flower from the time of stopping; thus, if a plant be stopped about the first week in May, it may be had in flower by the middle of August. The season of flowering for this *Rondeletia* may be easily extended over at least two months or ten weeks from the first week in August until the third week in October, by adopting this method of stopping. It is this stopping which so much increases the floriferousness of this *Rondeletia*, as well as that of the old *R. speciosa* also; yet this fact does not seem to be grasped by the majority of plant-growers. At the late summer and autumn shows one rarely sees it recorded that *Rondeletia speciosa major* is a noteworthy plant in any collection, yet when well-grown and freely flowered, an *Ixora* even must be in the finest possible condition to surpass it in point of merit. As a plant for home use also it is extremely useful, alike as it is seen in flower as well as for cutting. Under the pruning treatment, this cutting process never does any harm at all. In a cut state the flowers last well, and are, by reason of their colour, quite distinct from anything else. In regard to soil, there is nothing to surpass the best quality of peat of that kind and quality that one would select for *Ericas* or New Holland plants. Firm potting is of the utmost importance. To the peat should be added silver-sand and some nutty charcoal. Large shifts are never desirable. *H.*

ORCHARD-HOUSE TREES.

THE fruit trees cultivated in pots, and exhibited at the Agricultural Hall, Islington, by Messrs. T. Rivers & Son, Sawbridgeworth, Messrs. Bunyard & Co., Maidstone, and Messrs. W. Paul & Son, were sufficient evidence of the value of orchard-houses for producing first-class fruit in quantity. One has to look at the cultivation of fruit trees under glass from several points of view. The utilitarian aspect may be placed first, for fruit is mostly grown to be eaten; and unless fruit of superior quality can be obtained from fruit trees, the primary object of the cultivator is not obtained. There is another aspect of the question which to some may be even of more importance, and this is the pleasure to be derived from seeing the trees go through their periods of blossoming, setting, and the stages of development until it is fit for eating. The fruit-cultivator soon becomes acquainted with all the above details, and learns the exact kind of treatment his trees require

at the various stages of growth. One may inquire, Where does the pleasure come in? To this I reply, where is the pleasure of growing *Anriculas* or *Carnations*? The amateur is satisfied to grow his plants, and attend to them day by day, and often at unseasonable hours at night, for the sake of the pleasure of a month or less of bloom; and does not the fruit-tree cultivator have his season of bloom lasting for more than a month? The lovely pink tint of the Peach and Nectarine blossom, the Cherry trees laden with flowers of the purest white, and best of all the delicate blush of the Apple blossoms. The late Mr. Thos. Rivers recommended rapping the trees daily with a stout stick when in blossom, but I found this injured the bark, unless it is done carefully, so I shook them by hand to disperse the pollen; or those that are shy of setting are touched with the pollen from a free-setting variety. For instance, if the pollen is taken from Royal George Peach and carried to the stigma of such an one as *Exquisite*, the chances are that the latter will bear a full crop, whereas, if it is not attended to, it might fail; but as a rule, if the trees are gently shaken daily, the pollen is sufficiently distributed. Very soon after the blossoms pass away, attention has to be given to disbudding, and also thinning-out the fruit, which in most instances sets so abundantly that it is necessary to remove at least five-sixths of it, and the growths are likewise far too numerous. These may be thinned-out in the early stages of their growth, but the final thinning of the fruit must be left until the stoning period is reached. Before the stoning period commences, much has to be done in the way of stopping the young growths. The most vigorous growth is made at the top of the trees, and the shoots there require stopping first; the check they receive gives the lower growths a chance to develop more fully. All this attention to the trees is a healthful occupation to an amateur. By-and-by the time of the ripening comes round, which is another source of interest. Gardeners and others complain about the labour involved in watering, and, of course, one must look at the disadvantages as well as the advantages.

From the beginning of May until the fruit ripens in July and August, watering and syringing must be very carefully attended to, and the fact cannot be disguised that the trees require daily, and on very hot days, hourly attention—for, if any of the trees suffer for want of water, high-class fruit cannot be expected; but every grower of high-class produce, be it flowers, fruit, or vegetables, has to bestow great care upon them. Take *Chrysanthemums* as an example. I have grown *Chrysanthemums* for the production of very large blooms, as well as Peach and Nectarine trees at the same time, and have no hesitation in saying that it costs less to produce a first-class Peach or Nectarine, than it does to obtain a first-class bloom of a large-flowered or Japanese *Chrysanthemum*; indeed, an amateur, who also stands high as an exhibitor of *Chrysanthemums*, informed me that he estimated the cost of the production of his large blooms of *Chrysanthemums* at a shilling each.

Of course, the healthful occupation of gardening ought not to be measured by pounds, shillings, and pence; but as some persons insist upon taking it this way, their objections have to be met. Gardening has been well described as "the purest of human pleasures, and the greatest refreshment to the spirit of man," and I have no hesitation in saying, after twenty-five years' experience, that orchard-house culture of fruit trees in pots is one of the greatest pleasures of gardening. I like to start with them at the beginning, not exactly in the bud state, but after the trees have made a year's growth. The trade will supply these "maiden" trees, as they are termed, at a reasonable price. They should be planted in 9 or 10-inch flower-pots in November, and the flower-pots should be plunged over the rims out-of-doors. I use cocoa-nut fibre refuse for this purpose, or spent tan answers as well. In early spring the trees are pruned, and placed in a glass-house, where they make

fine growth the following season; by being pinched once only, the growths become studded with flower-buds, and the pots packed full of roots. These young trees, remember, only two years' growth from the bud, will produce fruit the following season, good enough to beat in competition the best productions of the most princely gardens in England. All that is required is attention to the wants of the plants, and they are not exacting except for the three months from the setting of the fruit, until it arrives at the ripening stage. The best potting compound for fruit-trees in pots is good fibrous yellow loam, three parts; add to it one part decayed stable manure, and to every barrow-load of the compost, a seven-inch potful of bone dust. Drain the pots well, and ram in a mixture around the roots quite firmly. Besides this rather rich compound, three surface-dressings should be made in the summer, and for this, although I have tried several, none are better than that recommended by the late Mr. Rivers in the early years of Orchard-house culture, viz., one part malt or kiln dust, and one part of horse-droppings scraped from the roads. The two are thrown together, and made moist by water drained from a dung-hill. The material heats violently, and should be turned over every day, until most of the heat has subsided. Mix enough to last the season. The first dressing is put on when the blossoms have passed away, and it is seen that the fruit has set; another dressing may be given at the beginning of the stoning period, and the last when the fruit begins to swell after stoning. The formation of the kernel inside the fruit occupies about six weeks, and during that period there is little or no appreciable difference in the size of the fruit, and those who have not experience in stone-fruit culture are sometimes fearful that something is wrong. After stoning, the trees take abundance of water over the leaves and at the roots. A Pine-house temperature is not too much, if there is plenty of moisture. Syringing is necessary to keep the trees free from insect pests, especially that tiresome parasite, red-spider.

At p. 236 of the present volume there is a good list of the best varieties to cultivate, and other useful information of a general character, by Mr. Divers, who, by the way, doubts whether pot culture of fruit trees would pay the market grower so well as if the trees were planted out, and trained to a trellis. Market growers are not slow to find out which way pays best, and I, for one, would not dispute with them about it. Amateurs who garden for pleasure would do well to keep the question, "Does it pay?" in the background. *J. Douglas.*

[We ought to allude here to one aspect of the practice of growing hardy fruits under glass, which escapes the ken of southern growers with their finer climate, &c., and that is, the existence of places in Yorkshire, Durham, Northumberland, and other cold parts of England and in Scotland, where Pears, Apples, Plums, let alone Peaches and Apricots, cannot be ripened out-of-doors, although the trees may make fair growth. Sometimes, as at Lambton Castle, Durham, where the deleterious fumes of the numerous smouldering heaps of slack at the twenty different collieries around prevent it; and sometimes it is climatic influences that work against its accomplishment. In such unfavourable cases orchard-house culture in some form or another becomes a necessity, for it is found that the kinds of fruit that will not succeed on the best of aspects outside furnish excellent returns under glass, and the fruit is handsome, well-coloured, and large. The number of trees need not to be a large one, for one Pear tree, for instance, will produce at least three dishes of fruit, i.e., ten or a dozen trees would carry the supply of that kind of fruit through a month of thirty days. Multiply thirty by seven, the number of months Pears are in season, and you have the required number. Given a house 100 yards long by 10 yards wide, we have a 1000 that would very well accommodate the 700 or 800 trees of all kinds required, besides having cordons on the rafters. *Ed.*]

PARK HILL, STREATHAM.

ON breezy Streatham Hill, a few miles from the smoky metropolis, is the residence of Henry Tate, Esq., whose munificent bequest of his splendid pictures to the nation was recently made known. The house commands lovely views of Surrey scenery, and from the fine terrace, gay with many vases of flowering plants, the eye stretches over a picture of heathland, Epsom Downs, Thornton Heath, and surrounding country—a noble view, that reminds one of the scenery from Reigate Common.

The garden is not of large extent, but thoroughly well kept. An atmosphere of order and good management pervades the place, stove plants, Ferns in particular, fruit, and Chrysanthemums being amongst the chief things of interest to the gardener, and Mr. Howe, who has care of them, wins many first prizes at leading exhibitions, not only in the district, but at the more pretentious metropolitan displays. The terrace is planted with a great variety of bedders, and good effects are derived from the judicious contrasts of colour; whilst the ground from here dips considerably to a small lake in the bottom, near a rocky construction by Pulham. In a leafy sheltered nook, a quiet retreat on a summer day, *Anemone japonica* is planted largely, and its white flowers present a pleasant effect against the surrounding shrubs. Here also Palms flourish without protection, but even in the most favoured spots Palms are scarcely satisfactory in England.

Park Hill is richer in indoor plants than those in the open air, although the space at disposal is made the utmost use of; and at the entrance to the carriage-drive a huge pyramidal *Pelargonium*—at least, many plants joined in its construction—makes a mass of gay colour. This pyramid is upwards of 14 feet in height, not exactly pretty, but giving plenty of colour at a suitable position. Years ago this style of gardening was much in fashion, but a healthier taste has since arisen. We do not condemn the pyramid here, as it is difficult to get such a rich surface of flowers in another way. The house adjoins ferneries and a large structure for Palms. We venture to think that Park Hill will hold its own well against many of the finest English places for Ferns and Palms. The corridor leading to the dwelling rooms is gay with a rich variety of *Celosias*, *Streptocarpuses*, and *Campanula isophylla alba*, one of the finest of all basket or pot plants. Earlier in the season the *Fuchsia* adorns this corridor, and many of the leading varieties are grown. It is impossible in reasonable space to deal at length with the many features near the residence. The "flower house" is a mass of bright colours, and we were especially struck with the good plants of *Celosias* and tuberous *Begonias*, two things that should be grown largely for making a display at this comparatively dull season of the year. One house is devoted to *Lapagerias*, and a number of seedlings are in bloom which show a departure in colour from the normal type. The Palm-house is crowded with huge specimens of such well-known kinds as *Seaforthia elegans*, *Phoenix* in variety, *Cibotium princeps*, *Kentia Fosteriana*, and many others. It will be remembered that Mr. Howe won the first prize at the recent show in the Agricultural Hall for two Palms—splendid specimens of *Seaforthia elegans* and *Kentia Fosteriana*. The fernery is filled with choice specimens, *Adiantum cuneatum* being in superb masses; and other species of note were the large-fronded *Marattia elegans*, a very handsome Fern; *Goniophlebium subauriculatum*, and a host of *Adiantums*, such as *A. æmulum*, *A. concinnum latum*, *A. Weigandi*, *A. Williamsi*, and *A. tenerum*. A Fern grotto, so to speak, runs off from the Palm-house, and the fine-leaved *Begonias* luxuriate in the cool, moist, and shady surroundings.

In the grounds, the plant-houses are numerous—in fact, this is essentially a glass-house garden, in which Mr. Howe grows the fine fruits, vegetables, and plants seen at exhibitions. The Orchid-house contains an assortment of *Cattleyas*, and the cooler department some of the largest masses of *Cypripedium insigne* in variety we have seen for years. *Crotons*, *Dracenas*, and *Allamandas* are the chief

features of interest in the stove, and the foliage-plants are remarkably well coloured. Of *Crotons*, the more important are the varieties *Queen Victoria*, *Lord Derby*, *Sunset*, and *angustifolius*. *Allamanda Schottii* and *A. nobilis* were in bloom—the latter a very beautiful kind, the flowers clear yellow, a refined pleasing shade. *Poinsettias* for Christmas decoration are grown in large quantities; and the pits are filled with splendid batches of *Primula obconica*, *Cyclamens*, Chinese *Primulas*, *Eucharis*, and *Pancratiums*. The plants of *Primula obconica* are good in every way, growth and size of flowers. Evidently careful selection has been made over a number of years of the best varieties, the flowers approaching in size almost those of the Chinese *Primula*, and varying in colour from rose to white. One variety was pure white, and a beautiful flower for cutting as well as for the plant-house. Largely grown for table decoration are the various kinds of *Asparagus*, and one in particular deserves mention, *A. deflexus*, which is quite distinct from the more popular species, such as *A. plumosus*. *A. deflexus* is more suitable for pots, the trailing, deep green shoots hanging gracefully over the sides, and, when cut, are very pretty arranged on the table.

Chrysanthemums are represented by a large collection of plants in finest health. The flowers from Park Hill are to be seen at many exhibitions in murky November, and there is every promise at present of rewards in the coming season. One variety named *Felix Cassagneux* was in bloom, and sufficiently so to be worthy of note. It is a very fine Japanese variety, with flowers of a golden-yellow colour.

FRUIT.

The largest department is devoted to fruit, and the vineries are numerous, whilst, what is of more importance, the Grapes are superb. One lean-to house is planted with Black Hamburgh, and the best Vine was lifted twelve months last Christmas, kept out of the ground through unavoidable circumstances a week, and then planted. It is in splendid health, and carrying a crop of highly-finished bunches. We notice here that the berries of all the Grapes are not only individually large, and the bunches well-proportioned, but the colour is faultless. *Gros Maroc* is not a great favourite, but the Grape is pleasant to look at, and tells in a collection at the exhibition or on the table; its quality, however, is not in keeping with its inviting aspect. One house is devoted to *Madresfield Court Muscat*, and the bunches are in every way satisfactory, not shrivelled, or wanting in finish. Perhaps the finest house is that of *Alicante*, and one Vine fills the entire structure, which is about 35 feet long. We have visited many gardens in recent years, but never met with such a Vine of this variety. It has, in some years, carried one hundred bunches, but of late this number has been reduced. Each bunch averages about 3½ lb. in weight, some turning the scale at 5½ lb. This is not all, for the colour and finish deserve highest praise, as may be judged from the heavy clusters cut from this Vine at exhibitions. The Muscat-house is about 70 feet long, and the same good cultivation is evident here as in other structures, whilst there are a number of early houses.

Peaches and Nectarines are as interesting a feature almost as Grapes; one is taken to a long lean-to structure, healthy trees are on the back wall, but in front Tomatos are grown most successfully; the two leading varieties are *Lady Bird* and *Perfection*, both solid, handsome fruits, of first-rate quality. A second early Peach-house contains fine old trees of *Royal George* and *Grosse Mignonne*, and a smaller house is filled entirely with the last-mentioned variety. A lean-to fig-house is of interest, as it is occupied with a tree of the *Brown Turkey* variety, now bearing its second crop.

Separate houses are devoted to distinct kinds of fruits, and a small structure is planted with *Cucumber Lockie's Perfection*, the only kind, we believe, grown here. This is fast superseding the old *Telegraph*, and is a free-bearing variety, the fruits solid, smooth, and of good quality.

Although, as we have already mentioned, the

gardens are not of remarkable extent, every inch of space is made good use of. The outdoor fruits, especially of Apples and Pears, are a distinct success. Many of the trees are on the *Paradise stock*, and bearing heavy crops of clean, handsome, well-coloured produce. Of Apples, a tree of *Baumann's Red Winter Reinette* is loaded with fruits of brilliant colour, and other varieties worth mentioning are *Cellini*, *Lord Suffield*, *Stirling Castle*, *Alfriston*, and *Nelson's Glory*; and of Pears, *Fondante d'Automne* is the favourite variety; he who prefers this luscious Pear is no bad judge of fruit. *Louise Bonne* of Jersey, *Glou Morceau*, *Beurré Diel*, and *Marie Louise* are the other chief kinds.

From the foregoing notes of this beautiful suburban place, it is unnecessary to write that the garden is well-managed in every respect, and we may mention as possibly of interest to readers, that Mr. Howe has been gardener here nearly twenty years. *Visitor.*

OUTDOOR PEACHES.

I NOTE a favourable reference made to the out-of-doors Peach crops at Barham Court Gardens on p. 207, and another as to the success attending their cultivation on a west wall. My opinion is that far too much stress is laid upon having south walls for Peaches in south-country gardens. Many gardeners consider it to be absolutely necessary to have south walls for Peaches, or it is useless to attempt to grow them out-of-doors. While admitting that a south wall offers the most advantages, taking one season with another, I am content to have walls that face west as well, and what may appear still more remarkable to some, an eastern aspect. I know some gardeners do not believe that the Peach can be successfully cultivated against a wall facing east; but it can be, and is done, in spite of bad seasons. I have to-day (August 22) gathered two dozen of really good fruit from a tree of *Royal George* growing against an east wall 8 feet high, and much exposed. This was only a small part of the crop, several dozens having been previously gathered. Against another east wall in this garden, a tree of *Princess of Wales* Peach is carrying a full crop of large fruits; and an *Elruge Nectarine* alongside of it is heavily laden with finely-coloured, good-sized fruits. Capital crops of both *Alexander*, *Grosse Mignonne*, and *Dymond* Peaches have been gathered from young trees on a wall facing west. In all these cases there has been a depth of colouring of the fruit which always accompanies good flavour, as I believe the one is governed by the same cause as the other, viz., plenty of sunlight. From trees on open walls we have had a succession of ripe fruit since the last week in June, commencing with *Alexander*, followed by *Early Louise* and *Hales' Early*. These last two Peaches are much superior in regard to flavour to the first-named variety, especially *Hales'*, which is one of the best early varieties out-of-doors. A tree of *Grosse Mignonne* Peach planted on a wall but 8 feet high afforded 300 well-coloured fruits of a reasonable size. *Walburton's Admirable* was ready on a south wall in the third week of August. The season of 1893 has been an ideal one for open-air Peaches, if water was abundantly supplied at the proper time. The trees have revelled in the strong sun-heat, with good root-waterings and mulches of stable-dung. I gave the trees a nightly washing with tepid water to prevent the spread of red-spider, and cool the bricks and foliage. Where failure to ripen out-of-door Peaches occurs, it may generally be traced to faulty methods of pruning, or to an unsatisfactory state of the roots, these being either too deep, the soil too loose in texture, or manure too liberally applied. Bad pruning has much to answer for. The best of all seasons for this operation is soon after the fruit is gathered, then there is sufficient time for the proper ripening of the current season's shoots; for where the leaves of one branch overlap entirely those of the shoot below it, but poor returns can follow. I think that the roots of the Peach and Nectarine should be limited to a certain area. At a distance of 4 feet from our Peach wall

there runs a border of herbaceous plants, and these are taken up periodically, the soil deeply trenched, and all Peach roots found in it are cut off to the feet limit, and these trees never have long roots devoid of fibre. A visit paid a year ago to an enthusiastic amateur gardener, who said that his Peach trees were dying, revealed some ignorance as to the wants of the trees. I learnt that upon the approach of winter the trees were protected by sheep-hurdles placed against the walls, covering these with dry Bracken, the covering remaining till there were observed signs of returning life in the trees. Subjected to this treatment, it was no wonder that the trees were dying. Too many gardeners crop the soil too close to the trees, for the vegetable crops impoverish the soil, and drain its moisture too freely away, to the detriment of the trees. Peach trees in some gardens and soils suffer from lack of water at the roots during dry weather, and more attention should be paid to this matter. *E. M.*

PEDIGREE OR GRADE RACES IN HORTICULTURE.*

BY HENRY L. DE VILMORIN, PARIS.

(Concluded from p. 301.)

HOW HEREDITY WORKS.

ALTHOUGH heredity is an ever-present and active agent in the transmission of qualities and characteristics in organized beings, its mode of action is not so simple as at a first glance it might seem to be. That like breeds like is a commonly admitted fact, but the like must be taken in a rather broad sense, and the fact that some differences may occur between the parent and the offspring is at the bottom of all improvement of plants by selection.

A being born from one or two of the same kind will be like his parent or parents. But if the parents, although of one kind, were not exactly like one another, how will the descendant look? Will it take after the one or after the other, or blend the features of both? And again, if each of the parents comes from two different ancestors, which of the four will take the lead in the form and character of the new being?

The network of lines of attraction which would induce a living organism, plant or animal, to be like every one of its ancestors can scarcely be unravelled. Still, the consideration of the various influences acting on an incipient organism can be pretty accurately summed up in direct heredity, which tends to make the new plant or animal to resemble its immediate progenitors, and atavism, which induces it to be like the mass of its removed ancestors. I omit for the present the idiosyncrasy, which is the tendency in the new plant to combine the inherited characteristics in some special manner adapted to its own particular wants. If the parent was like its progenitors, then all the influences work the same way, and there is every chance of perfect fixity in the series of beings born in succession. But if the progenitors for one or more generations has swerved from the characteristics of the ancestors, heredity and atavism will come into conflict, and the outcome cannot be predicted surely.

Some hints on probabilities may be had from an experiment conducted by my father on two varieties of the *Lupinus hirsutus*, the one with blue and the other with pink flowers. The conditions were in this case very well adapted to the study of the action of heredity, the flowers being in the Lupine not only hermaphrodite, but also cleistogamous, so that a seed is the produce of only one bloom of one plant. Two lots of seed were sown to begin with, some of the blue and some of the pink strain. Most plants turned out true, still a few with pink flowers were found in the lot of blue, and conversely, some blue among the pink ones.

In the following year seeds of the true plants were sown again, and along with them seeds of the "rogues" found in each lot. In the latter, the greater proportion of plants followed the colour of the parent plant, but a great many more showed the alternative colour than was the case in the original lots. Seed from blue and pink-flowered plants of the third generations were sown again, every possible combination in the relations of the ancestors as to colour and distance being tried as much as possible, and the number of blue and pink-flowered plants being

carefully noted in each case, and the experiment was carried on for several years. Though no exact rules can be arrived at from experiments with living things from the tabulated results of the experiment, the following inferences can be drawn:—

1. The tendency to resemble its parents is generally the strongest in any plant.

2. But it is notably impaired if coming into conflict with the tendency to resemble the bulk of the ancestors.

3. This latter tendency (called atavism) is constant, though not very strong, and scarcely becomes impaired by a series of generations passing by without a reversion to the ancestral type having taken place.

4. On the contrary, the tendency to resemble a near progenitor (two or three generations only distant) very soon becomes obliterated if the said progenitor be different from the bulk of the ancestors. From this it will be seen that choice new races can be raised quickest, and with the smallest amount of labour, where all needless conflict in the hereditary powers is avoided.

HOW THE ACTION OF HEREDITY CAN BEST BE TURNED TO ACCOUNT.

But it may be rightly remarked here, that it must be shown how variations can be obtained, before we are shown how they can be made permanent.

It is admitted by all observers that plants, being immovably fixed in the ground by their roots, and consequently prevented from seeking favourable and from avoiding untoward circumstances, are endowed by way of compensation with the power to adapt themselves to some extent to different conditions as to soil and climate. The manner in which plants so adapt themselves is most admirable, but it is not here the place nor the time to consider it. Suffice it to say, that the changes in the size, position, and anatomy of their various organs, appear to be much called up by than produced directly by the changed conditions. The important point in the present case is that variations in the special characteristics of a cultivated race may and do occur occasionally, and that such variations can be made permanent, and still magnified by the process of selection. To wait for them to appear among seedlings is the simplest and most ordinary process. But their appearance can be hastened and made more probable by the selection of seeds from a plant showing already some trace of variation, or by means of a cross with some other variety of the same species. As soon as a distinct variation has made its appearance the work of selection begins. The essential thing is to secure a deviation from the old type of the plant under experiment. It matters little whether such deviation takes place in the desired direction or not. Some authors even advise the experimenter to look for any change at the first stage, and at the next one for the greatest possible deviation from the first change in any direction, except a reversion to the old type. This may be useful so far as the appearance of new forms is concerned, but if adhered to too long, it might make the fixation of the new forms rather difficult and slow, by breeding continuity out of the new race.

FIXING DESIRED FORMS.

Whatever the cause of the original variation was, action of the plant's own tendency to vary, or some external cause, or a cross of pollen, the next thing to be done is to make the variation permanent by selection. This is sometimes very easy, the new form becoming at once perfectly true and fixed. A case in point occurred several years ago in my trial grounds at Verrières. One plant of *Clarkia elegans*, with pure white double flowers, was discovered among a number of the same species with double purple flowers. It was singled out of the seed sown the next year, when every plant raised gave only double white blooms, and it has never since been known to give any but pure white flowers. If such cases were of common occurrence, they would make the task of the breeder of new varieties a very easy one. Unfortunately, they are very rare exceptions, and the tendency of new seedling forms is rather to revert frequently and rapidly to the original type. Great attention and vigilance must be exerted to counterbalance this tendency to reversion. The best and most useful plan is not to mix together the seeds of the selected plants in case several were singled out, but to sow the seed of each separately, as the several plants selected may be endowed in a very unequal degree with the power of transmitting their own characteristics to their progeny. Now the principal object and the principal effect of selection, if well conducted, is to effect a complete transmission

of the qualities we seek of any given race. Its aim must be, in consequence, to eliminate any plant which is not fit to reproduce itself "true."

It is often observed that in such cases when the seeds of several plants selected in the same batch of seedlings are sown side by side, and separately, the one will come up true with only a very few or no "rogues" at all, while others will give a very medley of plants. If further selection be made only from the lot that came up true, the new variety may be considered as already fixed; whereas many years of cultivation and "roguing" may be required to bring it to anything like purity if progenitors be taken from the lots in which numerous variations occurred. Fixity of character is of great importance to garden and field plants grown from seed, and the tendency to fixity should be inbred in plants just as the tendency to earliness or to hardness. The power of transmitting their own qualities to their progeny is just as hereditary as any other qualification, and no effort should be spared to make it one of the points of a new race. Breeding from single progenitors appears so far to be the safest and shortest way to the proposed end.

CROSS-BREEDING.

Cross-breeding greatly increases the chance of wide variation, but it makes the task of fixation more difficult. It, however, gives the raiser the only means in his possession to unite in one the qualities of two different plants while discarding their weak points. All the different qualities of the two parents seem to unite in the most varied combinations in the cross-bred products. In this way plants are often found which inherit most of the good points of both parents, while some others sum up the defects of both. This I repeatedly observed in rearing cross-bred Wheats. An occurrence not unfrequently observed in cross-bred plants is, that some character belonging to one of the parents is magnified in the progeny. For an instance, Mr. Charles Naudin observed in crossing *Daturas*, that the cross of a slightly prickly variety with another kind which had smooth stems, resulted in the raising of a decidedly prickly hybrid.

In framing the character of the progeny, the action of each parent is often very unequal, according to the power of each in transmitting its characters. The one that is better endowed in that respect stamps its features more firmly on the cross-bred plant. Discussions have arisen on the influence of the male and of the female progenitor on a cross. I believe that the stronger organism of the two, the one rather which is better endowed with the power to transmit its characters, will predominate in the progeny, whether it comes from the male or the female parent.

One trait that makes the fixation of cross-bred plants difficult, is in some characters of both parents breaking out in different parts of one and the same plant, instead of being, as we could wish, blended together. In cross-bred Peas, for instance, which were raised from a white-seeded and a green-seeded parent, it often occurs that at the second or third generation pods are produced, which contain mixed white and green seeds. In the same manner round and wrinkled seeds are found in the same pod. This is a great difficulty, and an almost sure sign of further variation, as a plant showing such breaks cannot be depended upon to give rise to a uniform progeny. In many similar instances recorded in my books of experiments, the green Peas gave plants with white seeds, and the white ones with green. You can scarcely expect a plant which is not constant in its own parts to be constant in its progeny.

The unity in character of any single plant is the main factor in the work of pedigree or grade breeding, and I wish to lay especial stress on that point, which I think of paramount importance. The consideration of the qualities or defects of a plant taken as a whole, not of minor parts, should guide the raiser in his work.

The advice is often given in horticultural books to take the seeds from some particular portion of the seed-bearing plant, in order to secure a better result. In German Stocks, for instance, it is a common belief that the seeds of pods taken from the middle or from the base of the main stem will give a larger proportion of plants with double flowers, than if taken from the top of the same or from side-shoots. I many times tested the idea, and it always proved a fallacy. All the pods on a plant give an almost exactly equal proportion of plants with double and single flowers, no matter what part of the plant they may be gathered from.

A real difference is in the percentage of single and double flowers from various plants of the same

* Read before the Seedsman's session of the World's Fair Horticultural Congress, Chicago.

variety. In this way very wide differences sometimes occur, but not in the case of seeds taken from various parts of the same plant. I tried an experiment with seeds of *Chrysanthemum carinatum* gathered on double, single, and semi-double heads, all growing on one plant, and found no difference whatever in the proportion of single and double flowered plants. In striped *Verbenas* an unequal distribution of the colour is often noticed; some heads are pure white, some of a self-colour, and most are marked with coloured stripes on white ground. I had seeds taken severally from all and tested alongside one another. The result was the same. All the seeds from one plant, whatever the colour of the flower that bore them, gave the same proportion of plain and variegated flowers. No more proof, I think, need be given that selection, which is all-important in the case of seeds from different plants, is of no importance as regards the different parts of any one plant on which seeds may be borne.

No limit can be fixed as to the improvements which may be expected from care, thought, and selection. The gains of the last dozen years may surely be taken as the forerunners of better things. It is clear that no very important additions to our cultivated plants are to be expected now from the discovery of new species, but an unlimited field opens before the raiser of new and improved forms in all our garden flowers, and in fruits and vegetables. The recent success of European raisers of new *Begonias*, of hybrid *Gladioli*, and of large-flowered *Cannas* are equalled by the gains of the American raisers of *Chrysanthemums*, of garden *Beets*, and of *Tomatos*. I may add by way of conclusion, that much good may be expected from the more and more frequent exchange of strains between the old and the new world. Such complete changes of soil and of climate frequently gave rise to variation, and so either by subtle changes one cannot see the cause of or by well-considered crosses, American and European varieties of our useful or beautiful plants may give rise in their turn to more numerous and useful variations than would have occurred had these races been confined exclusively to the country of their origin. *H. L. de V.*

ASTERS AT CHISWICK.

THE collection of *Asters* in the gardens of the Royal Horticultural Society at Chiswick is representative, and should be gone carefully through by all who are in a position to do so. Many very beautiful varieties never seen in gardens are flowering, but this year they are not so satisfactory as last, the extreme drought bringing them prematurely into bloom.

Last year the plants were in the trial-ground, but they have been shifted to the long border running the length of the conservatory. Varieties that usually flower a fortnight or so later are already past perfection, remaining in full beauty a very brief time. It is unnecessary to give a long list of names, and those really interested in the perennial *Asters* should get the *Journal of the Royal Horticultural Society*, vol. xv., parts 2 and 3, where Mr. D. Dewar of the Glasgow Botanic Gardens, in an able review and classification of the genus has given a lengthy list of the finest varieties, with description of each, as a guide to the best selection. He there mentions that "The collection of these beautiful autumn flowers now at Chiswick is by far the finest I have seen brought together in any one garden. They have been gathered from all the known sources in Great Britain; and, as far as possible, to facilitate the naming, the English forms have been planted side by side with a series of presumably wild or authenticated types. These latter are from Kew, and from the Harvard Botanic Gardens in America, long the head-quarters of the veteran botanist, Dr. Asa Gray."

The two showiest kinds in bloom at present are the earlier-flowered *A. acris* and *A. Amellus*. *A. acris*, a European species, is remarkable for its very dwarf, bushy habit of growth. The majority of species vary in individuals, and this is no exception to the rule, the poorer varieties being far inferior to the type, which is very free-blooming, the flowers pale purple. One named variety is distinct, but not a good garden-plant; this is *A. nanus*, in allusion to its very dwarf stature. *A. Amellus*, another European species, is one of the most showy Sep-

tember flowers. This presents very different characters to *A. acris*, the flowers deep purple-lilac, large, and produced in great profusion on the spreading shoots. There are several varieties, but it appears to me a matter of mere nomenclature, as all are very much alike. In the list referred to in the *Society's Journal*, *A. lavis* occupies a large space, and many of its varieties are beautiful. All those described and marked with *** are worth growing, and as the heights are given of each kind, it is easy to make a good selection. There is great charm in the more graceful forms, the shoots slender, and spreading about, quite different to the bushy and compact varieties. The flowers, though not differing greatly in colour, are of diverse shapes, but all the kinds bloom freely. It is interesting to see that the later-blooming *A. novæ-angliæ* has few forms; but nearly thirty varieties of *A. novi-belgii* are described, the plants varying in height from 2½ to 6 feet. The nomenclature of the *Aster* is much confused in ordinary gardens, and, as a rule, a very poor class of varieties is grown, very different to the beautiful things at Chiswick, which should be in all nurserymen's lists. They are getting better known than was previously the case, but there are many more kinds that should be planted in quantity. When not bunched together in borders, the *Aster* is one of the most lovely of garden flowers, and is in perfection at a season when shooting parties assemble at country-houses. It is then that the gardener is often puzzled to make a show of colour; but this may be easily accomplished by planting such showy kinds as *A. acris*, *A. Amellus*, and a good selection of the many varieties in the Chiswick gardens. As the list referred to in the *Journal* is so complete, and the outcome of careful selection and trial, it should be consulted without fear of getting poor-coloured or useless forms. *V.*

TOURING IN KUMAON.

(Continued from p. 289.)

KUBCOTE.—Starting leisurely the next morning, we came to the village of Naia Thull, where is a good deal of cultivation, but very little going on at this particular time of the year. Pursuing our way, we soon came to the Naia Thull Bridge, rather a large and nice suspension bridge. Just opposite is a handsome Hindoo Temple, built by one of the old Rajas of Kumaon; it looks a very striking object in this outlandish place. Now from this point we again struck due north. Much as we left the Sargu, we also leave the Rangunga, and not without some regret, as this is really the turning-point, from which every mile will take us nearer the starting-point. From the bridge the road leads for some 12 miles through an enormous Pine-forest, that must contain millions of trees. In due course we get clear of the Pine-forest, and encounter some heavy Indian Oak, which is a pretty good sign that we are getting up to something like 5000 or 6000 feet elevation. Soon some Tea is sighted, and we know we must be very near the Berenag Tea Company's estates.

Indian Tea.—In the course of an hour I found out the assistant-manager, and was not sorry to have an hour's talk with some one who could speak English. After a rest and some refreshment, I went down to the Tea factory and saw some 80,000 lb. of green Tea being got ready for export to Afghanistan in one consignment. Quite a small army of men are here sifting, fanning, sorting, sizing, and so on.

The next morning I went on a visit to Mr. J. G. Bellairs' place at Chowkooree, some 7 miles distant from Berenag. I found the enterprising proprietor willing to show me the ins and outs of this remarkable place; it is a large estate of nearly 2000 acres, very pleasantly situated, with very gentle gradients for Kumaon; indeed, acres of the estate are all but level. The elevation is about 6000 feet, and open on all sides to the sun. Some of the best Tea plantations in Kumaon are to be found here. In addition, I found an English bull, many pedigree fowls, Berkshire pigs, and plenty of cattle. Now, when it is remembered that all these things came from England, and that the place is 100 miles from any rail-

way station, and when the enormous difficulties of transit in Kumaon are taken into consideration, as well as the fact that there are only coolies to help you in any way, it reflects the greatest credit on the owner of Chowkooree. The place is magnificently timbered, and full of very fine Mistletoe. Some of the English farmers could take valuable lessons from the Kumaon planters; many of their difficulties are nothing to what the planters put up with cheerfully. A very magnificent view of the snow mountains is obtainable at Chowkooree, and after all a reasonably distant view is the best. Several very pleasant days were spent here, but as my time was drawing to a close, I left for Almora (via the Daulchine Road), some 50 miles distant. Some 20 miles from Berenag, I camped on the road-side near a village where were some very fine trees of the *Bassia butyracea*; at this time they were a mass of bloom, and thousands of bees were busy, and also numerous birds and insects—in fact, these noble trees seem to afford endless food for all the insects in the neighbourhood.

The next day I reached Daulchine, 7 miles of the road leading through another fine Pine-forest, and thence early next morning to Almora, and the following day to Ramghur, and thus my month's leave was at an end.

Perhaps the matter for greatest regret is the very few plants that were in bloom in November. The best season for travelling in Kumaon, from a gardening or botanical point of view, is no doubt during the monsoon season, then innumerable *Begonias*, *Caladiums*, *Achimenes*, *Acacias*, and a profusion of Ferns, *Selaginellas*, and numerous other plants, are in the greatest luxuriance; but then the monsoon season is not a joke in India, particularly in Kumaon. You might start on a tour in fairly good weather, but it is much more probable that, just after you have started, it begins to rain, and continues to do so in torrents for three to five days. This happened three years ago, during which time no fewer than 26 inches of water were registered; and I have known the thermometer to fall suddenly from 80° to 50° within two hours. For this and sundry other reasons, touring in the monsoons is decidedly risky.

In conclusion, I think some of your well-to-do readers should come and see Kumaon in the months of October and November. It is then, as a rule, matchless for climate, and the people are very simple, and absolutely safe. It would have been an easy matter for my men or some villagers to have killed me, or to have robbed me, times out of number, but no such thought ever entered their heads, and Kumaon may be said in every way a delightful place for touring in the months specified. *F. W. Seers, Ramghur, June 25, 1893.*

NURSERY NOTES.

MESSRS. W. BALCHIN & SONS, HASSOCKS, SUSSEX.

Known far and wide as the best cultivators of that lovely blue greenhouse plant *Leschenaultia biloba*, which is so much admired every year at our summer exhibitions, this firm are working up a stock of some of the pretty and compact *Boronias* and other greenhouse plants, which aforetime have been prime favourites, and which now again seem coming into well-deserved favour, for not only are they neat in habit and profuse flowerers, but last in bloom for a considerable period of time. Of *Leschenaultia biloba* we found a stock of over 1000 plants all in perfect health, and it was easy to imagine what a rich display will be afforded when the plants flower. Of the pretty *Boronia serrulata* a stock of about 500 plants was noted; while of *B. megastigma*, that delightfully Violet-scented species, and other *Boronias*, *Tremandra verticillata*, and various favourite New Holland plants, there are proportionate numbers. Here too in the greenhouses, *Acacia cordata*, by a little management is made to form compact plants, and *A. armata* and other species of *Acacia* are well done. But the chief efforts of the establishment are directed to plants which furnish cut flowers, and are desirable for decoration in the several branch shops

in Brighton, which are among the best of their kind in the country. Hence in making the tour of the nurseries one observes showy, useful subjects grown in large numbers, and these predominate, and bespeak the skill of Mr. Richardson, the foreman, his success with Tuberoses, for instance, being quite remarkable. The Pearl Tuberosa is the variety favoured, and those of it now in flower do not appear to have failed in any case to form flower-spikes, which it may be said are self-supporting; being as thick at the base as one's finger, and bear from twenty to thirty very large fine flowers. The foreman told us that he has had plants with as many as forty on one spike, but those that we noticed were certainly the best we have seen. A houseful of Roses, *Maréchal Niel* and *Niphetos*, growing in pots, come next, then follow houses of *Erica hyemalis*, *Cyclamen persicum*, one of *Pelargoniums*, among which *Raspail* and *M. Bruant* are favourites; houses of Ferns, and Orchids which are found useful for cutting, and which are well grown, although nothing like a collection of Orchids is attempted. The *Dendrobium nobile* are good, the batch of *Cypripedium* insigne said to be one of the most useful for cutting; the *Lælia anceps* sending up spikes freely; *Cattleya Leopoldii* and other *Cattleyas* in flower, and so also *Sobralia macrantha* and a few others. Another house contained flowering plants of *Bouvardias*, *Heliotropes*, a fine lot of *Poinsettias*, and some plants of a superb strain of *Celosia pyramidalis*, each plant being compact, perfectly pyramidal, as broad as high, and of a bright dark crimson. Next we came to a small house with a large case of well-grown Filmy Ferns—a grand *Todea superba* occupying the centre; on the roof was a plant of *Lapageria alba*, well bloomed; and then came houses of Palms and other foliage plants, very suitable for the work for which they are required, the *Kentias* evidently being the favourites.

Among other good batches of plants we found a pitful of the old *Echeveria retusa*, which is said to be very durable for indoor decoration; a fine berried lot of plants of *Solanum capsicastrum*; many of *Begonias*; a considerable quantity of *Lilium Harrisii*, and, still outside, a large number of well-grown *Chrysanthemum Avalanche*, and other varieties.

In the outside quarters, quantities of compact-growing shrubs, *Pyrethrum roseum*, perennial *Helianthus*, *Anemone japonica*, and hardy flowers of a similar character for furnishing cut flowers were observed, while each side of the main walk is planted with a fine selection of flowering and other shrubs, besides Conifers; the large standards of the variegated *Acer negundo* and Portugal Laurels form a fine feature.

LOWTHER CASTLE.

A FEW miles from Ullswater, and commanding magnificent views of the Cumberland Mountains across the valley of the Lowther, is the stately pile of Lowther Castle. It is nearly 800 feet above sea-level, and exposed to very severe storms, which tax the hardiness of the trees and plants of the fine woods and gardens. The soil is loam and clay, resting upon limestone; where the shelter from south-west winds is efficient, we find that Conifers flourish well. The celebrated Dragon Walk is a dark avenue of ancient English Yews, whose fluted stems and fantastically interlaced branches give quite a weird aspect to the quiet walk leading to the Rose-garden, which the gardener, Mr. Clarke, has been arranging. This Rose garden is an oblong space surrounded on all sides by lofty deciduous and coniferous trees, with a large rustic summer-house on one side. At each corner is a "bell-tent" of Roses climbing up chains, and each tent contains a seat; and a "marquee" of climbing Roses is *vis-à-vis* with the summer-house. The fine beds of dwarf Roses are tastefully relieved by masses of herbaceous plants, festoons of climbing Roses; *Clematis* and *Ampelopsis* surround the whole.

The Conifers which succeed well on the limestone and in this cold situation are *Pseudotsuga Douglasii*, of which some fine examples are to be found; *Abies*

Pinsapo, *A. Engelmanni* [probably *pungens*] *glauca*, *A. cephalonica*, *A. lasiocarpa* [probably *A. Lowiana*], and many *Cupressus*. Sometimes, however, the snow is troublesome in breaking the branches. Scotch Firs make excellent growth. There is a good avenue of Beech trees. The soil is unsuitable for *Rhododendrons*, *Heaths*, and other *Ericaceæ*, so that it is necessary to bring peat from Shapfells. In this way a pretty alpine garden has been formed, through which a stream runs, fed by the fountains which play in the Rose garden.

The castle is surrounded on all sides by brilliant flower-beds; grand clumps of *Humea elegans* associated with crimson and scarlet *Begonias*; the bright yellow *Calceolaria amplexicaulis*, with dark *Perilla*; beds of large standard Ayrshire Roses, and clumps of *Clematis*, together with strong herbaceous plants, make a grand show.

A winter garden has recently been erected on the south side; the walls are covered with Ferns, *Selaginellas*, and *Begonias*; large hanging baskets are suspended from the roof, and groups of Palms arranged on the floor, which is paved with parquet flooring, the heating-pipes being concealed by grids over which the seats and lounges are placed.

We are not going into a detailed description of the greenhouses, Peach-house, and vineries. The greater part of the fruit and flowers is sent away to London, or wherever Lord Lonsdale may be living. Specially-made boxes, about 6 inches deep, with twelve pigeon-holes, are used for Peaches; each Peach is wrapped in tissue-paper, with sufficient paper left to screw up to carry it, and it is then placed in cotton-wool in one of the compartments of the box. Each box thus carries one dozen Peaches; the lids are hinged on, and secured by cords. Similar care is used in packing cut flowers. Carnations are here a favourite flower for cutting, and Mr. Clarke has a new one called *Countess of Lonsdale*; it will be shortly sent into the market. It is a full flower, with smooth shell-shaped petals of bright scarlet-crimson, slightly scented, and very hardy. Several houses are devoted to *Gardenias*, the favourite being *G. Fortunei*; every day throughout the year a button-hole flower of *Gardenia* is despatched to Lord Lonsdale.

The gardens are surrounded by a splendid park, where roe and fallow deer, also Galloway cattle, feed. Many alterations are now in progress, and we hope to make further notes in the near future. *F. V. D.*

THE WOOD OF THE AMERICAN TURPENTINE TREE.

THE value of the American long-leaved Pine (*Pinus australis*) depends chiefly on its turpentine and timber, but the value of the latter, as set forth in a report to the Foreign Office, by the Consul at Pensacola, would seem to be so far in excess of any other timber, that it is worth recording. In textile strength it is stated to approach and perhaps surpass cast iron. In cross-breaking strength it rivals the Oak, requiring it is believed 10,000 lb. pressure per square inch to break it. In stiffness it is superior to Oak wood by 50 to 100 per cent. It is best adapted and much used for the construction of heavy work in ship-building; the inside and outside planking of vessels, taking the deals and planks of the best quality. For house-building it is used almost entirely in these parts, and in buildings for railroads, railroad cross-ties, viaducts, and trestles, this wood is foremost. The finer grades and the curly wood are very much used for the nicer and unpainted wood in the best dwellings. The hardness of this wood especially fits it for planks and flooring. The finer grades of curly Pine are used for the manufacture of furniture, and it is said that for bedsteads it is admirably adapted, as the resinous wood is a preventive to inroads of insects and such pests. The resinous products of Pine wood supply many parts of the world with pitch, resin, and turpentine, and contrary to opinions formerly held in this respect, it is said that the tapping of the Pine tree for turpentine strengthens instead of weakens the wood.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

HINTS ON WORK IN GENERAL.—The abnormally small rainfall during August experienced in south-east England has rendered the ground so dry that vegetable growth is at a stand-still; green vegetables are very scarce. Late sowings of dwarf Beans have, however, held their own, and are yielding excellent pods. In no recent years have the effects following high cultivation been so apparent as the present, and where this has prevailed, the crops generally are excellent, especially if the water-supply is a good one, which in our part is not the case in the majority of gardens. Small seedlings severely suffered, and unless rain should fall in considerable quantity shortly, Cabbages will be very late.

SALADS.—There has been difficulty in obtaining crisp Lettuces, but I have found that Sutton's Mammoth withstood the drought better than any other, and kept crisp and good long after others had bolted. Lettuces like a cool rich soil in summer, and if there are means of flooding the ground occasionally, little fear of a scarcity need be felt. It is not yet too late to make sowings of Lettuces for use in the spring, but in northern counties a cold frame should be utilised; plants in the seed-bed large enough to handle should be transplanted, and such will better withstand frost than such as are drawn up tenderly. Radishes should now be sown on a warm border; sow thinly, or too much top-growth will be made. Endive should be blanched as required for use, and it will be found a good substitute for Lettuce, where the latter is not plentiful; only a few heads should be blanched at a time, as Endive soon decays after blanching is complete. Mustard and Cress may still be sown in the open, but handlights or a frame should be put over the seeds. Corn salad sown last month will now be large enough for thinning, and another sowing may be made. American Cress may be sown for spring consumption.

TOMATOS.—See that all fruit is gathered as it approaches maturity, and keep all growths pinched off.

CELERY.—Where earthing may have been postponed on account of the dryness of the soil, the ridges should be heavily watered, after being loosened with a fork, and before the soil gets dry some of it should be put to the plants. Do not earth above the heart leaves, or a check to growth will be given, besides deforming the inner stalks. Make sowings in pans of Celery to be used for flavouring, and if the seeds do not germinate freely, place on a slight hot-bed, and allow good ventilation after germination.

CARDOONS.—Continue to blanch these plants, and be sure that the roots are thoroughly moistened before doing so; at the same time take care to prevent water getting to the hearts, or decay soon follows.

CAULIFLOWERS.—Where no sowing has been made, choose a warm situation, or a cold frame, and sow Sutton's Mammoth, or Autumn Giant, which will follow the early kinds that are sown in the spring, and afford fine heads during June and July. Those planted in the open ground will be benefited by a dressing of nitrate of soda applied in showery weather.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

THE MEXICAN ORCHIDS.—*Lælia anceps*, *L. autumnalis*, *L. alba* should now be showing their flower-spikes, and require to be afforded water freely till such time as the new growths are finished; the air of the house should be also kept in a moist state, and it is good practice to syringe freely amongst the pots in which they are growing. An abundant bloom may be expected from these *Lælias* this year and next, the warm summer having benefited the plants greatly. Now that the spikes have got away from the leaves, is a suitable time to sponge the plants even should no insects be present; the summer dust will require to be cleaned off the leaves—make use of soft-soap and soft water for this job. Cockroaches sometimes devour the young flower-spikes of *Lælias*, and should be well sought for. *Odontoglossum citrosorum* we cultivate in the Mexican-house, and the plants being in full growth, will take copious supplies of water if they are in a healthy condition.

CATTLEYA LABIATAVERA.—The tropical summer has suited the above species, as is evident in the longer and stouter pseudobulbs; even the well-known autumn-flowering *C. labiata* has made pseudobulbs equal to those on recently-imported plants. As all Orchid-growers know, newly-imported Cattleyas do well for perhaps half-a-dozen years, but after that time, they try the skill of the best cultivators to keep them in vigour, especially if they have flowered freely. Our Cattleyas get weaker after that time has elapsed, more especially specimens, say, from 2 to 3 feet across, growing in pots of from 18 inches to 2 feet in diameter. It may be that in these large pots or pans the roots of the new growths in the centre of the plant fail to reach the sides of the pot, but penetrate the mass of peat and moss, with the consequence that they die off, and weaken the growths in the middle of the plant; and this goes on every year, with injurious effects. A Cattleya may be grown well for years in pots of from 6 inches to 1 foot in diameter, without fear of their getting out of condition. This may be one reason why one finds the autumn-flowering *C. labiata* in such good condition to-day, after perhaps 20 years of cultivation. *C. labiata vera*, after growth is complete, should be hardened off by having all possible sunlight it is safe to afford, but being sure that there are no flaws in the glass to cause burning. Carefully water the plants, or they may start to grow anew, which would spoil their flowering considerably. Afford less water at the roots and moisture in the air, with fresh air admitted day and night whilst the outside temperature admits of it.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

LIFTING AND REPLANTING PEACH TREES.—Young vigorous trees of Peaches and Nectarines are brought into bearing, and can also be maintained in a fruitful condition, by adopting a method of annual or biennial lifting and replanting. [Not always necessary in suitable soils and certain localities. Ed.] This should usually commence two years after planting, and where trees have been properly planted at first, received due attention with regard to root-watering, and the leaves kept free from red-spider and aphides, which appear early in the season, they generally make a free growth the second year. Lifting and replanting such trees early in the season afford a check to further growth, and assist the ripening of the wood. Should the soil of the border be dry, a good watering should be afforded, and the lifting postponed for two or three days, that is, till the soil has become workable again. A wheel-barrow load of old mortar and wood ashes in about equal parts, well mixed together, should be given to each tree-station to keep the soil open. In the case of older trees and exhausted soil, the whole of the old soil about the roots should be dug out, and the drainage made good; and before the old soil is returned, fresh loam, old mortar or chalk, and burnt refuse should be added to it. Replanting should always be quickly performed, the roots meanwhile being covered over with wet mats or litter. Long or injured roots should be cut back before replanting, and the trees syringed daily for a time if the weather prove dry. In any case afford a heavy watering to settle the soil about the roots, whether rain fall or not, and apply a mulching of spent hot-bed manure.

GATHERING FRUIT.—It is a too common practice to gather Apples and Pears indiscriminately in the belief that the whole of the crop is ripe because a few may have fallen on account of the dryness of the soil. Late Pears and Apples are better left on the trees, even if a part of the crop be lost by falling from the tree or be eaten by wasps, which will not trouble us much longer. Heavy root-waterings will aid in retaining late Apples and Pears on the trees, and do not rely on the rain to moisten the soil deeply. Unless some such means are taken to prevent late Pears from ripening prematurely, there will be a scarcity after the month of November is past. Doyenné du Comice, Winter Nellis, Glou Morceau, Josephine de Malines, Bergamotte d'Esperen, Easter Beurré, and Beurré Rance should remain ungathered for at least another month. The same applies to the following varieties of Apples:—Cox's Orange, Blenheim, and Cocker's Pippin, Adams' and Claygate Pearmain, Northern Greening, Norfolk Bearer, Annie Elizabeth, and Wellington, all of which will continue to grow for a few weeks longer if afforded heavy root-waterings. The gathering of all mid-season sorts of Apples and Pears demands daily attention, and more than usual care will be

necessary this season to examine every fruit before storing them away, if it be pecked by the birds or injured by wasps.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

RICHARDIA ÆTHIOPICA.—These plants should be taken indoors before there is any danger from frost, and those that were planted-out potted-up forthwith in loam of good quality and leaf-mould, ample drainage being afforded. The best results are usually obtained when the plants are kept in pots, provided they are well attended to.

BOUVARDIAS which were planted in the open should also be taken up carefully and potted, using plenty of drainage in the pots. After affording the plants a thorough watering, place them in a cool-house, using no fireheat for a time. A slight amount of shade during the brighter part of the day, and a damping with a fine rose-pot or syringe, keeping rather close for a time, will greatly benefit the plants. Much care should be taken not to break the roots more than can be helped, and do not under-pot large plants. After the lapse of ten days, more air may be gradually afforded, and a temperature of about 50° by night, 55° to 65° by day, will suit them.

SCENTED PELARGONIUMS.—All plants in pots should be taken indoors as soon as the nights become cold; for although they will bear a few degrees of frost without injury, a continuance of cold exposure changes the leaves to a yellow tint, and they are then useless for decoration. These species are useful for winter bouquet-work, but they must for this purpose be kept in a healthy state. I find that these plants and Richardias do well together in the same house, where a temperature of about 50° by night, and 55° to 60° by day, is maintained, and abundance of air given. Callas, if well grown in pots during the summer, often bloom well in the above temperature during the winter; the foliage keeps strong, and the plants are more suitable than weak-drawn ones for standing in rooms when showing flower; they are quickly pushed out by being placed in a warmer house. The Pelargoniums require air night and day for a time, or their foliage will drop off. A watering of clear soot-water or liquid-manure once a week will do them good. Fumigate the plants with tobacco, or some good preparation of it, or syringe with Quassia-water should green-fly be troublesome.

CHRYSANTHEMUMS.—The varieties Mrs. Rundle, Glenny, Dixon, and Donna Maria, now just coming into flower, should be placed in a cool-house and neatly trained, if grown for decorative or cutting purposes. They can be formed into nice pyramidal plants if one strong stake be put in the centre of the pot, and each shoot tied up with a piece of thin rolled raffia. Only one flower should be left at the end of each shoot. Madame Desgranges, now in flower, should be protected from heavy rains and wind.

THE FLOWER GARDEN.

By T. H. CRASP.

PREPARATIONS FOR THE SPRING.—The present is a good time to settle the method of the planting of spring and early summer bedding plants, so that everything may be put in readiness to replant the beds on the removal of the summer occupants. Bare beds are not pleasant objects, hence the desire to make them somewhat attractive with low-growing shrubs, and such hardy plants as *Silene pendula*, *Arabis*, *Myosotis*, *Hepatica*, *Phlox verna*, *Anemone*, *Wallflower*, *Viola*, *Aubrietia*, as well as Dutch and other bulbs. These plants seem to have, after a few seasons, a kind of monotony that is not pleasing; but this may be remedied in great measure by the free use of hardy annuals, which survive an ordinary winter. The following is a list of the more trustworthy and useful of these:—*Nemophila insignis*, *N. i. alba*, *Limnanthes Douglasii*, *Collinsia verna*, *C. bicolor*, *C. candidissima*, *Viscaria* in variety, *Bartonia aurea*, and various kinds of *Candytufts*. If the beds are vacant, or nearly so, the seed may be sown where the plants are to remain, and it is best so, sowing the seed thinly on a fine-raked surface, affording the bed a coating of fine soil. The seedlings in the beds must be guarded from slugs by occasional dressings of lime or soot in a dry state, and thinned out to 3 inches apart.

If the seeds cannot be sown where they are to remain, sow them in rows in a good open situation, 3 inches apart, using the same precautions as previously mentioned. When the seedlings are large enough to be handled, they should be lifted carefully, and pricked out 2 or 3 inches apart, being careful not to bury them below the seed leaves, whence they should be lifted, and carefully planted in their permanent quarters any time from October to March, choosing mild weather for the work. These annuals can also be used in window-boxes along with bulbs, &c., and if arranged nicely, they make an effective display at the end of the month of April and the following month. At the present season, *Aucuba*, *Holly*, *Rhododendrons*, and most *Conifers*, may be moved with safety, and if the time will permit, alterations in shrubberies and pleasure-grounds may be undertaken and carried out with greater facility than in the winter or spring.

WINDOW-BOXES.—The season has been a very trying one for plants in window-boxes and other exposed places, and it will be generally found advisable to discard most of the old plants, and re-fill the boxes with plants that will be effective till the frosty weather begins. The dwarf variety of *Asters* are well suited for this purpose, as they feel little check from removal if it be carefully done, and afterwards the boxes may be re-filled with dwarf early-flowering *Chrysanthemums*, choosing such varieties as Madame Desgranges, G. Wermig, Amy Russell, &c., thus adding an extra few weeks of brightness to our window arrangements.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES.—Permanent fruit-bearing Vines, whether young or old, should now have every shoot well-ripened to the very ends, nothing being of a green colour but the leaves, and these should be in good condition, strong on late Vines, and remain on the wood till the end of the year. Where ripening is not completed, every assistance should be afforded the Vines by heat and air to mature the wood which is to supply next year's crop. If mulching is still over the border, or the surface-soil close and impervious to the air, the whole of the upper crust should be removed, without injuring any of the roots. When roots are in good condition, there is little cause for anxiety by reason of unripened Vines. When forcing is resumed, the partially-reduced border can be raised to the desired level by adding fresh healthy soil. The ripening of Vines is often retarded by placing plants in the structures necessitating the use of water, and preventing a free current of air from passing through the house. Inside borders, if shallow, should be examined, to make sure that the roots are not suffering from dryness. Young Vines should not be encouraged to grow too late, but aided by use of fire-heat to ripen the rods. Supernumerary Vines should be closely stopped at the length of rods which are to remain for fruiting; any green tops should be removed, and sublaterals cut well back. No liquid manure should be afforded Vines after this date, and should mildew appear, syringe the Vines with sulphur and water in the proportion of two handfuls of the former to 3 gallons of water. If Grapes are ripe, remove them, and bottle the bunches before using the sulphur. Fruit affected with mildew can be fumigated with sulphur in a close room.

FIGS.—Those which are grown in pots for early forcing should now be resting, protecting them meanwhile from heavy rains, which will allow the foliage to ripen naturally. If the pots are plunged in coal-ashes in the full sunshine, the roots will be saved from becoming unduly dry, while the wood and foliage, now dropping off, are benefited by the autumn breezes. If any bushes have crowded heads, thinning of the shoots should be done, removing weakly shoots, and leaving only those which are firm and likely to be fruitful. Trees trained to walls or in other permanent positions should have the same kind of useless wood removed, and all the roots lifted or pruned, unless the trees are bearing late crops of ripening fruit. Dryness at the roots (not sufficient to cause suffering) will induce the due ripening of the fruit and maturation of growth. For early forcing, or indeed for any purpose, there are no varieties which surpass Brown Turkey, St. John's, and White Marseilles, Grosse Verte, and Ruby Castle for certain and abundant cropping.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	SEPT. 18	Dutch Bulbs, at Protheroe & Morris' Rooms.
		Plants from Belgium, at Protheroe & Morris' Rooms.
TUESDAY	SEPT. 19	Greenhouse Plants, Piping, &c., at the Chiswick Nursery, Turnham Green, by Protheroe & Morris.
		Great Importations of Dutch Bulbs, at Stevens' Rooms.
WEDNESDAY,	SEPT. 20	Orchids, at Protheroe & Morris' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	SEPT. 21	Greenhouse Plants, at the Moat Nursery, East Grinstead, by order of Mr. A. Clark, by Protheroe & Morris.
		Great Importations of Dutch Bulbs, at Stevens' Rooms.
FRIDAY,	SEPT. 22	Dutch Bulbs, at Protheroe & Morris' Rooms.
		Great Clearance Sale of Plants, at the Osborn Nursery, Sunbury, by order of Trustees in Bankruptcy, re J. Gough, by Protheroe & Morris.
SATURDAY,	SEPT. 23	Clearance Sale of Stove and Greenhouse Plants, at "Oldfield," Bickley, by order of T. A. Philbrick, Esq., Q.C., by Protheroe & Morris.
		Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—56°·9.

Mixed Plantations. No one paying attention to the composition of woods and plantations throughout the country, can fail to be struck with the difference existing between those planted in the last fifty years, and older woods of the last or the beginning of the present century. In the latter we rarely find hardwoods and Conifers intermixed to any great extent, while recently-planted woods contain a mixture of a dozen or even more different species. Records of ordinary estate work are rather rare, and it is not easy to obtain accurate details of the system of planting adopted more than a hundred years back; but it may be reasonably assumed that the mixed plantation of the present day had a limited existence. The comparative scarcity of many of our now common Conifers may have had something to do with this, but one might almost suspect that our ancestors possessed a more correct taste and knowledge of harmony than ourselves. There is little doubt that most of our old woods

were formed under the direct supervision of the proprietor, who would naturally combine due appreciation of the beauties of indigenous trees with the depth of his own pocket. Introductions which we now look upon as common forest trees, would then be confined to the arboretum, their acquisition costly and their hardiness doubtful. The list of trees from which the old planter could select, would now be considered a limited one, and perhaps it was fortunately so. Those grand old clumps of Oaks, Beeches, Elms, &c., which throw such a glamour over the ancestral seats of this country, might not now be in existence had our predecessors been in a position to plant exotics in place of indigenous trees.

The comparative sylvicultural advantages of mixed and pure woods is a wide subject, and cannot be discussed here. But does the æsthetic side of the question demand no attention? Trees are long-lived, but not immortal; and when our present veterans of the park and wood succumb to storms and disease, we should be provided with successors.

As planting is, and probably always will be, popular with landed proprietors, we need have no fear that a lack of trees or woods will ever occur; but it is questionable whether the woods of the future will possess the beauties of the present ones. Each species has a certain well-defined character of its own, which cannot be imitated by any other, and this character is still retained when individuals are merged into a solid mass. For instance, the Scots Fir and the Beech present two different types of forest scenery when unmixed, but let the two be blended together and their respective characters are lost, although the mixture may still be agreeable to the unexact observer.

We are apt to overlook the fact that variety is not obtained by a formal and regular mixing of so many different species in mathematical order; for this simply amounts to the constant recurrence of an indefinite number of groups arranged on the same pattern, like the design for a carpet. In early life such a plantation may be preferable to an unmixed mass of foliage with little variation of shade or form, but later on its heterogeneous composition is not apt to excite admiration. A judiciously-planted clump of a species other than the prevailing one, showing alterations of the surface and character of the soil, affords far more variety than half-a-dozen species when uniformly mixed throughout a plantation.

Nature invariably forms her forests on such a group system, and woods cannot present too natural an appearance. By such a method a definite character is given them, and they become something more than an incongruous mass of stem and foliage possessing no individuality of character. The conformity of the surface, whether hilly, undulating, or flat, is usually accompanied by an indigenous forest vegetation, which is in close sympathy with its surroundings. It does not follow, however, that no species but those Nature has provided are to be tolerated; but it is probable that the planter who produces the best effects on the landscape is he who confines himself to native trees in forming the groundwork of his plantation, or at any rate, allows one species to predominate, using others with due regard to their surroundings.

The subject is rather more suitable for the landscape gardener than the ordinary forester; but looked at from any point of view, the general conclusions arrived at will be pretty much the same. A. C. F.

SPIRÆA ARUNCUS.—*Spiræa Aruncus* is at once one of the most stately and one of the most elegant of herbaceous perennials. Its habit confers stateliness, its foliage and inflorescence endow it with elegance. It is a very old inhabitant of our gardens, but it is not often we see so fine a specimen as that which we are now privileged to illustrate through the kindness of Mr. WILLIAM MARSHALL, the genial and business-like Chairman of the Floral Committee and of the Committee of the Gardeners' Orphan Fund. The plant in question threw up no fewer than fifty-six of its feathery panicles of whitish or cream-coloured flowers. See Supplementary Illustration in this issue.

BOTANICAL MAGAZINE.—The plants figured in the September number are:—

Bauhinia variegata var. *candida*, t. 7312.—A very striking species, with its curiously-bilobed leaves and erect panicles of large white flowers. Kew.

Armeria latifolia, t. 7313.—A Portuguese species of tufted habit, with linear oblanceolate leaves, and stalked head of pink flowers.

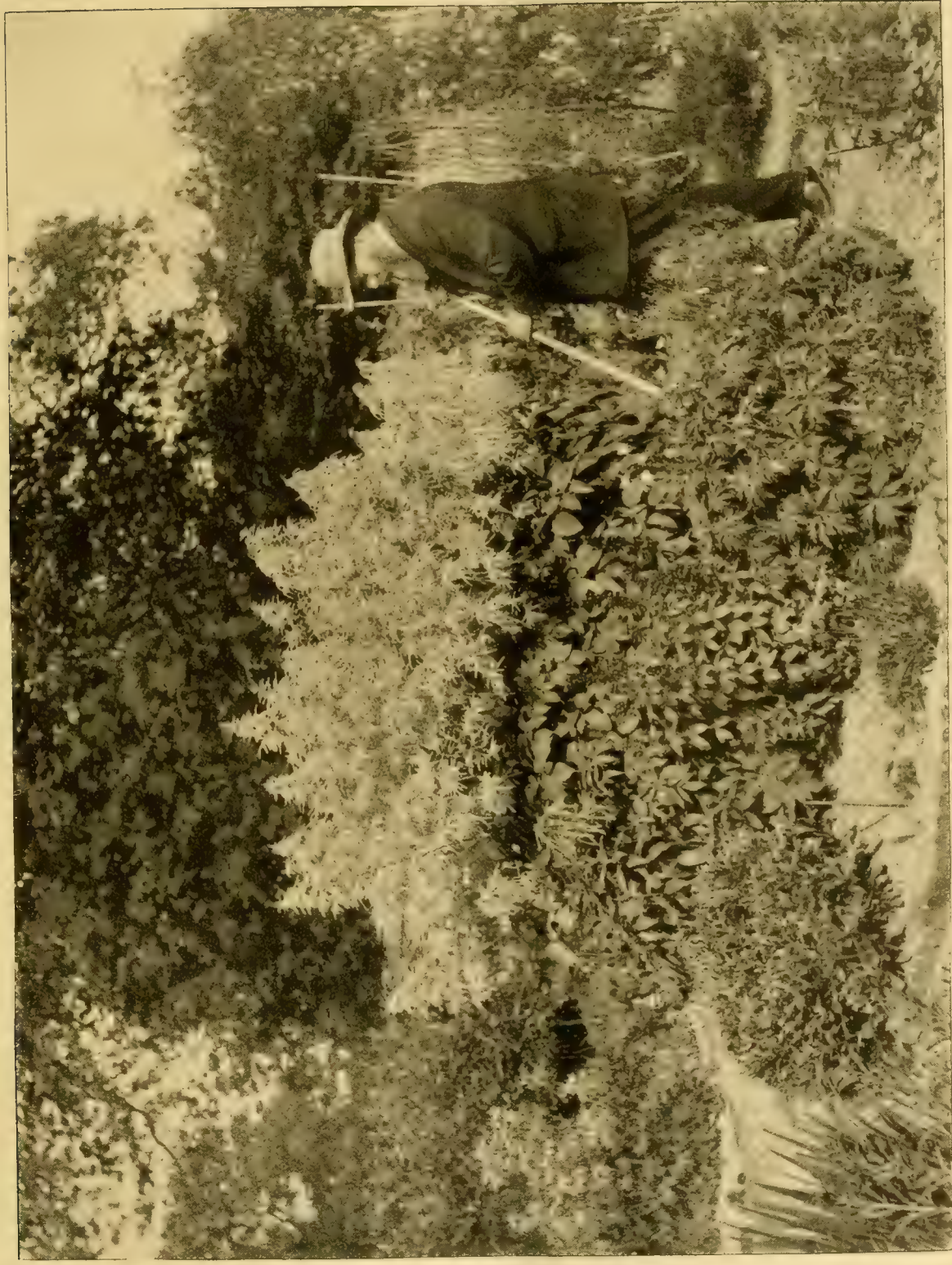
Megaclinium minutum, t. 7314.—A curious little Orchid from Sierra Leone, with oblong pseudobulbs, each with a pair of oblong leaves. The flattened rachis springs from the base of the pseudobulb, and bears two rows of small orange-brown flowers. Kew.

Saxifraga media, t. 7315.—A dwarf species, with dense rosettes of obovate spatulate glaucous leaves, from the centre of which the flower-stem rises, with scattered linear leaves and racemes of small gland-covered red flowers. Pyrenees.

Schizocodon soldanelloides.—The curious and pretty Japanese plant figured in our volume for this year, p. 415, fig. 59.

"**Kew Bulletin.**"—An announcement in the last number states that papers on particular subjects will be brought together to form separate volumes. In this way a volume on "Vegetable Fibres" is now in course of preparation. This is good hearing, as the *Kew Bulletin* is rendering excellent service to economic botany, whilst the miscellaneous notes showing what is going on at Kew are very interesting.

THREE NEW SONERILAS.—Just now the Sonerilas are looking particularly bright, their gay foliage making them most useful plants for the warm or temperate-house. M. MARCHAND, one of the managers of the Ghent firm of VAN HOUTTE, known for his successful hybridisations of Bertolonia and of Sonerila, has succeeded in raising these plants with wonderfully broad leaves. In *S. Madame Léon Say* the blade measures about 6½ inches long by 4½ inches broad. The plant is dwarf, scarcely 5 inches high, and with fourteen well-developed leaves, which make the entire plant about 16½ inches in diameter. This acquisition is from *Souvenir de Madame Van Houtte* × *orientalis punctata*; it has the characteristics of the mother, and the vigour of the father. The handsome foliage bends gracefully back, and is speckled with innumerable silvery dots, the largest in the centre of the blade, and others, gradually diminishing in size, towards the edges, along which are the smallest of all in close rows. These dots have more space between them than have those of *S. Souvenir de Madame Van Houtte*, consequently the leaf is prettier than that of the latter. *S. Madame Blommaert* is as sturdy as the above-described species; the foliage is rather less wide, but the ground-colour is very dark bronze-green, verging upon black; the little round speckles are further apart, and all quite distinct; the branches and petioles are also of a much deeper red—the whole plant, in fact, is dull, showing traces of *S. orientalis*, and a scheme of colouring much deeper than that of the variety *punctata*. *S. Prof. C. de Boscchère* is different from other Sonerilas, and will be much valued. The well-marked veins are surrounded by a clear metallic green stripe, numerous little dots of the same shade on a dark green ground are grouped in horizontal bands, so that the foliage is streaked. The base of the veins and the toothed edges are claret-coloured; the under-side of the leaves is also pretty; the veins are claret-coloured, the stripes and



SPIRÆA ARUNCUS IN THE GARDEN OF W. MARSHALL, ESQ.

tips clear green, while the rest is deep red. The plant is dwarf, and from the same parents as is S. Madame Léon Say. *Ch. De Bosschère*.

GHEENT HORTICULTURAL SOCIETY.—On the occasion of the monthly meeting on Saturday, September 9, Certificates of Merit were awarded to M. G. Gyselynk for a Rhododendron seedling with leaves variegated with yellow; also to *Dracæna indivisa foliis-argenteo-variegatis*, from the same exhibitor; to l'Etablissement Horticole, Ste. Dorothee, for *Æchmea Weilbachi foliis variegatis*; to M. Ed. van Coppenolle, for *Dracæna van Coppenolleana*, a seedling of *D. australis*, raised in 1892; to MM. Duriez Frères, for *Adiantum cuneatum foliis variegatis*; to M. H. Schmitz, for *Encholirion* species, from Brazil; to M. Jules Hye, for *Miltonia Moreliana superba*; for *Cypripedium triumphans* (*Enanthum superbum* × *Salleri Hyeanum*); for *C. giganteum* (Harrisianum × *Salleri Hyeanum*); to M. Henno Delbosse of Tournai, for a collection of *Gladiolus*; to M. Louis van Houtte, of the Société Anonyme Horticole, for *Sonerila Madame Léon Say*, for S. Madame Blommaert and for S. Professor Charles De Bosschère.

THE ARAUCARIA AT KEW.—From the *Kew Bulletin* we learn that sections of the trunk of this famous tree have been placed in the Museum. The trunk measures about 30 feet in height, and is 1 foot 4 inches in diameter at the base. Nothing is said about the transverse section, but a careful study of the rate of growth in different years would have exceptional value from the known history of the tree from infancy, till its premature decay a year or two ago.

UNITED STATES NATIONAL HERBARIUM.—A systematic and an alphabetical index to all the North American new species of flowering plants and Ferns described in 1892 has been prepared by Miss JOSEPHINE CLARK, and published under the authority of the Secretary for Agriculture. We note that the names of plants derived from personal appellations are invariably spelt with a small initial letter, thus, *Sida garckeana*, *S. palmeri*. We shall have students and novices referring to their dictionaries to ascertain the meaning of *garckeana*. How is a young American botanist to know that Dr. GARCKE is the person in whose honour the plant was named?

"BRITISH FUNGI."—The Trustees of the British Museum have published a guide to SOWERBY'S models of British Fungi. Mr. W. G. SMITH was entrusted with the task of restoring the models of Fungi made by JAMES SOWERBY. "By his deft manipulation the models have once more become faithful representations of the living plants. An excellent little handbook, with neat and accurate illustrations has been prepared, so that the student of these plants have now every facility put in their way, and the evanescence of the plants themselves is compensated for by the models and by the descriptions and illustrations."

LATHYRUS SYLVESTRIS has, according to the *Proceedings of the Agri-Horticultural Society of India* (April to June, 1893), proved a complete failure at Lucknow and Saharunpore. Things are not much better at Natal.

"DIE NATURLICHEN PFLANZEN FAMILIEN."—The eighty-seventh part just issued contains among other monographs, one on the Batidaceæ, by Dr. DAMMER, and one on Combretaceæ by Sir DIETRICH BRANDIS. Myrtles are treated of by Mr. NIEDENZU, and Melastomads by Mr. F. KRASSER.

STOCK-TAKING: AUGUST.—Notwithstanding the "coal war" and the usual amount of disquieting rumours, the trade of the United Kingdom shows nearly "as usual," a wonderful amount of elasticity, and were our colonial friends quite in touch with us as to tariff arrangements, they and we would to-day show a better monthly account, good though (for us) that now before us is with imports in excess of those for August last year. But for the sad state of things in the coal-fields, the exports would have shown a

large increase—but of these more anon. The trade returns for August show an increase of £157,720 as compared with the same period last year. Now this in the face of a falling off in the import of live stock makes for improvement in manufactures, and textile fabrics stand forth to answer. Our extracts from the monthly Summary of Imports are as follows:—

IMPORTS.	1892.	1893.	Difference.
	£.	£.	£.
Total value for month	£34,844,365	£35,002,085	+157,720
§II.—(A.) Articles of food and drink—duty free ...	14,043,643	13,795,999	—247,644
(B.) — do., dutiable	2,017,891	2,136,334	+118,443
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)... ..	2,970,521	3,111,221	+140,700
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,668,334	4,781,648	+113,294
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,056,808	1,296,920	+240,112
(B.)—Parcel Post ...	45,640	43,102	—2,538

From the food section of the Returns we make our usual extracts, as follows:—

IMPORTS.	1892.	1893.	Difference.
Fruits, raw:—			
Apples bush.	339,281	220,923	—118,358
Cherries "	31,356	4,613	—26,743
Plums "	226,077	247,142	+21,065
Pears "	272,152	271,827	—325
Grapes "	174,928	148,814	—26,114
Unenumerated "	161,582	232,209	+67,627
Onions "	355,855	510,984	+155,099
Potatoes cwt.	75,950	60,765	—15,185
Vegetables, unenumerated, raw, ... value	£143,736	£148,994	+£5,258

THE EXPORTS

for August show a decline of £521,152—which reads to us coal, coke, and artificial fuel; and the reader need not be told how much the coal strikes have had to do with this, and with operations in other industries. But for this unfortunate conflict, our exports during August would have been in excess of last year, and the general winter outlook much better than it now is. Exports have increased to India, China, and British South Africa; it would be pleasant to include other far-off colonies. Instead of this, from Tasmania trade accounts are somewhat disheartening, owing to the protectionist craze in that part of the world. By a sort of McKinley tariff that land is cut off from the rest of the world. Thus, it turns out that the only thing cheaper in Tasmania than in England is meat, and that costs twice as much as in any other of its sister colonies. Farm produce costs about the same as in England, but more in winter than with us. Furniture, clothing, groceries, &c., cost twice as much as in free-trading England. It is to be regretted that in this lovely and fertile country, poverty should be showing itself amongst its scant population. It might be worth while to know what important "native industry" requires so prohibitive a tariff as that saddling the progress of our far-away colonial friends; and they might with advantage be advised to try back on British lines. As to the operation of tariff's nearer home, the new French Chamber will probably have something to say respecting that which has been found wanting with them; even its author, we are told, begins to doubt the expediency of existing import duties.

"DICTIONNAIRE PRATIQUE D'HORTICULTURE."

—The last part (16) completes the first volume of the French re-issue of what has got to be called NICHOLSON'S Dictionary. It contains many additional

articles and illustrations, so that those who have the original work will not find the French edition superfluous. It is edited by M. S. MOTTER, and published by OCTAVE DOIN, 8, Place de l'Odéon, Paris.

"KEW INDEX."—By an oversight in our last issue, the estimated number of names in the part just published was given as 43,000. It should have been 109,200, which is approximately correct.

THE CITY MARKETS.—Accounts recently published show a good business for the Corporation, even with the lack of profit on the most recent addition to the markets the property of the Corporation—Farringdon Fruit and Vegetable Market. The structure itself is not a very inviting one, inside or out, and the Corporation do not appear to be doing their best to attract wholesale men, but having obtained some as tenants, know how to keep them. Finding great complaints against the system of toll, and that the old market tenants did not hunger after stands, the tolls were abolished; now the rent per square foot is raised, and there is some strong language being used. By-and-by the place will become a retail market—competing with shopkeepers already severely handicapped by rates and taxes. Surely little can be said in favour of this mode of doing business.

THISTLES.—Baron Sir FERDINAND VON MUELLER has prepared for the Agricultural Department of Victoria an illustrated account of the commoner Thistles. None of these is indigenous in Australia, but having been introduced, they have thriven to such an extent, that a special law has been passed to facilitate their eradication. The first thing to do is obviously to be able to recognise the offender—and this is facilitated by the pamphlet before us—and to know his mode of life, which requires observation on the part of the cultivator. Meanwhile, it shows some remissness on the part of chemists and cultivators that they have not ere this been able to utilise these plants in some way. Has any analysis of a Thistle been made?

VEGETABLES FROM THE NORTH.—Prodigious numbers of the green aphs have this year invaded the market gardens around London, and as a consequence some kinds of green vegetables were ruined, and early became so scarce that the prices current at Johannesburg for Cabbages reigned in London, but only for a brief interval, for Scotland has been tapped for supplies, and the stream still continues flowing southward. Lancashire, Yorkshire, and Lincolnshire have sent on tributary supplies, and there are now always trucks of greenstuff running on the Midland Railway lines to the Euston Road. One salesman in the market at the station informs us that he distributes from ten to forty trucks per day, and he (Mr. PATRICK) says there is no diminution in either demand or supply. Little need to criticise the quality of the vegetable supply—some of it is simply superb. For some reasons greenstuff does not "take" so well at King's Cross as at the neighbouring station. The originator of the Cabbage trade at the market in the York Road, Mr. CRAVEN, says he is running sixty trucks a week of greenstuff from Lincolnshire. The trade here was begun during a plague of greenfly some eighteen years since, and has had its ups and downs.

BRANCHES CASTING THEIR TIPS.—This habit is especially affected by trees that are accustomed to cold climates. A. F. FOCOSTE has recognised it in certain American and other trees, viz., *Catalpa speciosa*, *Staphylea trifolia*, *Ailanthus glandulosa*, *Esculus hippocastanum*, *Tilia americana* and *platyphyllos*, which shed the tips of their branches at the end of the period of vegetation. He considers that this habit has been acquired in order to secure a determinate growth of the branches, and to obviate the useless expenditure of energy when the branches are killed back by winter frosts, as is always the case with many trees.

TROPICAL GARDENING IN BRITISH GUIANA.—We are frequently asked to mention a book on gardening within the tropics, and do not always find

it easy to do so in a way suitable to our correspondent's requirements. The present little book is well suited for its purpose. It is the work of Mr. J. F. WARD, who has had long experience as a gardener in the West Indies and in Guiana, and is published in Demerara at the Argo Press. It deals with the general preparations, such as formation of drains, walks, hedges, shelters, &c., the construction and maintenance of the flower garden, the kitchen garden, and the orchard; and the last section is devoted to the several methods of propagation. All this is included within little more than 150 pages, so that it is evident the writer does not waste his words.

PHARMACEUTICAL CONFERENCE.—At the annual meeting of the Pharmaceutical Conference, held at Nottingham, and reported in the *Pharmaceutical Journal*, the President, Mr. CORDER, spoke of certain common herbaceous plants especially connected with medicine. "Special prominence was given to the noted *Herbal* of JOHN GERARD, written in the year 1596. GERARD, it was claimed, should occupy the first place in rank of those who cultivated herbaceous plants. Little had been done in that direction before his time, and he succeeded in growing more than a thousand species in a garden, the site of which was in the neighbourhood of the present Somerset House. But for the publication of his *Herbal*, however, he would probably have been quite forgotten in later times, the fame of SHAKESPEARE, SPENCER, BACON, and other famous individuals who flourished about the same time being likely to over-shadow that of the mere cultivator of plants. After describing the volume at some length, and explaining the plan followed by the author in its compilation, Mr. CORDER endeavoured to reclaim the early history of GERARD from the obscurity in which it is involved. He then spoke at some length of the different herbals published in England at an early period by CLUSIUS, TURNER, LYTE, DODOENS, and others; and reverting to GERARD's, detailed some of the curious information contained in it, including the description of the development of the 'barnacle goose.' Consideration was next given to the herbaceous plants of greatest interest, with special reference to GERARD's acquaintance with them. Thus the Hellebores, Aconites, Podophyllum, Poppies, and kindred plants, Anemones, Crocuses, Snowdrops, Irises, and Daffodils, all received attention in turn; and the veteran botanist concluded his remarks on his favourite subject by insisting that, though a love of plants is inborn and circumstances may foster the taste, yet even a very superficial knowledge of botany cannot fail to prove of some value to all."

CALIFORNIAN FRUIT.—A Californian correspondent sends us the following from a San Francisco paper:—"Sixty-six carloads of fruit were hauled over the summit of the Sierra Nevadas yesterday on their way east, while the daily average for some weeks has been between 50 and 60 cars. Six 12-wheel compound locomotives are doing little else but hauling these fruit shipments. It generally requires two of these big locomotives to pull 20 loaded cars up the steep grades and through the snowsheds. Each car contains 24,000 lb. of fruit and 6 tons of ice, while the weight of each car is about 22 tons. Recently, 1550 carloads of fruit were sent east from Sacramento. For the same period last year the cars numbered 1100, or an increase for this year of 450 carloads. This large increase is attributed to the fact that the fruitmen, being unable to sell much fruit to the canners this year, are selling as much as they can in the eastern markets. The increased shipments have made it necessary for the railroad to haul hundreds of cars back from the east empty to fill the demand for more cars here."

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY: AUGUST 12.—First-class Certificates were awarded to Messrs. de Graaf Brothers, Leyden, for *Anomatheca grandiflora*; to Mr. Walraad, Boskoop, for *Magnolia Alexandrina*, for var.; to Messrs.

G. H. Krelage & Son, Haarlem, for *Montbretia crocosmiflora*, fl.-pl.; to Mr. C. G. van Tubergen, Haarlem, for *Crinum Powelli* intermedium, *Hæmanthus Katherinæ*, *Satyrium carneum* princeps; to Mr. C. A. Hiebendaal, Hees, for *Abutilon hybridum marmoratum* var. *Jules Marty*. Second-class Certificates were awarded to Messrs. J. van den Berg & Son, Amsterdam, for *Leucanthemum lacustre*; to Mr. H. Gerretsen, Hees, for *Begonia semperflorens*, *Vernon*, fol. var.; to Messrs. Krelage & Son, Haarlem, for *Gladiolus Marcel Prévost* and Dr. Regel, *Asparagus Sprengeri*, *Cactus Dahlia Zwerg*, *Cactus*, *Begonia tuberosa*, *Albert Crousse*. Botanical Certificates to Messrs. de Graaf Brothers, Leyden, for *Tigridia van Houttei*; to Mr. C. G. van Tubergen, for *Lycoris squamigera*. Votes of Thanks to Messrs. G. H. Krelage & Sons, for a collection of eighteen varieties of *Phlox decussata*, *Begonia hybrida*, *Tige de fer*; to Mr. Zur Kleinschmiede, of Deventer, for collection of zonal *Pelargoniums*; to Messrs. van Namen Brothers, of Zwijndrecht, for *Aster sinensis*, *Reine des Célèbres*.

THE WEATHER IN BRUSSELS.—The Chestnuts in the Avenue Louise, Brussels, last year flowered a second time in mid-autumn. This year a similar phenomenon has occurred, but even earlier in the season. The row of trees bordering the tram-line, and most exposed to the sun, had a fortnight ago the foliage scorched up by the heat. Now, these dead leaves are all falling, and new tender green leaflets are coming out in great numbers on all sides, and racemes of bloom are appearing. Truly, it is a spring before the autumn. Eight days ago, on August 25, in the markets of Brussels a second Strawberry crop was on sale, the result of the exceptional summer.

ORCHIDS AT M. PEETERS' AT BRUSSELS.—We noticed lately in the houses of this establishment the handsome *Miltonia Peetersii*, Rchb., a natural hybrid between *M. Clowesi* × *spectabilis* Moreliana and *Cattleya Schofieldiana*, Rchb. These two fine Orchids have been already described in the *Gardeners' Chronicle*. Very pretty also are *Sobralia xantholeuca*; *Oncidium ornithorhynchum* still rather rare, and the rare *Miltonia vexillaria* superba, Rchb. A *Cattleya Victoriae* Reginæ in flower was so similar to *C. guttata* Leopoldi that we were at a loss to distinguish them. *Ch. de B.*

GERANIUM MITE (PHYTOPTUS GERANII).—Mr. BURRIDGE sends us specimens of *Geranium sanguineum* in which the upper leaves are crowded in tufts, each leaf incurved at the margin, and often of a clear crimson colour, so that the deformity, for such it really is, is highly attractive in appearance. We learn that acres of ground on the Hill of Howth are covered with these tufted growths, which are the result of the irritation consequent on the puncture of the young leaves by a mite known as *Phytoptus geranii*.

CONTINENTAL WOOD-WOOL.—Messrs. W. WOOD & SONS, of Wood Green, send us a sample of their "wood-wool," which is unusually elastic, clean, free from odour, and of a clear white colour, qualities which render it well suited for packing fruit.

UGANDA.—Our correspondent, Mr. SCOTT-ELLIOT, previously known by his travels in Madagascar and Sierra Leone, has obtained a grant from the Government Grant Committee of the Royal Society for the purpose of exploring Uganda.

L'ORCHIDÉENNE.—At the meeting on September 10, the following Certificates were awarded: Diploma of Honour, First-class: to *Anguloa eburnea* Lindeni, from M. Linden. Diploma of Honour, Second-class: to *Maxillaria callichroma*, from M. Linden; to *Galeandra Claesii*, from M. Linden. Botanical Certificates: to *Saccolabium* sp., from M. Linden; to *Dendrobium bracteosum*, from M. Linden; to *Maxillaria* sp., from M. Linden; to *Bulbophyllum* sp., from M. Linden; to *Phalenopsis* sp., from M. Linden. Certificates of Merit, First-class: to *Warscewiczella Lindeni*, from M. Linden (par acclama-

tion); to *Cypripedium Morganii*, from Madame Block (par acclamation); to *C. Elliottianum*, from Madame Block (par acclamation); to *Odontoglossum crispum* Caparti, from M. le Dr. Capart; to *Miltonia spectabilis* Moreliana, from M. Linden; to *M. s. radians*, from M. Linden; to *Aganisia ionoptera*, from M. Linden; to *Cattleya eldorado alba*, from M. Linden; to *Cypripedium* × *Spicero-hirsutissimum*, from M. Linden; to *Paphinia grandis*, from M. Linden; to *Phalenopsis violacea*, from M. Linden; to *Odontoglossum crispum* var., from M. de Moerloose; to *O. Andersonianum*, from M. Linden; to *O. praestans*, from M. Linden; to *Aganisia tricolor*, from M. Linden; to *Lælia elegans* var. *Leeana*, from M. Linden. Certificates of Merit, Second-class: to *Cypripedium oenanthum superbum*, from M. Linden; to *Habenaria militaris*, from M. Linden; to *Stanhopea Wardi*, from M. Linden; to *Lælia elegans* var., from M. le Dr. Capart. Cultural Certificates, First-class: to *Cypripedium Wallaerti*, from M. Linden; to *Odontoglossum crispum*, from M. le Dr. Capart.

FLOWER SHOWS.—We have received reports of flower shows at the following places:—Tynemouth, on the 5th inst.; the annual show of the Tynemouth and South Northumberland Horticultural Society, Ponteland Floral and Horticultural Society's show, on the same day.

LILY OF THE VALLEY.—As examples of flowers out of season, but still welcome, we received from Mr. THEODORE JANNOCH, of the Lily Nursery, Dersingham, some fine flower-spikes of Lily of the Valley. In the letter that accompanied these, we are informed by him that he has not been without blooms of the Lily of the Valley since last November, and he will be cutting for some weeks longer. He doubts if this feat has ever been exceeded or equalled.

PUBLICATIONS RECEIVED.—*The Orchid Seekers in Borneo*, by A. RUSSAN and F. BOYLE, (CHAPMAN & HALL, London.)

PLANT PORTRAITS.

- CATTELEYA AUREA* STATTERIANA, *Orchid Album*, t. 468.
CATTELEYA MOSSIE, *Revue de l'Horticulture Belge*, September.
CATTELEYA TRIANÆI, var. "REGINA," *Orchid Album*, t. 466.
COREOPSIS ARISTOSA, var. *MUTICA*, *Garten Flora*, August 1, 1893.
CYMBIDIUM EBURNEUM, *Orchid Album*, t. 467.
DIPLADENIA BOLIVIENSIS, *Garden*, August 12.
EULOPHIA PULCHRA, *Illustration Horticole*, t. 181.
IRIS GERMANICA, var. *GYPSÆA*.—Flower segments all pearly white; introduced from Peru to l'Horticulture Internationale, but how it got to Peru is not stated. *Illustration Horticole*, t. 182.
LOTUS PELIORHYNCHUS, Baker, *Revue de l'Horticulture Belge*, September.
ODONTOGLOSSUM EDWARDI, *Orchid Album*, t. 465.
POINCIANA GILLIESII, *Revue Horticole*, September 1.
PLEROMA MACRANTHUM, *Garden*, August 5.
PLUM ABUNDANCE, *The Canadian Horticulturist*, August.
RHODODENDRON, HELEN SCHIFFNER.—This is the dwarf white form raised by Messrs. Seidel, of Dresden, and which attracted so much attention at Ghent in the spring. A coloured figure is given in the *Moniteur d'Horticulture*, August 10.
TRILLIUM TSCHONOSKII, Yatabe, *Tokyo Botanical Magazine*, July 10.
ZELKOVA KEAKI, *Garden and Forest*, August 2.

SOLANUM WENDLANDI.

This is one of the best of the many good garden plants for which English horticulture is indebted to Kew in recent years. It was introduced from Costa Rica many years ago by Mr. Wendland, the Director of the Botanical Garden at Herrenhausen, in Hanover, where it was cultivated in a pot in a greenhouse. In 1882, Mr. Wendland presented a plant of it to Kew, and recommended liberal treatment for it,



FIG. 55.—*SOLANUM WENDLANDI*: FLOWERS PURPLISH-BLUE. (SEE P. 338.)

when, he said, its ornamental character would be revealed. It was therefore planted in a shallow bed of rich soil in the porch of the Water-Lily-house, and as the stem grew, it was trained through into the house, and its shoots allowed to grow about and hang from the rafters of the house. Its growth was rapid during the summer, and in the winter it cast most of its leaves and rested. When the house was started again in April for the Nymphaeas and tropical Gourds, the Solanum pushed rapidly into growth, producing long soft shoots clothed with bright green succulent, pinnately-lobed leaves, and terminated by broad cymose, many-flowered heads, the largest heads measuring over a foot in diameter, and when at their best producing a truly gorgeous effect as they hung from the roof of the house and were reflected in the water wherein the Nymphaeas grew. Every year since then this Solanum has been most effective in the early part of the summer, flowering profusely, and keeping up a display for fully three months. This year the plant promised to produce a second crop of flowers. Each flower is from $1\frac{1}{2}$ to 2 inches across, and is coloured purplish-blue, with the club-like cluster of stamens coloured yellow. The stems and leaf-stalks, when young, are clothed with short soft hooked prickles, and the persistent base of the petiole becomes blunt and corky with age. The old stem of the plant in the Water-Lily-house is now 2 inches in diameter. Mr. Wendland says this species is wild in the colder regions of Costa Rica, where it climbs trees, and where its effect when in flower must be particularly fine. In a greenhouse here it was not a success, whereas nothing could be better than the behaviour of the plant in the hot, moist, sunny conditions of the Water-Lily-house. A second plant may be seen at the tropical end of the Succulent-house, where it is planted in the bed at the side in a shallow layer of soil, and its shoots are trained along the rafters. Here also it grows well, and flowers freely, some of the heads of flowers being quite as large as the largest produced by the plant in the Water-Lily-house. One may deduce from this that Solanum Wendlandi thrives in a hot, sunny house, preferring a moist atmosphere in the summer, and dryness at the roots and overhead in winter. Cuttings of the leafless shoots in early spring, or of the growing shoots in autumn, will root if planted in very sandy soil and kept in a close frame, but considering the free-growing nature of the plant, it is not what one would call an easy plant to multiply in this way. It has never ripened seeds at Kew. There is a figure of the plant in the *Botanical Magazine*, t. 6914, where it was named by Sir Joseph Hooker in compliment to Mr. Wendland, to whom we are indebted for a great deal of valuable work in horticulture, as well as in botany, and who is full of admiration for, and loyalty to, Kew, where he worked as a young gardener forty-four years ago. W. W.

HOME CORRESPONDENCE.

RETARDED GROWTH IN A PEAR TREE.—In the early spring of last year I bought, amongst other trees, at a sale in Covent Garden, a Williams' Bon Chrétien Pear, which was duly planted. All through the summer it never came into bud, although the wood kept green. This spring it was taken up and put in an out-of-the-way corner, for I did not expect anything to come of it. But, strange to say, after not moving in any way for a year, it came out in bud, and is growing fairly well. All I have spoken to about it have never heard of anything of the sort before. H. D. Hearn.

GROWTH OF LARCH AND OTHER CONIFERS.—In a letter from Mr. Wellwood H. Maxwell, of Munches, Kirkcudbrightshire, N.B., he says—"I have been very much interested in reading the accounts of the excursion of the Royal Scottish Arboricultural Society among the woodlands in the south of England, which must have been a most enjoyable one to all arborists, and especially the sight of the grand old trees which were seen in such numbers. In the accounts of the younger planta-

tions, which are always of great interest to arboriculturists, I was much struck with a statement regarding the growth made by young Larches in plantations on the Marquis of Salisbury's estate at Hatfield; the tallest of which in twelve years after planting, had attained to a height of 32 feet, and all the trees in the wood had made an average of about 20 feet in height. I got my forester to measure some trees in a small wood here, the former crop of which was laid low in the fearful storms of 1883, with the following results: Larch, planted in 1885, 24 feet high, with an average height of 18 to 20 feet. Douglas Fir, 17 to 20 feet; Scots Fir, 15 to 18 feet; and Corsican Fir, 15 to 17 feet; all the average heights at eight years planted. It has been a most curious season, but notwithstanding the long and severe drought, trees generally have made good growth; most of the hardy Conifers have made from 2 to 3 feet. A few trees of *Larix leptolepis* have made quite 3 feet of growth, and are thriving well. There is very little seed on Conifers this season here, including the Larch and Scots Fir. The only forest trees with any quantity of seed upon them are the Ash and the Horse Chestnut, which are perfectly loaded; and on some of the Oaks acorns are a plentiful crop. D.

THE FRUITING OF LAURELS.—I never remember to have seen so much fruit on the various kinds of Laurels as this year; especially profuse are the bunches of fruit on the Colchic Laurel—bunches of a dozen berries coming in a cluster, and they look so much like black Cherries in shape, as to be scarcely distinguishable when mixed with those fruits. Even the Caucasian Laurel, which seldom bears fruit in this country, is laden; while bushes of the common type are almost broken down with the weight of fruit. E. M.

ABIES ALCOCKIANA.—Speaking of blue Conifers, let me put in a word for *Abies Alcockiana* as one of the hardiest and most beautiful; indeed, it may—when the under-sides of its leaves are seen—be said to be a white Conifer, and its spring growth is of a rich chocolate-crimson. With me in West Yorkshire it suffers neither from winter snows and frosts, spring winds, nor summer droughts; and it seems from its infrequency to be an unduly-neglected tree. R. Milne-Redhead, Holden Clough, Clitheroe. [Probably, *Picea ajanensis* is meant. Ed.]

TWO CROPS OF NEW POTATOS IN A YEAR.—My previous note on a succession crop of early Potatos on the same ground requires a rather curious sequel to complete it. Our first attempt to boil them in the usual manner, starting with boiling water, was a failure; our second attempt, boiling for an hour, was also a failure, and we only succeeded by starting them in cold water, like old potatoes, and boiling for over an hour. The result was, the appearance of new Potatos, and the flavour of old ones; and we have decided that the attempt, although apparently a success, was a distinct failure in practice. Thos. Fletcher, Grappenhall, Cheshire.

THE GRAPES AT WARWICK CASTLE, WARWICK.—In the several lofty vineries in Warwick Castle Gardens are to be seen good examples of Grape-growing, in the way of unusually fine Black Hamburgh, Black Alicante, Gros Colmar, Muscat Hamburgh, and the now not often met with Black Prince. The bunches of the latter being tapering and full, and the berries large and, as is usually the case with this variety of Grape, perfectly coloured, and carrying a heavy bloom. The same may be said of a Muscat Hamburgh Vine carrying twenty-six bunches, of fine size, and beautifully coloured! Note this, ye Grape growers, who experience difficulty in colouring a crop of this excellent Grape, consisting of one-third the number of bunches indicated. This Vine is growing at, I believe, the west end of the range of vineries, and therefore got the full benefit of the afternoon's sun. The crops of the other varieties mentioned above also bear evidence of cultural skill, and of the special requirements of the Vines, soil, root and branch, and atmospheric conditions being thoroughly understood and judiciously attended to. The Black Hamburghs are especially good, being fine in bunch, berry, and finish. W.

FRUIT FARMING.—Perceiving that sundry opinions as to the profit of fruit-growing are now set forth in your columns, I venture to state my experience. I have been engaged in that pleasant pastime since the year 1857, having bought some 12 acres for the purpose. For many years I gave my entire attention to it, sparing neither money nor labour. But during all those years I have not suc-

ceeded in securing proceeds enough to cover the wages alone, except for two golden seasons, and those two just met their expenses. The land is well suited for the purpose, but I have lost many thousands by this insane investment. R. D. Blackmore.

VICTORIA REGIA.—If you have not already had too much about the Victoria, will you permit me to corroborate "W. W.'s" statements as to the leaves and their upturned edges? I have grown the Victoria with a fair amount of success for fifteen years, and I have watched it closely during this period, and noted its behaviour. I plant it out early in April, and the young leaves, until they reach about 2 feet 6 inches in diameter, lie flat on the water. At this stage the edges begin to turn up, until when the leaves reach their maximum development early in July, just before flowering commences, the upturned edge is from 3 to 5 inches, and it never flattens out on the water. The deeper the upturned edge, the healthier and more vigorous is the plant, and the larger will be the flowers. In 1879 I had a very poor plant. The edges were very slightly turned up, and the flowers were so poor that they were cut out to encourage leaf growth. In 1885 I had a plant with leaves 7 feet 2 inches in diameter, of great substance, and with deeply upturned edges. This was my best plant. When the Victoria commences to flower it produces with each flower a new leaf, and as it produces about eight to nine flowers a month, the leaves formed with these have not time to develop fully. Therefore, as long as the large leaves remain sound, the young leaves are cut out, so as to retain as long as possible the fine effect produced by five leaves filling the tank. Some of these large leaves have been retained until quite yellow, and in no case did the edges turn down in a healthy plant, but remained upright and strong, not "ragged at the edges," as stated by "V.," until cut out. About the middle of September flowering ceases, owing to reduction of temperature and light, and some fairly large leaves are again produced, and as the plant loses vitality later on, the leaves become smaller, and the edges cease to turn up, until the leaves again lie flat on the water, as they did with the young plant in April, and eventually they all decay away. This has been the behaviour not of one plant only, but of every good healthy plant which I have grown. F. W. M.

DAMPSHA MELON.—If your correspondent F. M. Bailey (p. 300), could get hold of the seed of this Melon I have named, it would be the very thing he is looking for; it keeps good two or three months after cutting, and is even then very good. It came from Persia about 1830, and was fruited in the Royal Horticultural Society's Gardens, Chiswick, and after that was lost sight of until 1847, when Mr. Wood, nurseryman, Maresfield, Sussex, gave some seed to my predecessor; and I, being foreman at the time, sowed the seeds and fruited it regularly year after year, and showed it in London, getting the second prize for flavour. It has the appearance of a green Vegetable Marrow, and very little care was required in its cultivation, simply making it a second crop after Potatos in a common frame. I remember the weight was 3 to 5 lb., and that there were generally fifteen fruits in a three-light box. One year I made an experiment with a pit of them; the pit was deep, and soil was put in as usual, and the plants planted, but I treated it like a Wardian case, and it was never opened for air till the crop of fruits was ripe, which were fairly good. J. Rust, Eridge Castle.

NYMPHÆA LAYDEKERI VAR. ROSEA (Marliac).—It may interest your correspondent "T." (p. 299), to hear or know that the above hybrid Water Lily was raised by M. Bary Latour-Marliac, the celebrated specialist, at Temple-sur-Lot, France. It passed through last winter safely in the College Gardens at Dublin, as planted out in the deep rich mud of a cold-water pond, and has flowered freely all the season. It is of a deep rosy-carmine colour inside its petals, and a lovely soft bright rose colour outside, and is a choice companion for *N. pygmaea*, white, and *N. pygmaea helvola*, clear yellow, with orange centre. I should be glad to know on what authority "T." assumes or infers that this dainty little plant came from Japan? It was, as M. Marliac informs me, raised in his establishment in France as a hybrid. F. W. B.

—It may interest your correspondent, "T." (who writes about this plant in your last issue), to know that this pretty new Water Lily, which I received early in June from its introducer, Mons. Bary Latour-Marliac, has been blooming almost continuously ever since in the open

air in my garden, planted in a half paraffin-barrel, and that it is still in flower, with several more buds to come up. I believe it will prove quite hardy, and if so, it will be undoubtedly a great acquisition to our gardens, as, though its flowers are not large, they are produced in great abundance, and I consider it quite the prettiest hardy *Nymphaea* I have ever seen. I hear that Mons. Mariac, who devotes his attention solely to the introduction of new Japanese Bamboos and *Nymphaeas*, has some most beautiful novelties of the latter family, presumably of his own raising, now in flower, which will ere long be distributed by him to the public. These are said to be wonderful advances in colour. *N. Mariacea ignea* is an addition to that remarkable series, and has deep purple-red flowers. Another, named *N. M. rubra punctata*, is very interesting and striking in colour, being rosy-red over a lighter ground, the colour being laid on, as it were, in innumerable little dots. A third variety is also very charming, being of a soft salmon and rosy tint, with a rich yellow centre. These new Water Lilies are by far the most important things of the kind that have been ever raised. *W. E. Gumbleton, co. Cork.*

MAIZE—Mr. T. Fletcher must have been very unlucky with his Maize. I have grown acres of the plant, and never had any difficulty in producing plenty of cobs from plants $3\frac{1}{2}$ to 6 feet high. For early use I sowed seeds in pots the first week in April, and planted out in trenches as soon as all danger of frost was gone. For later use, the seeds were sown in the open in the first week in May. I used to cut the cobs from the middle of August to the latter end of September, very often as many as four dozen a day. The trenches were prepared as for Celery. The seeds were always obtained from Peter Henderson & Co., nurserymen, of New York, U.S.A., who supplied us with many varieties. *J. F. Morgan, Gosfield Hall Gardens, Halstead, Essex.*

MARKET PRICES.—May I offer just a word of advice to market growers in general. Would it not be far better if growers were to try and develop local trade rather than rush all their produce on the London market? I could give cases that have come under my notice where produce has gone to London and has been returned to the local tradesmen of the same district at lower prices than the grower would sell it for on the spot, thus having to pay carriage and commission, and then accept less than local men were willing to pay for them, and at the same time making a glut upon the market and lowering the price accordingly. One of the most fruitful causes of disappointment to senders is the untrustworthy character of the market reports that appear from time to time in the garden papers. Who is responsible for them I cannot say, but it leads numbers of people to engage in what would appear a most lucrative business, making things worse than they were already for other growers, by increasing the supply which has been so long above the demand (especially in the cut flower trade), and bringing loss and disappointment upon the poor dupes. Until some new and trustworthy system of reporting market prices can be found, disappointment must accrue to those who engage in the business. In to-day's report *Gardenias* are quoted at 2s. to 4s. per doz., and a man whom I was talking to, who has been growing them especially for Covent Garden and West-end shops, assured me that 9d. per dozen was by far more like the price they are fetching. Why do not all growers form themselves into a society, and pay a responsible person or persons to make true and trustworthy reports as to the prices and supplies, thus saving disappointment to many, and at the same time regulating the supply, which would tend to keep the prices up to such a standard that would ensure a profitable return to growers? *Grower.* [Has "Grower" ever observed the paragraph which for many years we have been in the habit of placing over our market reports? *Ed.*]

DROUGHT-ENDURING FLOWERS.—Wishing to note the plants that have stood the ordeal of this hot dry summer best, I recently paid a visit to Messrs. Cannell's Flower Farm at Swanley, where less rain has fallen than in South London. Mr. Cannell told me that as some compensation for the scorching which flowers and foliage have received, many kinds of seeds that sometimes fail to ripen have this year been saved in very superior condition. For instance, fancy and show *Pelargonium* seed is unusually good and abundant. All the varieties of zonal *Pelargoniums* have rejoiced in the bright sunshine, proving how indispensable they are for bedding purposes. The variety John Gibbons has been benefited by the drought and heat, as they have checked its usually too-free growth, throwing it into flower and ripening

its wood. The *semperflorens* varieties of *Begonias*, have succeeded as bedders better than the tuberous *Begonias*. Many varieties of *Sunflowers*, *Eryngiums*, *Gaillardias*, *Zinnias*, *Marigolds*, *Tropæolums*, *Antirrhinums*, *Callas*, and *Oenotheras* have flowered well and continuously; and I noticed that the seed-pods of *Oenothera macrocarpa* have assumed monstrous proportions, being quite a curiosity in their way. *Dahlias* seemed full of promise, being less drawn and more robust than usual, the Cactus section especially. *W. R. Streatham Hill.*

PLUMERIA BICOLOR.—On entering the stove at Scone, a plant in flower of the above caught my eye at once. The fleshy deep green sheeny leaves are produced at the end of the branches; the flowers are funnel-shaped, pure white, with a yellow throat, and are produced in great profusion. No more effective stove plant could be desired. *Plumeria* is a genus of *Apocynaceæ*, and is a native of the north of South America. *P. rubra* is so sweet-scented, that it is called the Red Jasmine in the West Indies. I trust that other cultivators of this shrub will bear testimony to its value. I have learnt wisdom, or at least, caution, so I am not going to declare that Mr. McKinnon is the only grower of this shrub. *Vagabond.*

OVERCROWDING VINE SHOOTS.—I never can understand how it is that so many gardeners who really ought to know better allow the shoots on their Vines to become so crowded. It is not the lateral growths that I allude to, but the excessive number of shoots allowed to remain on one spur when disbudbing. It is not unusual to walk into ainery and find as many as three and sometimes four shoots growing on one spur. Very often only one of these shoots is allowed to carry fruit. What then is the use of crowding the space which another ought to have, I would ask? As a rule, one shoot to a spur is quite sufficient, although there are times when, through an accident to a growth on the opposite or same side, the retention of an additional shoot to fill up what would otherwise be vacant space, may be allowed. In such a case, however, the main foliage of the principal growth from this particular spur is not crowded by this auxiliary shoot. In asking the person in charge why so many surplus shoots are left on the Vine, the answer invariably is that much foliage increases the number of roots. No one would question the principle that root action is largely governed by the leaves and *vice versa*; but then it is leaves that are of requisite texture and maturity that go to build up the buds at the base of every eye in connection with a due root-growth. Vines that are yearly overcrowded by a useless retention of shoots seldom, if ever, produce first quality fruit. Take Muscat of Alexandria, for instance; no Grape that I am acquainted with resents overcrowding of the foliage more than this. On such the bunches are long and thin, and devoid of that squareness of shoulder, so characteristic in a well-developed specimen of this Grape. If the best results are to be obtained, the wood must be annually matured, and this can only be done by a due regulation of growth and sufficient space for every shoot. It is the four or five leaves on the shoot nearest to the main rod that need light and exposure to obtain the necessary solidity to enable them to perform their functions, so as to ensure a full and satisfactory crop of fruit the following season. Where three shoots are growing from one spur, how can they all enjoy that position which is essential to success? The practice of removing entirely all lateral shoots below the bunch largely prevails among successful Grape growers, and for a very good reason, prevention of overcrowding of what I term the salient leaves as feeders to the Vines by the lateral growths. *E. M.*

FRENCH WRITERS ON PRUNING.—Some of the assertions in M. Lequet's paper, which you were good enough to give us recently, are truly amazing, as, for example, one to the effect that "unpruned Apple trees do not bloom till they are eight or ten years old, and only bloom well once in two years then." I do not believe there is an Apple in cultivation that takes so long to flower and fruit, and I do know many prolific sorts that begin to bear the second and third year after planting, even on the Crab stock—Lord Suffield is a notable example. I have seen trees laden the second year after they came from the nursery with three or four one-year-old shoots on them. It is entertaining, next, to be told that it "has become an aphorism since the careful experiments of M. Hardy" that "all the branches which are left unpinched on a Cherry tree are so many fruit-bearing branches." I should have thought that anyone who ever saw a year's tree growing wild

knew this well enough without experiments of any kind. An unpruned and unpinched Cherry branch produces just a wreath of blossom and fruit from end to end. I daresay I could forward you loads of branches from 6 to 10 feet long like this in the season. Is the word "unpinched" correct here? As to pinching Peach trees, also favoured by M. Lequet, an English gardener has just to see the model trained trees in France to be disenchanted. I have seen what I was to'd were among the finest examples of this kind in France, and I am perfectly sure that myself and many others in England have often produced trees that for quantity and quality of fruit would have beaten them "into fits" in about one-fifth of the time. Perhaps you are aware that the "extension" system of training Peaches has been introduced into some noted French gardens with success, but to the great disgust of the French men (I give you the name of one place privately). The proprietor had two noted gardeners—one for the ornamental part and one for the fruit department. He wanted Peaches grown in the English fashion, and put up a long house for the purpose, which was put under the flower gardener, with a young Englishman to grow the trees, which also were sent from London. These trees were in full fruiting swing before the French trainer could have had his foundation "atumps" hewn out, and great were the exclamations and gesticulations over them by the French gardeners. They, the trees, were "barbarous," they were "grosse," &c., but the crops got over them, and let us hope the example will do good. No doubt, to a French Peach-trainer, what he calls a "glutton," or a Peach shoot 5 or 6 feet long, with maybe a dozen fertile sub-shoots on it, and all the production of one summer, would be novelty such as he never contemplated. It would take him ten years to produce an equally fruitful shoot. *Extension.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 12.—At the meeting of this Society on Tuesday last at the Drill Hall, James Street, Westminster, the number of exhibits was much smaller than usual. *Violas*, *Dahlias*, and other seasonal flowers were well shown, especially *Roses*, which were quite exceptional for this season of the year.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. C. T. Drury, H. B. May, R. Dean, G. Stevens, F. Ross, J. D. Pawle, H. H. D'Ombrian, J. T. Bennett-Poë, C. Noble, C. E. Pearson, G. Gordon, and P. Barr.

A first-class collection of cut flowers was staged by Messrs. Dobbie & Co., Rothesay, N.B. The *Violas*, which were arranged in pretty sprays, upon black velvet, were very fine. The most striking of these were Archibald Grant, a fine bright purple; Dawn of Day, Duchess of Fife, Lucy Ashton, Bride-maid, Duchess of Sutherland, Blue Cloud, and Columbine. There were some pretty new single *Dahlias*, and also a new strain of single varieties, having the petals reflexed along the margin and tapered at the point. This new form of Cactus *Dahlia* will be prettier arranged in vases than the ordinary single, and we believe that, in another season or two, some very useful varieties with these characteristics may be raised. The best of those shown were *Meg Merrilies* (yellow), *Guy Mannering* (white), and *Ivanhoe* (rose). (Silver Banksian Medal.)

A good group of cut *Roses* and a few herbaceous flowers were put up by Messrs. Paul & Son, Chesham. An Award of Merit was given to *Noisette Rose Adelina Vivand Morel*, a small but pretty bronzy-pink flower, and very floriferous; also to shrubby *Phlox Molière*, a very soft, beautiful pink bloom, of large size and excellent form. A few plants in flower of the blue *Clematis Davidiana* were also included. This species has terminal heads of bloom, and a few that are axillary; the habit is erect, and the height of those shown was 2 feet to 3 feet (Silver Flora Medal).

Another collection of cut *Roses* was from Messrs. W. Paul & Son, Waltham Cross, Herts; these blooms were of good quality for autumn *Roses*. The new *H.P.*, *Clio*, shows fairly well at this season. Bunches of *Tea*, *Marie Van Houtte*, and the new *China Rose*, *Duke of York*, which received an Award of Merit a fortnight ago at the Agricultural Hall meeting, looked fresh and pretty (Silver Flora Medal).

Messrs. Jas. Veitch & Sons, Chelsea, had a collection of their new hybrid *Streptocarpus*, showing continued improvement in form, and especially in the colours, which are much deeper and brighter. These are fast becoming the most charming of greenhouse flowering plants. Also a group of their *Rhododendron javanico-jasminiflorum* hybrids, including a few that are new, which show larger flowers and corymbs than most of the earlier-raised varieties (Vote of Thanks).

A group of *Cannas* came from the Royal Horticultural Society's Gardens, Chiswick, including some of the newest and best varieties of the English and continental raisers. An Award of Merit was recommended to one by Messrs. Vilmorin, Andrieux & Co. named *Quasimodo*, a large flower of very bright scarlet, with narrow gold margin.

A few spikes of *Pentstemon*s came from Messrs. Stuart & Mein, Kelso, N.B.; and some *Tuberoses*, which had been grown in the open, from Dr. P. H. Emerson, Claringbold, Broadstairs. Captain Le Blanc, Northam House, Potters Bar (gr., Mr. May), sent twelve blooms of a show *Dahlia* Mrs. Le Blanc, very large and full, and quite white.

T. W. Girdlestone, Esq., Sunningdale, had a first-rate collection of single *Dahlias* in sprays, Goldenlocks (yellow), M.C.C., Demon (very dark purple), Phyllis (ilac, flaked with rose and crimson), all obtained Awards of Merit.

A collection of China Asters was sent by Messrs. T. H. Crisp & Co., Clyne Valley Nurseries, Sketty, Swansea. These were of much better quality than we have seen them about London this season (a Bronze Banksian Medal).

Messrs. H. Cannell & Sons, Swanley, had a very pretty stand of *Cactus Dahlia* blooms, and Cannell's Gem was granted an Award of Merit. It is a red variety of rather small size, the petals much reflexed, and tips tapering to a point. Mrs. G. Reid is a very pretty combination of heliotrope and white, but its form is not good. The collection included a number of varieties, and the specimens were bright and good (Silver Banksian Medal).

Orchid Committee.

Present: Sydney Courtauld, Esq., in the chair, and James O'Brien (Sec.), Dr. M. T. Masters, F.R.S., A. H. Smea, Jas. Douglas, E. Hill, J. Jacques, H. Ballantine, T. W. Bond, and W. H. White.

Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), exhibited some very fine hybrid *Cypripedium*s, and the rare and very singular *C. præstans* (syn. *glanduliferum*), a very curious species, with flowers somewhat like those of *C. philippinense*, but with a large staminode, the broad middle of which is bright yellow, the sides yellow, thickly studded with short dark hairs. Among the hybrids were *C. × conco-Lawre* (concolor \times Lawrenceanum), with two large wax-like pale primrose flowers, thickly spotted with purple, proceeding from one spike; *C. × ono-superbiens* (*Enanthum × superbiens*), to which an Award of Merit was given; although we were under the impression that that award had been previously made to it. There was also a cut spike of *C. × Morgania Burfordiensis*, which is by far the best form of that handsome variety.

Messrs. J. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, exhibited some new and rare hybrid *Orchids*, foremost being *Cypripedium × Aphrodite* (niveum \times Lawrenceanum \times), being the reverse cross to *C. × Antigone*; the flowers were better than it had ever been seen before, and a First-class Certificate was awarded. The flowers were of the *C. niveum* form and colour, but very large, pure white, thickly spotted with purple. Another fine exhibit of Messrs. Veitch was *Lælio-Cattleya × Nysa* (*L. crispata* \times *C. Warscewiczii* \times), which bore some resemblance to *L. C. × exoniensis*, but the front portion of the lip was longer, and darker in colour (Award of Merit). *Dendrobium neoguineense*, like a white form of *D. macrophyllum* and *Lælio-Cattleya × epicasta* (*L. pumila* \times *C. Warscewiczii* \times) (Award of Merit), also came from the same firm.

Messrs. F. Sander & Co., St. Albans, staged an extensive group of very choice and well-grown *Orchids*, embracing *Lycaste Skinneri pulcherrima*, a grand form, nearly white; three of the brilliant vermilion *Habenaria militaris*, the same number of its equally pretty flesh-coloured companion, *H. carnea*; *Oncidium Jonesianum*, *Aërides Lawrenceanum*, *Angræcum articulatum*, *Zygopetalum Wailesianum*, six fine forms of *Miltonia spectabilis* Moreliana, the rare *Oncidium incurvum album*, *Cattleya Gaskelliana alba*, and several fine hybrid *Cypripedium*s (Silver Flora Medal).

Messrs. Hugh Low & Co., Clapton, also staged an effective group, in which were three plants of the beautiful new pure white *Stanhopea Amesiana*, several *Miltonia Roezlii*, the pretty white *Trichopilia Wagnerii*, *Cypripedium × marmorophyllum*, *C. cananthum superbum*, *C. × Brayanum*, *C. × picturatum*, and the singular but not handsome *C. Victoria Mariæ* (Silver Banksian Medal).

Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, exhibited *Cypripedium × Clotilde Moens* (*Leeanum × Haynaldianum*), a pretty and floriferous hybrid, with flowers closely resembling those of *C. × Leeanum*, but borne three on a spike (Award of Merit).

R. J. Measures, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. Chapman), showed *Cypripedium Ganessa* (*Sallieri × Lawrenceanum Hyeannum*), *C. Hebe* (*Hookeri Measnesianum × Lawrenceanum*), a fine bold and well-coloured flower; *C. Madame Cappe* (*Spicerianum × Dauthierii*), *C. radiosum* (*Lawrenceanum × Spicerianum*), *C. × Diana* (*superbiens × Spicerianum*), *C. picturatum*, *C. Schomburgkii*, and *C. × cardinale* var. (Bronze Banksian Medal).

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed a small collection of superb cut blooms of *Orchids*, of which *Cattleya Statteriana*, a nearly white-petalled *C. Hardyana*, was an admirable example of an unique *Cattleya*. Another curious species was a form of true *Cattleya Victoria Regina*, with greenish sepals and petals, shaded and veined with reddish-brown. Other fine things were *Lælio-Cattleya elegans* var. *Blenheimensis*, *Cattleya × Minucia*, *C. × Parthenia* (*fimbriata × Mossiae*), *Cattleya Leopoldi*, and the superb form of it, *C. L. Stand Hall* var. (Vote of Thanks).

H. G. Leon, Esq., Bletchley Park, Bucks (gr., Mr. A. Hislop), sent *Cypripedium Leonæ insignis* (*Chantiniæ* \times *callosum* \times), whose strong spike bore two flowers somewhat resembling those of *C. × Ashburtoniæ*, but much larger, and better in colour (Award of Merit).

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr., Mr. Murray), showed a pretty hybrid (*Cattleya Dowiana* \times *Lælia pumila præstans* \times), the reverse cross to *L. c. × Ingrami*, and very closely resembling it. Chas. L. N. Ingram, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), sent *Cypripedium Adonis* (*hirsutissimum × Curtisii*) and *C. Unique* (*Lindeni × Schlumii album*). Mr. J. O'Brien, Harrow-on-the-Hill, showed several spikes of *Satyrium membranaceum*. S. G. Lutwyche, Esq., Oakfield, Beckenham (gr., Mr. J. May), showed *Lycaste Skinneri* with two flowers on a spike. Mr. H. Elliott, Stourvale Nurseries, Christchurch, a good form of *Cattleya labiata Gaskelliana*; the Hon. Mrs. Foley, Fordingbridge, Hants (gr., Mr. Moxham), a profusely-flowered plant of *Cattleya labiata Gaskelliana*, with blooms much like those of *C. Mendeli Morgania*.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. J. Lee, T. Francis Rivers, Harrison Weir, J. Cheal, W. Warren, J. Wright, G. Bunyard, A. Dean, G. Wythes, H. Balderson, J. Smith, G. Norman, W. H. Divers, J. Hudson, T. J. Saltmarsh, and J. Willard.

Messrs. John Laing & Son, Forest Hill, London, S.E., staged a fine collection of Apples and Pears, in ninety dishes. Of Apples, Cellini Pippin, Lord Suffield, Emperor Alexander, Bismarck, Blenheim Orange, New Hawthornden, King of the Pippins, Cox's Orange Pippin, Stirling Castle, and Kerry Pippin were the most attractive. The best dish of Pears was General Todleben (Silver Knightian Medal).

Messrs. T. Rivers & Son, Sawbridgeworth, staged an excellent collection of orchard-house fruit, including Apples, Pears, Plums, and Peaches. All the specimens were of the best quality (Silver Knightian Medal).

Twelve dishes of Pears were exhibited by H. St. Vincent Ames, Esq., The Gardens, Cote House, Westbury-on-Trym, Bristol (gr., Mr. W. H. Banister).

Two dishes of very fine Lane's Prince Albert Apple, from a pyramid, were shown by the Rev. J. H. Brown, Bedstone Rectory, Shropshire; and Seedling Apples were exhibited by Mr. D. R. Carter, Petersfield Station; and by Miss Winckworth, Rochester.

Mrs. Crawford, Gatton, Reigate (gr., Mr. W. Slo-grove), had six dishes of Pears of remarkable size. The varieties were:—Doyenné Boussoch, Beurré d'Anjou, Doyenné du Comice, Marie Louise, Beurré

Diel, Conseiller de la Cour, and Fondante de Cuere (Cultural Commendation). Twelve exceptionally large fruits of Peasgood's Nonsuch Apple were sent by the Bishop of Bath and Wells, The Palace, Wells (gr., Mr. J. B. Payne). The tree was planted against a wall, with south-east aspect, and a terrace behind, which has kept the wall cool, so much so that it is said no other fruit has succeeded in the position before this Apple tree. No fruit produced this season weighed less than 1 lb. in weight (Bronze Banksian Medal).

A new Grape, called Cape Muscat, was shown by Mr. Walter Weir, The Gardens, Acton Park, Wrexham. The fruit is black, of fair flavour, and solid flesh (Award of Merit). Lord Foley, Ruxley Lodge, Esher (gr., Mr. J. W. Miller), showed two dishes of excellent Barrington Peaches from trees outside, and a large fruit of King of the Melons Melon. Dr. P. H. Emerson, Claringbold, Broadstairs, Kent, showed five small Melons that had been grown in the open. The fruits were small, but the flavour was fair.

Messrs. Robert Veitch & Son, Exeter, had a few fruits of a new Peach Late Devonian. Mr. W. H. Divers, Ketton Hall Gardens, Stamford, had splendid Lord Palmerston Peach from a cool house, and some fruits of a seedling Peach named Duchess of York, described as of exceptionally good flavour and of good constitution (Award of Merit).

Messrs. W. E. Browne & Son, Wells, Somerset, sent six fruits of Monster Pippin Apple, and a dish of a variety called Bartlett's Glory (Award of Merit).

From Messrs. Sutton & Sons, Reading, came six bulbs of their Al Onion, and a dish each of the Windsor Castle and Sutton's Triumph Potato. The Potatoes were very fine, and all three subjects were awarded First-class Certificates.

The Society's Gardens at Chiswick contributed a collection of Onions in forty-six varieties, for comparison with each other.

Mr. W. H. Pitcher, Albury House Gardens, Surbiton, showed a dish of Tomatos (Vote of Thanks).

Lecture by Mr. James Douglas.

In the afternoon a paper by Mr. J. Douglas, on "Garden Phloxes and Pentstemons," was read by the assistant-secretary in the absence of the lecturer. Taking the *Pentstemon* first, Mr. Douglas described the species *P. Hartwegii* and *P. Cobaea* as the parents from which most of the garden varieties have been obtained. In regard to cultivation, the lecturer advised seeds to be sown on a hot bed in February, and as soon as large enough, to be transplanted, but kept warm for a little time, and afterwards hardened off by slow degrees. If propagated by cuttings, these should be taken in September or October, and put into handlights into good loam, leaf-soil, and sand. They should be kept in handlights until the spring, and plants grown in this manner would be useful for filling-up gaps in the herbaceous borders.

Phloxes were treated in a similar manner, a short history of the garden varieties preceding general remarks upon the cultivation most suitable to their requirements. Cuttings should be taken in the spring, as soon as sufficient growth has been made, and placed in a gentle heat. Plants raised in this manner are very superior to those obtained by division. If seed should be saved it must be gathered and dried carefully, and kept stored until February, when it may be sown in pots or pans, and placed over a hot bed in the pits. They can be flowered in pots if desired, and do exceedingly well; and they also flower to some extent the same season, if placed in the border.

Mr. A. Dean, in discussing the subject after the paper had been read, desired that amateurs should not believe that the culture recommended by Mr. Douglas was indispensable to the one plant or to the other, and declared that they would do extremely well and could be propagated very easily without any heat whatever. A few remarks from Mr. Bunyard concluded the meeting.

BRIGHTON AND SUSSEX NEW HORTICULTURAL.

SEPTEMBER 5, 6.—The second annual autumn exhibition of this Society was held in the Dome Corn Exchange and grounds, adjoining the Royal Pavilion, on the above date. The exhibits were tastefully arranged in the several buildings and two large marquees on the lawn, thus providing ample space for the visitors to inspect the various exhibits without getting crowded, as is too often the case in such places. Never, in our opinion, has the Corn Exchange presented such an attractive appearance, for down

each side of the building were arranged the miscellaneous groups in a most tasteful manner, while one end was occupied by a collection of garden sundries from Mr. Balchin, the other being devoted to a collection of fruit from Messrs. Cheal & Sons, Lowfield Nurseries, Crawley. Down the centre of the building were tables of plants, and on either side of these the numerous exhibits of fruit were staged, the whole presenting an attractive picture. The Dome was reserved for the most part as a promenade, collections of cut flowers being staged round the building. We noticed here some of the best collections of stove and greenhouse cut flowers that it has been our lot to see, notably those exhibited by Mr. Archer, gr. to Miss Gibson, Hill House, Saffron Walden. The Dahlias, too, were very good.

In the tents on the lawn were arranged the stove and greenhouse plants, vegetables, &c., of which there was a goodly show, particularly in vegetables, there being upwards of twenty exhibits in several classes, while in the fruit classes there were no fewer than twenty-nine entries for a dish of Pears. The competition was so keen in some of these classes, that the judges had a little difficulty in deciding. Should this society go on as it has begun, it will eclipse every other in the south of England.

For a miscellaneous group, occupying 150 square feet, the 1st prize fell to Mr. Wells, Shirley, Southampton; the 2nd going to Mr. W. Peel, of the same place. For a miscellaneous group arranged for effect, occupying a space of 80 feet, 1st, Mr. G. Sims, Dyke Road, Brighton. For a group of Ferns, Mr. J. Adams, Coombe Place, Lewes, was 1st. For the best tables of plants arranged for effect, 1st, Mr. Miles; and for a table of Begonias, 1st, Mr. Murrell, Manor House, Preston.

Mr. Portnell, gr. to Sir A. Lamb, Battle, was 1st for a collection of flowering stove and greenhouse plants; while in that for six foliage plants, Mr. Warren, of Handcross Park, was 1st. The last-named exhibitor was also 1st for six Ferns. Mr. E. Meachen was 1st for six Crotons, and Mr. Warren for six Dracenas. Mr. J. Turner was 1st for six Palms.

For six table plants, 1st, Mr. Miles; while Mr. H. Garnett, Mount Harry, Preston, was 1st for Orchids. For six Fuchsias the 1st place was awarded to Mr. Meachen; Mr. Murrell taking the same for six Pelargoniums. In the class for six Begonias, Mr. H. Head, of Hove, was 1st; and for that of Coleus, Mr. G. Sims. For a specimen ornamental plant, Mr. Warren was 1st, with a grand plant of Croton, and likewise for a specimen flowering plant.

Cut Flowers.—These were strongly represented, the 1st prize in Class 23 for twenty-four varieties going to Mr. Archer, Saffron Walden; and for that of twelve varieties to Mr. T. Portnell. Mr. G. Garroway, Nurseries, Bath, was 1st for twenty-four Roses; and Mr. Harris of Horsham, was 1st for twelve Roses. Mr. Garroway was 1st for twelve Teas. For forty-eight Dahlias, Mr. G. Humphries, King's Langley was 1st; and for twenty-four the highest award fell to Messrs. Cheal & Sons.

For twelve Dahlias, 1st, Mrs. F. E. M. Ronalds; Messrs. Cheal being 1st with single-flowered Cactus and pompon varieties.

For a collection of herbaceous flowers, Mr. Goldsmith, gr. to Sir E. Loder, Leonards Lea, Horsham, was 1st; and for a collection of annuals, Mr. Garroway. Both Asters and Pelargoniums were good, and Mr. Fowler and Mr. Wickham took 1st respectively. Mr. Chard was 1st for bridal bouquets, wreaths, centre table vase, and basket of flowers.

Fruit.—This was exhibited in good form, and there was a strong competition in most of the classes. For a collection of fruits fit for table, 1st, Mr. L. Budworth, gr. to C. Hill, Esq., Rockhurst. For three bunches of Black Hamburg Grapes, 1st, Mr. A. Kemp, gr. to R. S. C. Dickens, Esq., Horsham; and for any other variety, 1st, Mr. J. Bury, Forest Hill, S.E., who was also 1st for white Grapes, shown in three bunches. Melons were well represented for two fruits, one scarlet and one green-flesh. Mr. G. Stovell was 1st.

A variety of out-of-doors fruits were shown, the produce generally being of a high degree of excellence. The 1st prize for two dishes went to Mr. J. Coles, and that for two dishes of Nectarines to Mr. Offer, Handcross Park.

Vegetables.—There were five entries for nine kinds, and four for six kinds. The 1st prize in the former went to Mr. Garroway, of Bath; Mr. A. Ward taking 1st in the latter class. For six varieties of Potatoes, Mr. Kemp was 1st. Peas were the best we have seen for some time, those of Mr. Rapley's, that took 1st, being particularly good. Tomatoes, especially

the 1st-prize lot shown by Mr. Garroway, were excellent. There was also a strong competition in Cucumbers, Mr. G. Helman, gr. to Viscount Gage, taking 1st.

Of the miscellaneous exhibits, not for competition, Mr. Piper of Uckfield, and Mr. Woolard, staged some good Roses; Messrs. Cheal of Crawley hardy fruits, and Mr. Balchin plants. On the whole, the Society, and especially the Hon. Secretary, Mr. Longhurst, must be congratulated on getting together so fine a show.

ROYAL AQUARIUM DAHLIA AND GLADIOLUS SHOW.

SEPTEMBER 6, 7, 8.—The finest exhibition of Dahlias in point of quality held in London for years past was opened on Wednesday, the 6th inst. All the leading growers were represented, and there were six collections of sixty blooms. Mr. C. Turner, Royal Nursery, Slough, was 1st; and Messrs. Keynes & Co., Salisbury, and John Walker, Thame, equal 2nd. Messrs. Keynes & Co. were 1st with thirty-six blooms. Messrs. Saltmarsh & Sons 1st with twenty-four blooms, and also with twelve blooms.

In the amateurs' division, Mr. J. T. West, The Gardens, Cornwall, Brentwood, who has been showing very generally in excellent form this season, was 1st with twenty-four blooms. Mr. A. Ocock, Havering, Romford, was 1st with eighteen blooms; and Mr. Thos. Vagg, The Gardens, Bedford, Havering, 1st with twelve blooms, and also with six, all characterised by fine quality.

Pompon Dahlias were very effective in bunches of twenty-four varieties, Messrs. J. Cheal & Sons, Crawley, being 1st; while Messrs. J. Burrell & Co., Cambridge, were 1st with twelve bunches. Mr. J. T. West took the 1st prize for six bunches.

Single Dahlias were very fine also, and Messrs. J. Cheal took 1st honours with twenty-four bunches; Mr. G. Humphries was awarded the 1st prize with twelve; and Mr. R. Burgin, St. Neots, with six. Very fine and striking too were the decorative varieties; Messrs. Keynes & Co. were 1st with twelve bunches, and Mr. J. T. West with six.

A very fine collection of Gladioli from Messrs. J. Burrell & Co., Cambridge, numbering 144 spikes, was awarded the 1st prize, the remarkable fact being that many of the finest spikes were from last year's spawn.

Early Chrysanthemums, though not numerous, were yet very good. The best collection of twenty-four bunches came from Mr. E. F. Such, nurseryman, Maidenhead; Mr. Norman Davis, Camberwell, being a good 2nd. A fine stand of twelve bunches of Madame C. Desgranges came from Mr. Shoesmith, Shirley, Croydon; and Mr. J. Agate, Havant, was 1st with twelve blooms of any large-flowered. Mr. D. B. Crane, Highgate, had the best twelve bunches of Pommies; and Mr. W. E. Pagram, The Whin, Weybridge, the best six bunches of Madame Desgranges and its varieties, and also of any yellow variety of the same. Mr. A. McMillan had the best six blooms of distinct varieties; and Mr. D. B. Crane was 1st, with twelve bunches, not less than three blooms of each. Mrs. Walter Mole, Hemel Hempstead, had the best epergne of Chrysanthemums; Mrs. Smith, Romford, being 2nd.

In the miscellaneous class a Silver-gilt Medal was awarded to Mr. A. Rawlings for a large collection of Dahlias; to Messrs. J. Laing & Sons, Forest Hill, for a large collection of cut flowers, and also for 100 dishes of Apples; to Mr. J. B. Payne, gr. to the Lord Bishop of Bath and Wells, for twelve very large fruits of Peasgood's Nonsuch Apple; and a Silver-gilt Medal to Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, for a noble bank of decorative Pompon and single Dahlias. A large number of Certificates of Merit were awarded, to which a later reference will be made.

DUNDEE HORTICULTURAL.

SEPTEMBER 7.—This popular show was opened by ex-provost Moncur, and the Hon. Charles Ramsay addressed a large gathering—so also did Sir John Leng, M.P.—on topics bearing on horticulture in its scientific and practical bearings.

There were three tents full of exhibits, one tent, about 280 feet long, embracing plants, flowers, fruits, and vegetables, of great cultural excellence, and numbering about two thousand entries. In many of the classes competition was very keen, and although cut flowers were not equal in quantity to what have been shown in some previous seasons, there were

many fine exhibits, especially in the nurserymen's and florists' classes, which were numerous, and came from all parts of Scotland.

Plants.—Especially fine were those shown from Rothesay, Aberdeen, and Hawick, and the local nurserymen came forward in great force.

Entering the long tent, a choice collection of Conifers was observed arranged on the grass, and on tables placed round the sides of the tent. Fuchsias did not show their fine drooping habit so well as if they had been a few feet above the ground. The Conifers were nice plants, feathered to the ground, and the green turf covered the roots with fine effect. Cupressus and Retinosporas in variety were the most telling in the collection.

The gardeners' competition tables were near the entrance, and were very creditable well-arranged productions of suitable kinds. Mr. Grossart, gr. at Binrock, Dundee, was 1st, with Crotons, of beautiful colour and excellently grown; besides these plants he had Dracenas, Palms, Ferns, and some choice flowering plants (Celosias, in particular), thinly placed in a bed of Adiantum, edged with variegated Panicum and Ficus repens. Mr. Burchart, Elmslee, was 2nd, with an effectively-arranged exhibit. The remainder of the tent was filled with groups of such effective plants (standing on the grass) as Liliums, Vallotas, Chrysanthemums, Pelargoniums, Begonias, Coleus, Palms, Ferns, and foliage plants in great variety of forms and shades of colour.

The Tables.—Two showy tables at the further end of the tent formed an attractive finish, and one was at least novel and very interesting, with a choice collection of Pine-apples, Melons, Pears, Apples, Peaches, Plums, &c., and a splendid bunch of Grapes hanging at each corner. Two Gros Maroc were such as one seldom sees for size of bunch and berry, and the colour was as good as possible; the fruits placed round the tall plants, with choice Ferns interspersed, had many admirers. This exhibit was from Mr. George Morrison, Dundee. Messrs. Laird & Sinclair's table was placed to match Mr. Morrison's, and was rich in Palms, Ferns, and florists' flowers. On the long lines of side-tables were exhibited large groups of Gladiolus, Dahlias, Asters, Pansies, Carnations, and Hollyhocks, with mostly every other favourite flower of the season; Cockscombs (about thirty in number) were the finest we have seen at any exhibition for some years, and the 1st prize was won by Mr. Collie, Inverlay, with an extra fine triplet.

Cacti and alpine plants, in pots and pans, formed a fine addition to the competitive plants; they were varied in species, and tabled in great numbers, all healthy and vigorous.

Table plants were in great numbers, Mr. Grossart taking the lead. Allamandas, Phormiums, Yuccas, Dracenas, and Caladiums, of great size, broke up the flatness and monotony of the smaller and lower exhibits. The table on the east side of this tent was loaded with florists' flowers, arranged with fine effect.

Florists' and other Cut Flowers.—Messrs. Thyne & Paton, Croll of Dundee, and Forbes of Hawick, were here in great force. The Carnations, Hollyhocks, and Dahlias, many new ones amongst them, were a fine display in Mr. Forbes' exhibit; Mr. Cuthbertson, of Rothesay, had a magnificent selection of hardy herbaceous plants, worth a visit to the show of itself, and the same exhibitor had a large breadth set apart for exhibiting grand Leeks and red and white Celery, for which they are now so famous. They had quantities of Sugar-Beet, which they are encouraging farmers to cultivate. Messrs. Croll and Cocker, of Rose fame, had a number of boxes of splendid Roses for the season of the year. The colours were very brilliant.

Fruits.—Leaving many fine exhibits unnoticed here, we passed to the fruit tent, where tables were placed all round the sides which were loaded with cut flowers. Honey was an attractive exhibit, and mostly of the finest quality. The fruit appeared to be the most attractive exhibition, as no one could remain near it long without being crushed by the great crowd. The finest collection of eight sorts which won the 1st prize came from Mr. Leslie, gr., Pitcullen, Perth, an exhibitor widely known for his splendid Grapes. He had very fine bunches of Muscat of Alexandria, Madresfield Court, and others, but his hardy fruits were barely equal to those of some others competing against him. This exhibitor had 1st prizes in other classes where Grapes were prominent exhibits. Messrs. Laing and Dickson were the leaders in the smaller collections of Grapes. Apples were largely represented, culinary fruit was of immense size, and the dessert varieties of beautiful colour.

Stone fruits mostly from open walls were rather small, but of fine colour.

Vegetables made an immense show in a tent set apart for them, the quality being of the highest. Mr. Joss, gr., Craigie, was 1st for the large collection. Cauliflowers, Celery, Leeks, Onions, Peas, and Potatoes were in fine form, but not in great quantity; roots generally were excellent; Parsnips were such as we never saw before, being 4 feet long, and of beautiful form; they were shown by Mr. Duff, gr., Balledgarno. Dundee has deservedly a great name for its horticultural exhibitions, and the Association manages their exhibitions on different lines to other societies, as one may understand when we state that by 7 A.M. the judges were at work, and that they had completed their labours early in the day. Luncheon was served at 1 P.M., where numbers of the county gentry attended, and spoke feelingly on horticultural matters. Lord Dalhousie and Hon. Captain Ramsay acting as vice-chairman; Lord Camperdown was prevented from showing his love to the horticultural interests. *M. Temple, Carron.*

GARDENING AND FORESTRY EXHIBITION.

SEPTEMBER 13, 14.—Another of the fortnightly shows at Earl's Court was opened on Wednesday last, when the exhibits consisted chiefly of Dahlias and fruit. The small tent where the whole of the special exhibitions have been held during this season was much overcrowded, and many of the exhibitors expressed regret that the annexe which was in use upon similar occasions last year could not be used now.

Dahlias were very good in quality, and the leading prize for sixty show and fancy blooms was taken by Mr. Charles Turner, the Royal Nurseries, Slough. Messrs. Saltmarsh & Son, the Nurseries, Chelmsford, had the best twenty-four in the nurserymen's class; and Mr. J. T. West, gr. to W. Keith, Esq., Cornwall, Brentwood, the 1st in the amateur section. Mr. J. S. Fowler, Giebelands, Scuth Woodford, had the best twelve blooms among amateurs.

For a collection (any types) arranged for effect in a space of 12 feet by 6 feet, Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex, were 1st; and Messrs. Keynes, Williams & Co., Salisbury, 2nd. Messrs. Keynes, Williams & Co. were 1st for eighteen Cactus or decorative Dahlias in bunches of six; and in the amateurs' class for nine bunches, the 1st place was taken by Mr. E. Brown, gr. to M. W. Morris, Esq., Oak Lodge, Horley, Surrey.

Mr. Charles Turner had the best twenty-four Pompons in the nurserymen's class, and Mr. J. T. West, gr. to W. Keith, Esq., Cornwall, Brentwood, had the best twelve from amateurs. T. W. Girdlestone, Esq., Sunningdale, Berks, was 1st for twelve single varieties.

For a collection of twelve Sunflowers, Messrs. J. Burrell & Co., Home House Nurseries; and Messrs. Paul & Son, Old Nurseries, Cheshunt, were 1st for a collection of cut blooms of Michaelmas Daisies.

Fruit.—There was not a very great deal of fruit, but the quality of some of the dishes left nothing to be desired.

Mr. Geo. Woodward, gr. to Roger Lee, Esq., Barham Court, Maidstone, took leading honours in the classes for three dishes of Peaches, for dessert and culinary Apples, and for three dishes of Pears. The Apples and Pears shown by Mr. Woodward were quite remarkable for their quality.

Mr. J. Sanders, The Gardens, Poulton Ramsey, Hampshire, had the best single dish of Peaches.

Mr. J. McIndoe, Hutton Hall Gardens, Guisborough, Yorks, had the best three dishes of Plums in the class for dessert fruit; and in the one for cooking Plums, Mr. McIndoe had also the best collection of cooking and market Plums, showing twenty-five dishes; and Mr. R. Potter, gr. to Sir Mark Collett, St. Clere, Kemsing, Sevenoaks, was 2nd.

Miscellaneous.—Included among the groups and collections of non-competitive exhibits were a very grand group of Begonias, by Messrs. John Laing & Son, Forest Hill, which occupied one of the ends of the tent. A collection of Dahlias by Mr. M. V. Seale, Vine Nurseries, Sevenoaks; a large group of Dahlias at the other end of the tent from Mr. T. Ware, Tottenham; a few Dahlias from Mr. J. R. Tranter, Henley-on-Thames. Another collection from Mr. J. Walker, Thame, Oxon; a group of Canna sprays by Messrs. Cannell and Sons, Swanley. Also some trusses of Begonia blooms; and some specimens of the Simplex Syringe

Fumigator by Mr. A. W. Young, 137, Homedale Road, South Norwood, S.E. Mr. E. F. Such, Maidenhead, had a group of Dahlias; Mr. T. A. Hester, gr. to W. G. Dawson, Esq., The Links, Plumstead Common, had a collection of Apples; and fruits were also shown by Mr. J. T. Hoar, gr. to T. J. Cooper, Esq., The Grange, West Moulsey; Messrs. Paul & Son, Cheshunt; Messrs. S. Spooner & Sons, Hounslow Nurseries, Middlesex; Mr. W. Poupert, Twickenham; and Mr. A. H. Richmond, gr. to the Dowager Lady Freake, Fulwell Park, Twickenham.

DALE, GLASGOW, AND WEST OF SCOTLAND HORTICULTURAL.

THE exhibition of the above, which was held in St. Andrew's Hall, Glasgow, was admitted on all hands to be the finest yet held in Glasgow. A large hall was filled with tables of choice plants for exhibition and competition. A score of tables were furnished with flowering and foliage plants—Crotons, Lilioms, Pancratiums, and Fuchsias, well interspersed with Ferns, predominated. Messrs. Thyne's table was conspicuous for its great height and the gracefulness of the arrangement, many drooping plants being employed; it was greatly admired.

Messrs. Austin & McAslan had also a grand table, which attracted many admirers; but the Medal of the *Gardeners' Magazine* was awarded to Mr. McGinley, Oakleigh Park, gardener, for his beautifully-arranged table of plants, as being the most meritorious exhibit in the Hall; but Mr. McBean would have undoubtedly received this award for his 1st prize collection of vegetables, but being a recipient so often, he remains an ex-champion. The specimen Crotons, Ferns, and Palms, were distributed throughout the halls with excellent effect. The long tables of cut flowers—Dahlias, Carnations, Phloxes, Asters, and herbaceous plants—were an immense show of themselves. Messrs. Dobbie of Rothesay, Forbes of Hawick, and Campbell of Blantyre, had great exhibits of mostly every choice outdoor flower of the season. Pansies were in great force, many of them quite new in character; so were Dahlias, especially in the classes of Cactus and single varieties. Messrs. Campbell and Forbes had Hollyhocks in great variety, and quite free from disease. Passing round the platform, immense Palms, Ferns, and Lycopods as a ground-work, formed a handsome screen to the musicians in front of these fine plants; and at a lower level was a screen to the tubs and pots by a line of Vines in pots loaded with fruit. Passing onward, large banks of Gladioli filled the whole end of one of the lesser halls. The dinner-table decorations were capitally represented, Mr. McNeil, Shawlands, being an easy 1st. Mirrors, on which tracings of Lycopods and handsome leaves were carelessly laid, had a charming effect. Vases, from which grasses, mosses, and graceful foliage hung, was very tasteful. The fruit was of fine quality (not often a prominent feature among such decorations), and the other accompaniments were also of the best possible. Messrs. Smith & Son, Glasgow, were 2nd with a choice display. We pass many extra good Roses for the season. The largest exhibitors of these were Messrs. Cocker of Aberdeen, and Robinson of Helensborough Nurseries.

The Fruit.—There was the largest display of fruit that has ever been witnessed in Glasgow, and some grand bunches of Muscat of Alexandria were tabled. The 1st prize for two bunches went to Mr. Day, Gallo-way House, out of twelve exhibits. In the class for four bunches of Grapes, Mr. Leslie, Perth, had excellent Muscats, Gros Maroc, Black Alicante, and Madresfield Court; Mr. Day was a capital 2nd, the competition being very strong. For Black Hamburg Grapes, 1st, Mr. Menzies, Dunipace Gardens, with finely finished bunches; but many of the other exhibits in this class were but poor. In the collections of fruit, Mr. Murray, gr., Culzean Castle, was well to the front, his Muscat Grapes, Queen Pine, Pears and Apples were very good; 2nd, Mr. Bean. In the collection of six sorts, Mr. Halliday, Ayr, was 1st, his Muscat Grapes were superb; Mr. McConochie was a good 2nd.

For a collection of hardy fruit, 1st, Mr. Day, with an excellent assortment, the Figs, Apples, and Pears being of great merit. This class was largely represented, and all was good; Melons were beautiful, but the worst in quality we ever tasted at any show. Some shabby-looking fruit, with scarcely any perfume, were placed 1st, 2nd, and 3rd. The three bunches of Grapes set up by Messrs. Cross (exhibited along

with collections of flowers and plants) were large, handsome, and finely coloured, and said to be grown with the aid of their special manure. The Apples and Pears in their various classes were never excelled, and showed what a warm summer can do in maturing and beautifying hardy fruits; and they are nearly a month earlier than usual. Some large bunches of Grapes for heaviest were shown. A bunch of Gros Guillaume weighed 11 lb., and was finely finished; a fine Muscat was also noticed in this competition.

Vegetables.—One of the finest displays ever seen in Scotland filled a large division of one of the halls. The collection of Mr. Bean was as near perfection (so said experts) as could be desired. His Leeks, Cauliflowers, Peas, Onions being of great excellence. Mr. Lowe, of Stirling, was a good 2nd. We counted more than twenty collections, and each was of first-rate quality. In the Leeks classes, which were many, Mr. McBean surpassed himself, as he did with Onions. Roots, Kales, and the endless pots of Parsley were strong in competition—1200 entries were booked for this grand exhibition. *M. T.*

ROYAL CALEDONIAN.

SEPTEMBER 13.—The friends of this prosperous society may congratulate themselves on the great success of their autumnal exhibition. The fine weather, large attendance, and two thousand exhibits on Wednesday last, surpassed any of the ordinary shows which have taken place under the management of the "Zealous Veterans," whose enthusiasm (on these great occasions) is so manifest that they are not slow to give expression to their delight.

The exhibits in the plant classes were above par. The cut flowers (some from far north and south of Scotland), were of great excellence, and did not indicate any injury from the season being so early, dry, and warm.

The fruit, in many classes, was finer than ever seen in Edinburgh, and the exhibits were more numerous than at any exhibition held by the society. Though some of the Grape classes were represented strongly in quantity and quality, there were some classes decidedly under the average.

The tables for "exhibition only," were finer than usual, and more numerous. Entering at the east side, a long table of large specimen Ferns blocked the way somewhat, but they were most creditable specimens.

Davallia, *Pteris serrulata*, *P. major*, *P. cristata*, and *Adiantums* were of immense size, and in fine health.

Dickson & Co., as usual, showed extensively. Pansies, Apples, and Pears (hundreds of dishes), and Plums made an attractive display. Specimen plants occupied the centre of their large table. Fuchsias from Mr. A. Thomson and Mr. Anderson were much finer than usual.

Mr. Methven's table of Begonias was a great attraction, the varieties distinct and of much merit. In addition to this, they had a long table of choice decorative plants, Caladiums and Crotons of rich colour, Dracenas, and flowering plants tastefully interspersed. Messrs. Birkenhead had a table about 65 feet long filled with collections of Ferns. We here come to the gardeners' tables for competition, Mr. McIntyre, Darlington, being 1st with a table tastefully arranged. Mr. Wood, gr., Oswald Road, was a good 2nd. Cunningham & Fraser were well represented by collections of Hollies. Messrs. James Dickson & Sons and Messrs. Laird were strong in specimen Hollies and Conifers, which had a fine effect at the west end of the hall. Mr. Phillips, Granton Road, had a fine display of *Arancaria excelsa*, arranged for effect. Mr. John Downie had one of the most telling tables arranged for effect, with choice stove and greenhouse plants; and a second one of flowering plants. Passing long tables of zonal Pelargoniums and cut flowers, we arrive at the specimen Crotons for competition. The huge pair from Mr. Lunt, Keir House Gardens, surpassed any seen at Edinburgh for many years; and Mr. McIntyre, Darlington, was 2nd out of eight exhibits. We now come to the table of Mr. Campbell, nurseryman, Blantyre, laden with cut Carnations, Picotees, Dahlias, Pansies, &c., who has taken 1st prize for Dahlias and Picotees at all the shows where he has exhibited this year.

Mr. Forbes, Hawick, as usual, had a large and varied group, chiefly herbaceous plants and hardy florist flowers. Mr. Lister, Rothesay, had an immense display of cut flowers; so had Messrs. Laird, Edinburgh, Mr. M. Cuthbertson, Rothesay. Mr. Dobbie from the same place exhibited cut flowers in excellent form. Mr. Cocker, Aberdeen, made a great display of cut

flowers—of great merit but too numerous to particularise. We now reach the most attractive table in the show laden with bouquets and Orchids. Mr. Curror, Eskbank, was 1st for four Orchids, *Oncidium incurvum* was an immense plant (about 7 feet across), with grand spikes of inflorescence; *Vanda cœrulea*, *Miltonia spectabilis*, and *Cologne Massangana* were all good. Mr. Wilson, Kelvinside, was 2nd, *Odontoglossum grande* and *O. crispum* were in fine form.

For *Odontoglossums*, *Cypripediums*, and *Cattleyas*, Mr. Sharpe was 1st in each class; a great table of very fine Cockscombs were a change, and were very attractive.

Fruit.—Passing a wealth of cut *Gladioli* and other brilliant flowers, we now reach the fruit classes. The collections of twelve dishes were as fine as we have seen in the North. Mr. Hunter, gr., Lambton Castle, took the lead, and his Grapes, Pears, Apples, Peaches Exquisite and Noblesse, and Nectarines, were of the highest merit. Mr. Kirk, Alloa, though less strong in hardy fruit than Mr. Hunter, was much stronger in Grapes; Mr. McKelvie was an excellent 3rd, Muscat of Alexandria Grapes in this collection being the finest in the exhibition.

In the collection of eight sorts, Mr. Hunter again led with a similar 1st, Mr. McKelvie making a capital 2nd.

In the class for twelve bunches of Grapes, Mr. Kirke was deservedly 1st, with as fine Grapes as we ever saw (surpassing his collection at the International Exhibition two years ago). Duke of Buccleuch, Gros Maroc, Madresfield Court, and Black Hamburg, were the varieties; Mr. Leslie, Perth, came in a good 2nd.

In the class for four bunches, Mr. Leslie came well to the front; his Muscats and Black Alicantes were of great merit. Mr. Caldwell, Langholm, was 2nd. Black Hamburgs we pass over, the average quality being but poor in this class, seldom well represented either in north or south. Alicantes and Madresfield Court were not equal to the average at Edinburgh in the single exhibits. Muscats were very fair, but Mr. McKelvie's pair out-distanced all others. Lady Downe's were only medium, being rather small in the berry. For the finest-flavoured Black, the exhibits were quite below average, and were chiefly Black Muscats. For the best White, for flavour, a Muscat of Alexandria was placed 1st, but it was not first-rate in flavour. Duke of Buccleuch led for any other white, Mr. Caldwell being 1st. Mr. McIntyre, The Glen, was 1st for bloom, with Alnwick Seedling.

In a collection of hardy fruits, Mr. Goodfellow, Kinfauns Castle, Perthshire, was 1st, with really good fruit. His Peaches, Dr. Hogg and Prince of Wales, were very fine in size and colour. Plums, Apples, and Pears, were also good.

For orchard-house fruits, Mr. Hunter, Lambton, out-distanced all his compeers with a grand exhibit.

Plums were finer in quality, and more numerous than we ever saw them at Edinburgh. Peaches were fine in several of the classes, but those from Mr. Lunt, Keir Gardens, were among the finest ever seen at Edinburgh, averaging over 10 oz. each in the dozen tabled; Late Admirable was the sort. Mr. Rigg, gr. at Tarvet, was 1st for Nectarines, having a first-rate dozen made up of Victoria and Pine-apple. The exhibition of Apples was equal to the best we ever saw anywhere in south of England, the size and colour being of highest merit, and hundreds of dishes were tabled in the various classes. Mr. Campbell, from Swansea, South Wales, had grand examples and was 1st in the best collections. Mr. Brown, Abercainey Gardens, had some beautifully-coloured fruit gathered from stone walls. Pears too were of great excellence, and hundreds of dishes were tabled.

Vegetables were a grand exhibition of themselves, every class being strongly represented; in that for twelve varieties there were twelve very good exhibits, Mr. Harper taking the lead. Onions, Celery, roots of all kinds, Tomatoes, and Cauliflowers were among the best we ever saw. The last-named was represented in twenty exhibits for six, and all first-rate. This was the finest autumn show ever held in Edinburgh by the Caledonian Horticultural Society.

Obituary.

JEAN BAPTISTE GUILLOT.—This morning's post brings me the sad intelligence of the death, on September 6, of Monsieur Jean Baptiste Guillot, of

Lyons, *rosiériste* and Chevalier du Merite Agricole, at the age of sixty-six years. I had known him from a very young man, and have had many pleasant and profitable conversations with him on Roses and Rose culture. He was, in my judgment, all things considered, the most successful of the modern French Rose growers. Every year he had something new and beautiful to show to those who visited his Rose garden in the Chemin des Pins, at Lyons. Of the many valuable varieties which he introduced I may mention:—Catherine Mermet, Madame de Watteville, Madame Hoste, Madame Falcot, Madame Cusin, Edith Gifford, Christine de Nécé, Ernest Metz, Gloire Lyonnaise, La France, Etoile de Lyon, Comtesse de Nadaillac, Horace Vernet, Gloire des Polyanthes, Mdlle. Eugénie Verdier; but the number is legion, and the quality of his seedlings in the bulk was usually above the average. He was much respected by his colleagues and by a large circle of amateur friends. The late Monsieur Jean Sisley once said to me:—"Guillot is a very honest man," and in saying that he meant to convey the highest possible praise. M. J. B. Guillot's father was a Rose grower of celebrity at Lyons some fifty years ago, and raised many good Roses, among others the Rose Géant des Batailles, which created quite a sensation in the gardening world at the time of its introduction (1846); the La France of the son twenty years later was hardly a greater triumph. Wm. Paul, Waltham Cross.

BOOK NOTICE.

A BIOGRAPHICAL INDEX OF BRITISH AND IRISH BOTANISTS. Compiled by James Britten, F.L.S., Senior Assistant, Department of Botany, British Museum; and G. S. Boulger, F.L.S., Professor of Botany, City of London College. (West, Newman & Co., 54, Hatton Garden.) 8vo, pp. 188.

We have had frequent occasion to allude to this list during its publication in the current volumes of the *Journal of Botany*, and have made numerous extracts from it in these columns. Many of our readers will, we are sure, be glad to learn that so useful a list has been reprinted in separate form, so as to be easily referred to. Moreover, considerable additions have been made, so that now the list includes the names of more or less prominent botanists from the earliest records to the end of 1892, and contains, we are told, 1825 entries. Considering the number of centuries over which the record extends, this seems an insignificant number. And yet there is no reason to complain of the authors on the score of undue reticence. They have, as they say, been liberal in including the names of those "who have in any way contributed to the literature of botany, who have made scientific collections of plants, or have otherwise assisted directly in the progress of botany exclusive of pure horticulture." The horticulturist, jealous for the honour of his craft, or anxious to obtain information as to the history of its heroes, need not fear that the compilers of this index have neglected his interests. So far as we have seen, there are included in this volume brief notices concerning most of the great horticulturists, such as Darwin, Hales, Herbert, Knight, Hooker, Lindley, Loudon, Wilson Saunders, Harpur-Crewe. Again, most of the great botanical collectors are mentioned, such as Masson, Douglas, Fortune, John Gould Veitch, and of course all or the great majority of those who have sent home collections of dried plants. The line seems to have been so drawn as to exclude only those collectors whose objects were wholly of a commercial character. Against this exclusion we have no right to complain; a compiler must lay down rules for himself, and the less he is tempted to diverge from them, the better will his book be. Nevertheless, it is clear that a strict adherence to such a rule may sometimes be the means of excluding historical data of great importance from a purely botanical point of view. Although not strictly to the point,

as the persons concerned are still living, and therefore on that ground would be properly excluded from such a list, let us take as a general illustration such a case as that of the discovery of *Eulophiella*, a new genus of Orchids from Madagascar. We are not expressing any opinion on what is a matter of controversy, but we take it as an illustration of great importance from a botanical point of view. This discovery has been utilised solely for mercenary purposes. Worse still, the discoverer, or one of the discoverers, actually announces, as if it were as great a credit to him as (if it be true) it is a disgrace, that he has destroyed all the plants within range, in order to enhance the commercial value of those which he collected! On moral grounds, such a man should certainly find no place in a scientific record, and yet from an historical standpoint he, as the discoverer and introducer of a new genus, may merit recognition. Fortunately for Messrs. Britten and Boulger, they were not called on to act in this case, which is one altogether beyond their limitations. We allude to it to show the great difficulty there is in laying down any rule as to the inclusion or rejection of names in such a book as the one now before us. A discovery made and turned to account solely for commercial purposes in the first instance may be, and, as we have just shown, is, sometimes, a matter of very great botanical importance.

The details given by the authors are very concise but considering that they comprise reference to other sources of information, they are adequate. The acquirements of the authors, and the unrivalled facilities at their disposition in the Museum, offer the best of guarantees that their work has been well done.

A few points may be noted for consideration, if a supplement or a new edition be called for. Patrick Browne, a writer on Irish and on West Indian plants, is described as Curator of the Oxford Botanic Garden. We are not wholly unfamiliar with the history of the Oxford garden, but we do not remember to have heard of this botanist having held the position assigned to him. The name of Theodore Hartweg certainly should have been included as having made large scientific collections of plants; and considering the physiological work of Thomas Rivers, the omission of his name is to be regretted. The name of the Rev. H. Harpur-Crewe is indexed under Harpur, but not under Crewe, where we should have expected to find it, and Thomas Lobb is, we believe, still living.

In consulting the book during its progress in detached parts and now as a whole, as we have done very frequently for some time past, we have found much to admire. We have in the great majority of cases found all that we could reasonably expect to find, and it has very seldom indeed happened that we have been disappointed in our quest. Those interested in the history of horticulture, as well as in that of botany, will find the work indispensable.

NEW INVENTION

THE EASY WEED-DESTROYER.

THE Standard Manufacturing Company of Derby submit for our examination one of these appliances. It consists of a metal receptacle, which communicates by means of an elastic tube with a long copper tube, provided with a small aperture at the bottom, and affixed to an ash staff which terminates in a spike. The metal cup, having been filled with weed-killer, the spike is thrust into the crown of the weed, the metal cup is then raised, an operation which ensures the passage of a drop or two of the weed-killer down the copper-tube, and through the hole at its end close to the spike, into the heart of the plant whose destruction is thus compassed. The invention is easy to work, ingenious and effective, and is specially suitable to amateurs and lady-gardeners, as no stooping is necessary.

MARKETS.

COVENT GARDEN, September 14.

[We cannot accept any editorial responsibility for the sub-joined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, &c.]

PRICES rule as last week.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Foliage plants, doz. 12 0-42 0
Aspidistra, per doz. 15 0-30 0	Fuchsia, per doz. ... 4 0-6 0
— specimen, each 7 6-21 0	Heliotrope, per doz. 4 0-6 0
Asters, dozen pots ... 3 0-6 0	Hydrangea, per doz. 12 0-24 0
Balsams, per doz. 3 0-6 0	Ivy Geranium, doz. 4 0-6 0
Campanula, per doz. 6 0-12 0	Lilium Harrisii ... 18 0-24 0
Chrysanthemums, doz 6 0-9 0	— lancifolium, dz. 12 0-18 0
— large plants, each 1 6-2 0	Marguerite, per doz. 6 0-12 0
Cyperus, per dozen 4 0-10 0	Mignonette, per doz. ...
Dracena, each ... 1 0-5 0	— pots 4 0-6 0
Erica caffra, per doz. 9 0-15 0	Palms, various, each 2 0-10 0
Ferns, various, doz. 4 0-9 0	— specimens, each 10 6-84 0
Ferns, small, per 100 ... 4 0-6 0	Pelargonium, p. doz. 6 0-12 0
Ficus elastica, each 1 6-7 6	— scarlet, p. doz. 3 0-6 0
	Solanums, per doz. ... 9 0-12 0

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 2 0-4 0	Orchids:—
Aster, dozen buds ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Bouvardias, per bun. 0 6-1 0	Odontoglossum
Carnation, doz. bun. 4 0-9 0	— crispum, 12 blms. 2 0-6 0
— dozen blooms 1 0-2 0	Peas, Sweet, various,
Chrysanthemums, 12	doz. bunches ... 3 0-6 0
— bunches ... 4 0-8 0	Pelargoniums, scar-
— doz. blooms ... 0 6-2 0	— let, p. 12 bun. 2 0-4 0
Cornflower, 12 bun. 1 0-2 0	— 12 sprays ... 0 6-0 9
Dahlias, doz. bun. ... 2 0-4 0	Poppy, doz. bunches ... 1 6
Eucharis, per dozen 1 6-4 0	Primula, dble. p. bun. 0 6-1 0
Gardenia, per dozen 2 0-4 0	Pyrethrum, 12 bun. 2 0-4 0
Heliotrope, 12 sprays 0 3-0 4	Roses, doz. bunches 3 0-8 0
Lilium lancifolium,	— Tea, per dozen 0 6-2 0
— p. doz. blooms 1 0-2 0	— coloured, dozen 2 0-4 0
— Harrisii, p. doz. 2 0-5 0	— yellow (Mar-
Maiden Hair Fern,	— chals), per doz. 1 6-6 0
— 12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-1 6
Marguerite, 12 bun. 1 6-3 0	Stocks, per bunch ... 0 4-0 6
Mignonette, 12 bun. 2 0-4 0	Sunflower, various,
Myosotis, 12 bunches 2 0-3 0	— dozen bunches ... 2 0-6 0
Pansy, per doz. bun. 1 0-2 0	Tuberose, 12 blms. 0 4-0 6
	ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 4- ...	Lettuces, per doz. ... 0 9-1 0
Beet, red, per dozen 2 0-3 0	Mushrooms, punnet 1 6-
Carrots, per bunch ... 0 4-0 6	Mustard and Cress,
Cauliflowers, each ... 0 3-0 6	— punnet ... 0 2
Cucumbers, each ... 0 2-0 6	Parsley, per bunch ... 0 2-0 3
Endive, per dozen ... 1 3-1 6	Shallots, per lb. ... 0 3-
Herbs, per bunch ... 0 3-1 0	Tomatos, per lb. ... 0 3-0 4
Leeks ... 0 2-	Turnips, per bunch ... 0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Pine-apples, St. Mi-
Cobs, per 100 lb. ... 30 0- ...	— chael ... 2 0-5 0
Grapes, per lb. ... 0 6-3 0	Plums, p. half-sieve, 1 3-3 0
Peaches, per doz. ... 1 0-6 0	

POTATOS.

The demand is not equal to the supplies, which are very heavy, except for best samples, which are readily picked up at good prices, 80s. to 90s.; ordinary stuff, 40s. to 50s.; and even at these prices slow trade. J. B. Thomas.

SEEDS.

LONDON: Sept. 13.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that the present remarkable and protracted drought naturally restricts the consumptive demand for seeds required for immediate sowing. *Trifolium incarnatum* is easier, and can now be bought in London on very moderate terms. Of Winter Tares the supply is getting short, and values tend upwards. Giant seed Rye offers at very tempting rates; French Italian continues scarce and dear. Rape seed is good and cheap. White Mustard steady. Linseed quiet. Not much doing in Peas and Haricots. Canary seed is slowly hardening.

FRUITS AND VEGETABLES.

BOROUGH: September 12.—Quotations:—Cabbages, 5s. to 6s. per tally; Turnips, 4s. to 5s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 1s. 6d. to 5s. 6d. per bag; Damsons, 1s. 6d. to 2s.; Plums, 1s. 8d. to 2s. 6d. per half-sieve; Apples, 2s. to 3s.; Pears, 2s. 6d. to 9s. per bushel.

SPITALFIELDS: September 12.—Quotations:—Cabbages, 5s. to 6s. per tally; Turnips, 4s. to 5s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. 6d. to 5s. 6d. per bag; Apples, 2s. to 3s.; Pears, 2s. 6d. to 9s. per bushel; Damsons, 1s. 6d. to 2s.; Plums, 1s. 6d. to 2s. 6d. per half-sieve.

STRATFORD: Sept. 13.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done at the undermentioned quotations:—Cabbages, 3s. to 6s. per tally; Cauliflowers, 1s. to

1s. 9d. per dozen; do., 5s. to 6s. 6d. per tally; Turnips, 2s. to 3s. 6d. per dozen bunches; Carrots, household, 60s. to 70s. per ton; Mangels, 20s. to 24s. do.; Onions, Dutch, 4s. 9d. to 5s. per bag; Apples, English, 1s. 6d. to 4s. per bushel; Plums, 2s. to 2s. 9d. per half-sieve.

FARRINGTON: September 13.—Quotations:—Onions, 4s. 6d. to 5s. 6d. per bag; Cabbages, 5s. to 6s. per tally; Turnips, 4s. to 5s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Marrows, 1s. 6d. per dozen; Cucumbers, 2s. to 2s. 6d. do.; Beans, 1s. 9d. to 2s. per half-sieve.

FARRINGTON: September 14.—Quotations:—Apples, 2s. to 2s. 6d. per bushel; Pears, 6s. do.; Plums, 2s. 6d. per half sieve; Damsons, 2s. do.; Tomatos, French, 3d. per lb.; Walnuts, 9s. to 11s. (50 kilo.); Cucum, large frame, 1s. 9d. per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: September 13.—Prices ranged from 50s. to 105s. per ton.

STRATFORD: September 13.—Quotations:—Light-land, 50s. to 65s.; Dark-land, 40s. to 50s.; Hebrons, 70s. to 80s.; Imperators, 50s. to 75s. per ton.

FARRINGTON: September 14.—Quotations:—Reading Giants, 55s. to 60s.; Hebrons, white, 80s. to 90s.; Bruce's, 55s. to 65s.; Sutton's Abundance, 70s. to 80s. per ton.

LONDON AVERAGES: September 13.—Magnums, 50s. to 80s.; Hebrons, 80s. to 110s.; Snowdrops, 80s. to 100s.; Regents, 70s. to 80s.; Champions, 60s. to 70s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending September 9, and for the corresponding period last year:—1893: Wheat, 25s. 7d.; Barley, 27s. 2d.; Oats, 17s. 4d. 1892: Wheat, 29s. 5d.; Barley, 27s. 8d.; Oats, 20s. 2d.

HAY.

Averages.—The following are the averages of prices at the principal metropolitan markets during the past week:—Clover, prime, 14s. to 16s.; new, do., 12s. to 14s.; inferior, do., 100s. to 120s.; hay, best, 14s. to 170s.; inferior, do., 90s. to 100s.; new mixture, 115s. to 130s.; and straw, 35s. to 54s. per load.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending September 9.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
0	2 + 86	0	+ 585	— 57	0	aver 158	27 6	30	25	
1	2 + 93	0	+ 381	— 21	4	— 128	17 2	42	33	
2	3 + 114	0	+ 417	— 62	2	— 110	13 7	44	57	
3	2 + 119	0	+ 515	— 37	4	— 107	12 7	52	44	
4	3 + 120	0	+ 670	— 47	2	— 105	13 2	47	42	
5	2 + 133	0	+ 568	— 43	2	— 100	12 9	53	46	
6	1 + 98	0	+ 523	— 63	4	— 125	23 7	48	37	
7	2 + 118	0	+ 703	— 91	1	— 114	17 7	41	37	
8	3 + 129	0	+ 714	— 70	2	— 104	19 6	61	49	
9	2 + 106	0	+ 585	— 104	1	— 136	21 7	30	32	
10	2 + 118	0	+ 639	— 100	3	— 119	20 4	46	36	
* 4 + 155	0	+ 820	— 52	1	+	108	15 0	73	58	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c. Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

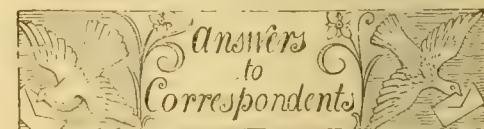
The following summary record of the weather for the week ending September 9, is furnished from the Meteorological Office:—

"The weather was very fine and dry during the earlier part of the week, but subsequently it became rather unsettled, with occasional rain. Thunderstorms were experienced in most parts of Great Britain on Friday, the accompanying rainfall being heavy in some districts.

"The temperature was above the mean, the excess ranging from 1° in 'Scotland, W.,' to 3° in 'England, N.E.,' the 'Midland Counties,' and 'England, S.W.,' and to 4° in the 'Channel Islands.' The highest of the maxima, which were recorded either on the 3rd or 4th in Ireland, on the 5th in Scotland, and on the 6th in most parts of England, varied from 81° in 'England, S.,' and 80° in 'England, E.,' to 72° in 'Ireland, S.,' and to 71° in 'Scotland, N.' The lowest of the minima were registered, as a rule, either at the beginning or end of the week, and ranged from 35° in 'Scotland, E.,' and 36° in the 'Midland Counties,' to 43° in 'England, N.W. and S.W.,' and to 54° in the 'Channel Islands.' At some of the inland stations ground frost was experienced.

"The rainfall slightly exceeded the mean in the 'Channel Islands,' and just equalled it in 'Scotland, N.,' but in all other districts there was again a deficit.

"The bright sunshine was very prevalent, and exceeded the mean in all parts of the Kingdom. The percentage of the possible duration ranged from 73 in the 'Channel Islands,' to 60 in 'England, S.W.,' and to between 41 and 53 in most other districts. In 'Scotland, N.,' and 'Ireland, N.,' however, the percentage only reached 30."



A STACK OF LOAM SWARMING WITH WOODLICE: C. B. W. They may be driven out of the stack by saturating it with strong manure-water once or twice; or, by taking the stack down and re-erecting it in alternate layers of steamy rank stable dung. This would improve the loam, the ammonia would drive out the insects, and the whole fitted for use in six months from the time of performing the job.

ADDRESS OF BOOKSELLER: G. Bligh, Chandos Street, W.C.

ANTIRRHINUM: J. M. R. Interesting as malformations, but of no use as florist's flowers. The corollas are split up into their constituent petals, or rather the five petals have not become united as they usually do in the course of growth.

BOOKS: N. S. No one book will afford you the information required, and you should obtain the following, *How to Lay-out a Garden*, by the late E. Kemp. It was printed and published by Bradbury & Evans, 11, Boulevard Street, E.C.; *The Art and Practice of Landscape Gardening*, by H. E. Milner, of the author, Dulwich Road, Norwood, S.E., and Simpkin Marshall, Hamilton, Kent & Co., Stationers' Hall Court, London; *Landscape Gardening*, by Samuel Parsons, G. P. Putnam's Sons, 27, King William Street, Strand, W.C. London's *Suburban Gardener* is a bit old-fashioned in its plans and other matters, but it advocates excellent methods of practice in general, and gives abundant reasons for everything. This and the first-named may be obtained from some of the best old book-shops. If pinned to one book, choose Kemp's.—Kelland. The book which we suppose you to mean is Chas. Whitehead's (not Muirhead), entitled *Hints on Vegetable and Fruit Farming*, 4th ed., London, John Murray, Albemarle Street, Piccadilly, price 1s. 6d. The other manuals on Gooseberries and Currants, *The Pear*, *The Apple*, all by Mr. D. T. Fish, are obtainable at the Bazaar Office, 170, Strand, W.C., some at 1s. others at 1s. 6d. each. An "authoritative" list of *British Apples* was published by the Royal Horticultural Society in 1884. It is a report of the committee of the National Apple Congress, held at Royal Horticultural Society Gardens, October 5 to 25, 1883. London: Macmillan & Co.—A. H. B. The Cape Colony has a warm temperate climate; and you would find *The Vegetable Garden*, by MM. Vilmorin-Andrieux, of Paris, a suitable book. There is an English edition published by John Murray, Albemarle Street, London.

CHRYSANTHEMUM BUDS DESTROYED: *R. O.* This is pretty certainly due to some nocturnal earwig, weevil, or larvæ. The injury does not appear very recent; but if you will go in and visit the plants at night, and tap them sharply over a sheet of paper, if you find anything send it up to this office.

CRAB: *J. A. K.* *Pyrus baccata* varieties.

FUNGUS ON CABBAGE: *T. H. S.* *Cystopus candidus*. Try the Bordeaux mixture, or dusting with sulphur. Bad cases should be destroyed by fire.

FIGS WITHERING AT THE STALK: *C. W. R.* Due to some error of treatment.

GARDENIA ROOTS: *F. F.* We are unable to find any insect on your cuttings. We have seen similar appearances produced by slime-fungi. Obtain some fresh plants from outside, and grow them under the same conditions, so as to see whether the fault is in your soil.

GENUS AND VARIETY: *J. H.* A genus is such a group of different kinds as *Rosa* or *Brassica*; a variety is such a particular form of, say, *Brassica* as *Kale*, or *Savoy*, or *Cauliflower*.

KID-GLOVE: *Anxious One.* The larvæ are probably those of a beetle of the genus *Dermestes*, which would find kids nice tender eating. The question is hardly horticultural, unless it be that your garden-gloves are attacked. *L.*

MUSCAT GRAPES: *E. K.* The shrivelling complained of may be due to several causes, as, for instance, lack of moisture in the soil, and immaturity at the time of cutting the bunches; or it may be the forerunner of "shanking," which is due to a variety of causes. Kindly send fruit, shoots, and foliage for examination.

NAMES OF FRUITS: *W. J. B.* Your Pear was much bruised and over-ripe; it is Williams' Bon Chrétien or Souvenir du Congrès, we cannot be sure which variety.—*G. Southcott.* Apple Cellini Pippin.—*J. W.* Flemish Beauty, a very fine specimen.—*C. H. H.* 1, Beurré d'Amanlis (west wall), other not recognised; 2, Beurré Hardy; 3, Madame Treve; 4, Bergamotte d'Esperen; 5, Jersey Gratioli Apple, true Galloway Pippin.—*Kent & Brydon.* Apple, most probably Lord Derby.—*George Waite.* Apples: 1, Stone's; 2, Golden Noble. Pears: 4, Durandean; 5, Williams' Bon Chrétien.—*B. R. D.* 1, Glou Morceau; 2, Van Mons Léon Le Clerc; 3, Beurré Bachelier.—*Pom.* Apple, Blenheim Orange.—*H. D. H.* Pear Beurré Clairgeau.—*An Old Subscriber.* 1, Cox's Pomona; 2, Emperor Alexander; 4, Beauty of Kent; 5, Grange's Pearmain; 6, not known.—*G. P.* 1, Beurré Hardy; 3, Pomme de Neige; 4, Flower of Kent; 5, Tower of Glamis; 6, Warner's King; 7, Cox's Orange Pippin.—*A. C.* Yarm. 1, Manx Codlin; 2, not known; 3, Bishop's Thumb; 4, Clapp's Favourite; Plum, Lawson's Golden.—*J. P.* 1, Lord Suffield; 2, Nonsuch; 3, French Crab; 4, Maltater; 5, Barchard's Seedling; 6, Alfriston.—*George Woolgar.* 1, Col. Vaughan; 2, Kerry Pippin.—*Alph.* Your Piums were quite decayed.—*M. B.* Chislehurst. Pear Beurré d'Amanlis; 1, Stone's; 3, Duke of Devonshire; 4, Old Nonpareil; 5, Golden Spire.—*J. S.* Knole. 1, Souvenir du Congrès; 2, Beurré d'Amanlis; 3, Comte de Lam; 4, Soldat d'Esperen; 5, Beurré Bosc.—*Chas. Young.* 1, Vicar of Winkfield; 2, Althorp Crassane; 3, Glou Morceau; 4, General Tottleben; 5, Louise Bonne of Jersey; 6, Passe Colmar; 7, Winter Doyenné; 9, Vicar of Winkfield; 11, Marie Louise; 15, Beurré Clairgeau.

NAMES OF PLANTS: *A. B. B.* 1, a *Solidago*, we do not know which one; 2, *Achillea Ptarmica*, double flower; 3, *Achillea Ptarmica*, single; 4, *Staphylea pinnata*; 5, *Erigeron canadensis*.—*Ancient.* *Helianthus decapetalus*, *Malope grandiflora* (Malvaceæ).—*D. J.* *Broussonetia papyrifera*.—*J. J. S.* 1, *Arundo Phragmites*; 2, *Alopecurus agrestis*; 3, *Melica uniflora*; 4, not recognised, perhaps an *Agrostis*; 5, *Agrostis vulgaris*; 6, *Agrostis alba*; 7, *Aira flexuosa*; 8, *Milium effusum*; 9, *Bromus giganteus*.—*J. R.* The one with the leaves much tapered at the base and yellowish fruit is *Cratægus punctata*; the other is one of the many forms of *C. coccinea*.—*Reader.* *Cratægus punctata*, red fruits. *Pyrus Aria*.—*W. C. & Sons.* One of the many forms of *Phillyrea latifolia*; your specimens show how variable the plant is.—*Viridis.* *Cratægus punctata*.—*R. B.* Chislehurst. *Lobelia speciosa*, one of the varieties of *L. erinus*, of which there are many.—*C. W.* 1, *Nephrodium molle*; 2, *Pteris tremula*; 3, *Adiantum tenerum*; 4, *Poly-podium phymatodes*; 5, *Aspidium Sieboldii*; 6,

Lastrea aristata variegata; 7, *Asplenium cicutarium*; 8, *Adiantum macrophyllum*. *Firgrove.* 1, *Asplenium Ruta-muraria*; 2, *A. Trichomanes*; 3, *Ceterach officinarum*.—*Oxon.* *Ampelopsis Veitchii*; Pears later on.—*W. T.* *Lycopodium clavatum*; getting scarce in the south.—*H. F.* 1, *Abies pectinata*; 2, *A. Nordmanniana*.—*S. M.*, *Banbury.* 1, *Adiantum formosum*; 2, *Pteris adiantoides*; 3, *Aspidium* (*Cyrtomium caryotideum*); 4, *Adiantum hispidulum*; 5, send in flower; 6, *Galega officinalis alba*.—*T. Wakeford.* 1, *Lygodium scandens*; 2, *Carex variegata*; 3, *Aspidium* (*Cyrtomium*) *falcatum*; 4, *Adiantum hispidulum*; 5, *Pteris argyræa*; 6, *Gymnogramma ochracea*.—*A. D.* *Ledum latifolium*. *W. B.* 1, *Solidago canadensis*; 2, *Achillea Ptarmica*; 3, *A. P. fl. pl.*; 4, *Aster* not recognised; 5, *Pelargonium* next week; 6, *Lonicera japonica*.

SEEDLING APPLES: *W. H. Manning.* A promising enough fruit, quite distinct in our opinion.

SENECIO, FUNGUS ON: *T. S. W., G. P., and others.* The Orange fungus is, we believe, *Coleosporium senecionis*. In another form or stage of growth it grows on Scotch Pines and other Conifers, when it has quite a different appearance.

SHRUBS FOR GROWING IN THE SHADE OF TREES: *W. T. H.* *Yew*, *Cornus Mas.*, *Cornus alba*, *Ruscus aculeatus*; *Cotoneaster microphylla*, if shade be not too dense; *Berberis* (*Mahonia*) *aquifolia*, *B. Darwinii*, *B. vulgaris*, fairly well; common *Hazel*, *Blackthorn*, *Buxus*. *Rhododendrons* are partial to shade, and usually flower well. *Skimmia japonica* (oblata of gardens), common *Laurel*, *Laurestinus*, *Aucuba* may be planted at points furthest from the shade. They stand drip without injury. Those in italics are the best for dense shade.

TANKS: *Anxious.* If the soil is of a solid nature and not likely to yield to pressure, the brick walls of the sunken tank at the side may be made of 9-inch work set in cement or mortar made of lias lime; and space should be left between the outside of the walls and the soil, of say 9 inches, and this space to be filled in with fine concrete. The bottom in any case ought to be laid on a bed of concrete 1 foot thick, and formed of three layers of sound brick set on edge in cement. An $\frac{1}{4}$ -inch coating of Portland cement should be laid on floor and sides. Concrete is formed of 80 parts small pebbles, 40 parts sharp clean sand (river), and 10 of ground lime; mix first in the dry state, and then throw water over it to make the mixture perfect, turning it once or twice with the shovel. No time should be lost in using it; and its deposit should be so managed that when tipped from the barrows it will get a fall of several yards, the mass being thereby driven closer together. A layer of concrete 7 or 8 inches thick should be allowed to set before adding another. Height of elevated tank:—The bottom should be 10 to 20 feet above the top of the Cucumber-house.

TOMATOS TO BOTTLE: *Constant Reader.* As you would Gooseberries, but they do not keep well. Can any reader suggest a better method?

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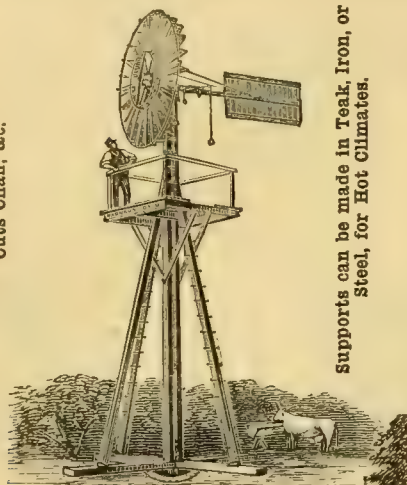
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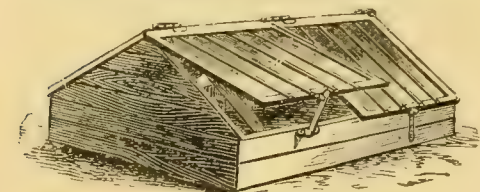
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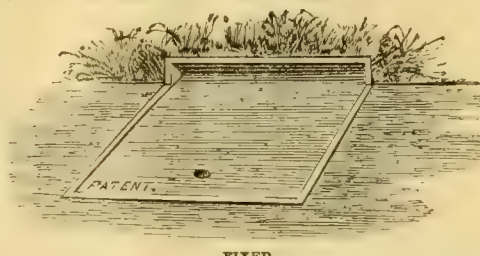
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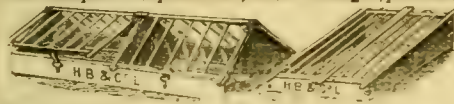
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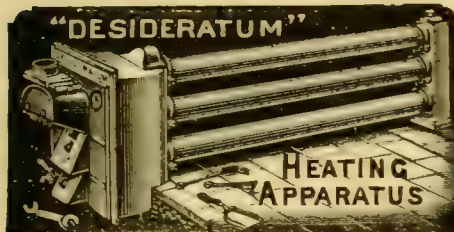


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 Mr. R. RUTHERFORD, Head Gardener for nine years at Bolam Hall, as Head Gardener to J. H. BURN, Esq., Beaconsfield Hall, Cullercoats, Tynemouth.
 Mr. J. T. BOWSER, from the Gardens, Swarland Hall, Felton, Northumberland, as Head Gardener to A. DE LAUDE LONG, Esq., Crosby Cote, Northallerton.
 Mr. GEORGE PRITCHARD, late Head Gardener at Milburn, Esher, as Head Gardener to the Right Hon. Lord BATEMAN, Shobdon Court.
 Mr. CHARLES BELLWOOD as Gardener to the Earl of LOVELACE, East Horsley Towers, Surrey.
 Mr. W. NIELD, for the last seventeen years Gardener to T. W. TATTON, Esq., Northenden, Cheshire, has been appointed by the Cheshire County Council a Lecturer in Horticulture.
 Mr. F. TUGWOOD, Foreman with Mr. WADDS, Birdsall Gardens, York, as Head Gardener to the Hon. Mrs. DOUGLAS PENNANT, Lillingstone, Bagnell, Buckingham.
 Mr. ANDREW BARLAS, from Mr. IRELAND'S Nurseries, Edinburgh, as Head Gardener to Mrs. WALLACE, Glassingail, Dunblane, Perthshire.
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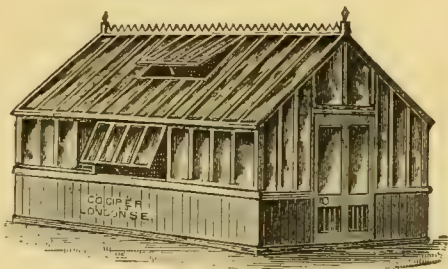
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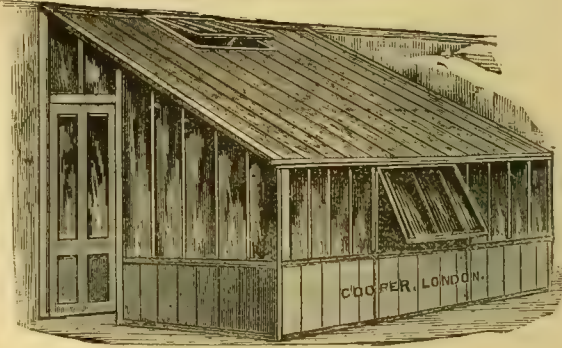
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THESE GREENHOUSES are made especially for Amateurs at a nominal figure, thereby coming within the reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectable by any handy man or gardener in a few hours. The framework is substantially constructed of red deal, the lower part being filled in with good, sound, well-seasoned, tongued and grooved matchboards. The house is fitted with door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and stages for each side, and good 16oz. glass throughout. All parts are uredly packed, and put on rail; or delivered, erected, and glazed complete, within twenty miles of London Bridge, at the prices mentioned on each side.



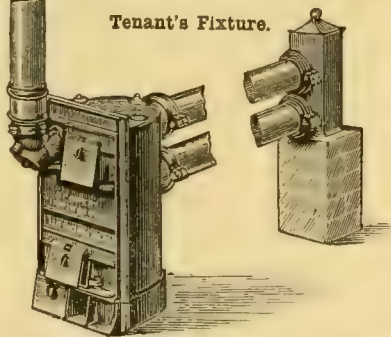
Long. Wide. High.			to eaves ...		Delivered and Erected Complete within
7ft.	5ft.	7ft.	4ft.	to eaves ...	On Rail. 20 miles.
7ft.	5ft.	7ft.	4ft.	...	£2 16 0 £4 5 0
8ft.	5ft.	7ft.	4ft.	...	3 10 0 5 0 0
9ft.	6ft.	7ft.	3in. 4ft.	...	4 0 0 5 10 0
10ft.	7ft.	7ft.	6in. 4ft. 6in.	...	5 0 0 6 15 0
12ft.	8ft.	8ft.	5ft.	...	6 0 0 8 0 0
15ft.	10ft.	8ft.	6in. 5ft.	...	8 10 0 12 0 0
20ft.	10ft.	9ft.	5ft. 6in.	...	12 0 0 16 0 0
25ft.	10ft.	9ft.	5ft. 6in.	...	17 0 0 22 0 0
50ft.	10ft.	9ft.	5ft. 6in.	...	30 0 0 40 0 0
100ft.	10ft.	9ft.	5ft. 6in.	...	50 0 0 70 0 0

Long. Wide. High.			to eaves ...		Packed on Rail. Erected within
7ft.	5ft.	7ft.	4ft.	to eaves ...	£1 8 0 £3 15 0
7ft.	5ft.	7ft.	4ft.	...	3 0 0 4 10 0
8ft.	5ft.	7ft.	4ft.	...	3 10 0 5 0 0
9ft.	6ft.	7ft.	4ft.	...	4 10 0 6 0 0
10ft.	7ft.	7ft.	6in. 4ft. 6in.	...	5 10 0 7 5 0
12ft.	8ft.	8ft.	5ft.	...	8 0 0 11 0 0
15ft.	10ft.	8ft.	6in. 5ft. 6in.	...	11 10 0 15 10 0
20ft.	10ft.	8ft.	6in. 5ft. 6in.	...	16 10 0 21 0 0
25ft.	10ft.	9ft.	5ft. 6in.	...	28 0 0 38 0 0
50ft.	10ft.	9ft.	5ft. 6in.	...	45 0 0 65 0 0

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I respectfully beg to inform all readers of this Paper that the first edition (100,000 copies) of my Revised PRICE LIST, consisting of 400 Pages and about 1200 Illustrations, bound in cloth, is now in preparation, and will be published in about three weeks, when I shall have much pleasure in forwarding to every person who has applied for a Price List up to August 24th of this year one post-free, and to all persons up to September 23rd who send Three Stamps for postage, after which date the price will be One Shilling each, post-free. This List will be the most Complete in the trade, and has cost several thousand pounds to produce.

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ESTABLISHED 1841. No. 2752.

No. 352.—VOL. XIV. {THIRD SERIES}

SATURDAY, SEPTEMBER 23, 1893.

[Regt. as a Newspaper. {PRICE 3d. POST-FREE, 3d.}]

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May now be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

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On view morning of Sale, and Catalogues had.

Thursday Next.—Plants from Belgium.

100 AZALEA INDICA, 50 A. MOLLIS, 30 DRACÆA AMABILIS, 30 D. TERMINALIS, 30 DRACENAS, of sorts; 60 PALM, CAMELLIAS, &c., from Belgium; English-grown LILIES, NARCISSUS, and other BULBS.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, September 28, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Woking.

IMPORTANT TWO DAYS' SALE of unusually well-grown NURSERY STOCK, by order of Mr. R. Collyer.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, the Cart House Lane Nurseries, Woking, on MONDAY and TUESDAY, October 16 and 17, a large quantity of exceptionally well-grown NURSERY STOCK, which has been carefully prepared for removal.

Fuller particulars will appear next week.

Silverdale Lodge, Sydenham.

TWO DAYS' UNRESERVED SALE of well-grown ORCHIDS and PLANTS, by order of Walter Cobb, Esq., who is leaving the Residence.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, as above, on MONDAY and TUESDAY, October 9 and 10, at half-past 12 o'clock each day, a very fine Collection of about 1500 ESTABLISHED ORCHIDS, including a splendid lot of 400 Cattleyas, 100 Lycastes, grand pieces of Lelia grandis tenebrosa, 100 Colognye cristata, 3 C. c. alba, 400 Masdevallias, 100 Dendrobiums, 100 Cypripediums, 100 Phalaenopsis, STOVE and GREENHOUSE PLANTS in variety, 4 two-light Frames, 2 capital Horses, and effects.

May be viewed the Friday and Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Hounslow Heath, Middlesex.—Preliminary Notice. EXPIRATION OF LEASE. CLEARANCE SALE of the whole of the NURSERY STOCK, at this Branch Nursery, by order of Messrs. Charles Lee & Son.

IMPORTANT TO THE TRADE and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, The Nursery, Hounslow Heath, Middlesex, on MONDAY, October 9, and following day if necessary, the whole of the VALUABLE NURSERY STOCK, which is in capital condition for removal, and includes:—

3000 Victoria Plums	4000 Apples, Standards and
700 Cedar do.	others, of the most
330 Gisborne do.	popular kinds
Hundreds of Rhododendrons	2000 Dwarf H.P. and Tea
1600 Poplars of sorts, 10 to 14 feet	Roses

Thousands of Limes and other Standard Trees, enormous quantities of Conifers in various sizes, and other Stock.

Further particulars will appear in future announcements. The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, at the Royal Vineyard Nursery, 2, Hammer-smith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Preliminary Notice.

MR. HORNE'S GREAT SALE OF FRUIT TREES and BEDDED HOP SETS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will conduct the above ANNUAL SALE, on the Premises, Perry Hill Cliffe, near Rochester, on WEDNESDAY, October 4.

Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Isleworth.

ANNUAL TRADE SALE of GOLDEN EUONYMUS and young CONIFERS for potting, window boxes, and growing on, by order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION on the Premises, The Wood Lane and Arboretum Nurseries, Isleworth, Middlesex (five minutes' walk from Isleworth or Osterley Park Stations), on THURSDAY, October 5, at 12 o'clock precisely.

4000 BEST GOLDEN EUONYMUS,

from 9 to 15 inches, in splendid condition and colour; undoubtedly the finest lot ever offered at this nursery.

Thousands of SMALL SHRUBS for BOXES, including Golden Privet, Aucubas, Yellow-berried Tree-Ivies, Osmanthus, Gold and Silver Box.

4000 CONIFERS, 9 to 24 inches, for boxes, potting, or growing on.

Thousands of Specimens from their famed Collection of ORNAMENTAL TREES,

consisting of Cornus elegantissima, flowering Catalpas,

Tulip Trees, Planes, Purple Beech, Limes, Acers, Chestnuts, Poplars, and other Standard Trees.

1000 GREEN HOLLIES, 2 to 6 feet.

Hundreds of well-grown Erica hymenalis, gracilis, and others; Acacia Drummondii, Eurya variegata, Cyclamen.

500 KENTIAS, COCOS and other PALMS, &c.

May be viewed one week prior to Sale. Catalogues had at the Nurseries; at the Royal Vineyard Nursery, 2, Hammer-smith Road, W.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—Special attention is drawn to the unusually fine stock of Ornamental and other Trees, which are a great feature at the Arboretum Nursery, and intending purchasers are invited to inspect the lots whilst the foliage is still on the trees.

Bagshot.—Absolutely Without Reserve.

Important TWO DAYS' SALE of unusually well-grown NURSERY STOCK, by order of Mr. R. Mason.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION on the Premises, the Windlesham Nurseries, Bagshot, Surrey, a few minutes' walk from Bagshot Station, on TUESDAY and WEDNESDAY, October 3 and 4, at 12 o'clock each day, 1000 Standard and Bush Hybrid RHODODENDRONS, of the choicest sorts, 2000 R. ponticum, 3 to 3½ feet; 990 AZALEA PONTICA, 1½ feet; 400 Variegated Gold and Silver Hollies, 1½ to 3 ft.; 5000 Green Hollies, 6 to 9 inches; 10,000 Portugal, common, and other Laurels, 9 inches to 3 feet; 100 Golden Yews, 2 to 3 feet, many thousands of Conifers and Evergreen Shrubs, 1 to 6 feet, including some fine specimens; 300 Refinopora plumosa aurea, 2300 Thujaopsis borealis and dolobrata, Thuja gigantea and Lobbi, 2500 Cupressus, 3 to 3½ feet; 4500 Pinus austriaca, 1½ to 6 feet; 800 Weymouth Pines, 3 to 9 feet; 300 Araucaria imbricata, 2 to 4 feet; 6000 Berberis aquifolium Darwinii and stenophylla, 9 inches to 4 feet; some thousands of Standard Ornamental and Forest Trees, 1000 Purple Beech, 700 Limes, Elms, and Planes, 6 to 10 feet; 2000 Standard and Pyramidal Fruit Trees, 500 Kentish Cob and Filbert Nuts, and other stock.

The stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers & Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—Purchasers can arrange with Mr. Mason to lift and forward any lots to any part of the country.

Bulb Sales.—Birmingham.

MESSRS. JAMES AND BAXTER (late THOMAS B. JAMES), beg to announce that they are holding their SALES of DUTCH BULBS, LILIAM HARRISII, White Roman HYACINTHS, Paper White, &c., &c., EVERY TUESDAY, at half-past 11 o'clock A.M., at their Spacious Sale Rooms, 12, Bull Ring, Birmingham, usual number of lots 1300 to 1500.

The Weekly Sales of Azaleas, Camellias, Ficus, Palms, Dracenas, and other Plants from Belgium, commence in September, and continue until March next.

The Weekly Sales of Roses, Fruit Trees, Ornamental Flowering Trees, and General Nursery Stock, will commence in October, and continue until March.

Sales of Orchids are held every month. Sales of Cut Flowers every Wednesday and Friday, at half-past 4 o'clock P.M.

Sales and Valuations of Nursery Stock, Live and Dead Farming stock, &c., conducted in any part of the country, on reasonable terms.

All Catalogues post-free; goods purchased (no commission charged), and packed and forwarded.

JAMES AND BAXTER, Horticultural Auctioneers and Valuers (both many years with Messrs. Protheroe & Morris).

Bowes Manor, Bowes Park, N.

SALE of the REMAINING CONTENTS of the RESIDENCE, also the CONTENTS of the GLASSHOUSES.

MESSRS. PRICKETT AND ELLIS will sell by AUCTION, on the Premises, as above, on SEPTEMBER 27 and 28, at 1 o'clock precisely each day, the remaining Contents of the Residence, also the Contents of the Glasshouses, consisting of ORCHIDS, PALMS, STOVE PLANTS, FERNS, &c.

To be viewed Tuesday previous and mornings of Sale, and Catalogues obtained of the Auctioneers, 57, Chancery Lane, W.C., and 32, High Street, Highgate, N.

Ham Green.

(The Estate of W. H. Miles, Esq., deceased.)

About Three Miles from the Suspension Bridge, Clifton, and Ten minutes' walk from Pill Railway Station.

SALE of valuable ORCHIDS, FERNS, STOVE and GREENHOUSE PLANTS, Eight Capital GARDEN FRAMES, TOOLS, &c.

MESSRS. ALEXANDER, DANIEL, SELFE AND CO. will sell by AUCTION, on the premises, on MONDAY, September 25, 1893, punctually at 12 o'clock, the remaining contents of the above Mansion, Gardens, and Premises.

On view morning of Sale. Catalogues may be obtained of the Auctioneers, Bank Chambers, Corn Street, Bristol; and 34, Old Jewry, London, E.C.

"Redlees," Isleworth, Middlesex.
CLEARANCE SALE.
TO PRIVATE BUYERS, GARDENERS, FLORISTS, AND
OTHERS.

MR. WOODS has received instructions to
SELL by AUCTION, on the Premises as above, on
SATURDAY, September 30, 1893, at 1 o'clock, a choice assort-
ment of STOVE and GREENHOUSE PLANTS, the contents of
the various GLASSHOUSES; also HARDY FERNS, HEATHS,
CHRYSANTHEMUMS, &c. Among the Plants may be men-
tioned, Rare Orchids, Foliage and Tuberous Begonias, Show
Pelargoniums, Fuchsias, Specimen Deutzias, Vallotas, Azu-
leas, Myrtles, Specimen Camellias, Cyclamen, Agapanthus,
Geraniums in variety, Crotons, Dracenas, Cannas, Palms,
Ceratiums, &c.

May be viewed day preceding and morning of Sale, and
Catalogues had at the "George" and "Northumberland
Arms," Isleworth; of Messrs. SKEWES-COX, NASH AND
CO., Solicitors, 5, Lancaster Place, Strand, London, and Rich-
mond, Surrey; and of Mr. WOODS, Auctioneer and Estate
Agent, Hounslow.

N.B.—The Noble RESIDENCE, Stabling for 20 Horses,
Grounds and Park-like Meadows, in all about 17 Acres, to be
LET or SOLD; terms of the Auctioneer.

FOR SALE, a SMALL NURSERY, five
Greenhouses, &c., fitted with Hot-water, Stock-in-Trade,
&c.—Apply to W. H., The Nursery, Park Row, Greenwich, S.E.

SCOTLAND.—TO LET, 25 Acres. In Grass
fifteen years. Excellent for Fruit Cultivation. Climate
mild. Very early. Good Markets accessible.
B. S., 41, Wellington Street, Strand, W.C.

TO BE LET, ONE of the FINEST COM-
PACT NURSERIES in London, comprising six Span-roof
Houses and Show House, four of which 60 feet long, and
two are 40 feet. Ground well-stocked. Disagreement in family
cause of letting.—Apply, 81, Danby Street, Peckham.

TO BE SOLD.—The BUSINESS of a NUR-
SERYMAN, SEEDSMAN, High-class Florist, and Land-
scape Gardener, consisting of The Home Nursery and two
branches, all situated in first-class positions, and having wide
spread and large connections, the turnover being about £3000
per annum, and making a handsome profit. The nurseries are
cramped with an immense and valuable stock in splendid
condition, and afford an opportunity rarely met with of acquiring
a well-established and thoroughly genuine concern. Incoming
for the whole about £3000. The fullest investigation.—Apply,
in first instance, C. S., *Gardeners' Chronicle* Office, 41, Wel-
lington Street, Strand, W.C.

Prize Cob Filberts.

MR. COOPER, Western Elms, Reading (late
of Calcot Gardens), is the largest grower of Prize Cob
Filberts in the Kingdom; 20,000 fine young Trees now ready
for Sale. Pamphlets and Price Lists on Application.

Re HOPWOOD & SONS,
NURSERYMEN, SEEDSMEN, and FLORISTS.
CHELTENHAM.

FOR IMMEDIATE SALE.
UNDER DEED OF ASSIGNMENT.
TENDERS will be RECEIVED for the
following Lots:—

LOT 1.—The Stock at Prestbury (nearly 7 Acres in extent),
consisting of many thousands of choice Fruit Trees, Forest
Trees, Rose Trees, Privet, &c.

LOT 2.—For Plants in a range of Greenhouses, and the
Nursery Grounds at Belle Vue Nursery.

LOT 3.—For Greenhouses, Hot-water Apparatus, Carts,
Tools, a strong Horse, &c., at Belle Vue Nursery.

LOT 4.—The Good-will of the Old-established Business
carried on over half a century. Turn-over between Two and
Three Thousand. Cash takings about £1 per day.

JOHN CORMELL, Trustee,
Belle Vue Nursery, Cheltenham.

GREAT SALE OF ORCHIDS.
BY ORDER OF THE LIQUIDATOR.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN) LIMITED,

Are selling their Immense Stock of

ORCHIDS

at greatly reduced prices, and subject to large
discounts.

Inspection is earnestly invited. A new DESCRIPTIVE
and PRICED CATALOGUE is now ready, and will be sent
Post-free on application.

The Company are also selling, at greatly reduced prices,
and subject to large discounts, their large Stock of: GRAPE
VINES, TEA ROSES in pots, FERNS, and General Stock of
STOVE and GREENHOUSE PLANTS. Descriptive and
Priced CATALOGUES Post-free on application to the
COMPANY.

THE VINEYARD & NURSERIES,
GARSTON, NEAR LIVERPOOL.

EXHIBITION.

HEREFORDSHIRE FRUIT and CHRYS-
ANTHEMUM SOCIETY.

The second ANNUAL SHOW will be held in the SHIRE
HALL, HEREFORD, on WEDNESDAY, THURSDAY, and
FRIDAY, November 15, 16, and 17, 1893, when amongst others,
the following prizes will be offered in the open classes:—Col-
lection of Apples Culinary and Dessert, 109 dishes, 1st prize,
100s. or Cup; 2nd, 40s.; 3rd, 20s. Collection of Pears, 24
dishes, 1st prize 50s.; 2nd, 20s.; 3rd, 10s. Several other open
classes. Chrysanthemums, group of, in pots, 1st prize 100s. or
Cup; 2nd, 40s.; 3rd, 20s., and other open classes. Schedule
of prizes and all particulars on application to the Hon. Sec.,
Mr. JOHN OUGH, 7, Clifford Street, Hereford.

BRADFORD CHRYSANTHEMUM
SOCIETY'S SHOW, November 10 and 11. Schedules
are now ready.—Apply to

JAMES KEIGHLEY, 23, Copthorne Road, Bradford.

Williams

WORLD-RENOWNED

BULBS,

Well Ripened and in Splendid Condition.

HYACINTHS,
TULIPS,
NARCISSI,
DAFFODILS,
CROCUS,

SNOWDROPS,
ANEMONES,
RANUNCULI,
IXIAS,
SPARAXIS.

For particulars see Illustrated CATALOGUE, forwarded
Gratis and Post Free to all applicants.

B. S. WILLIAMS & SON,

Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

WARE'S TUBEROUS BEGONIAS.

THE FINEST FLORAL DISPLAY OF THE SEASON.

A STUDY IN BRILLIANT COLOURS.

Hundreds of thousands of Plants Growing in the Open, are now in full flower at CROOK LODGE NURSERY,
BEXLEY HEATH. A Magnificent Bedding-out Show. No finer sight of the kind has ever been witnessed.
INSPECTION INVITED. Crook Lodge Nursery may be reached by train from Cannon Street or Charing Cross,
to Bexley, and 'Bus to Bexley Heath; from Fenchurch Street or Liverpool Street to North Woolwich, and 'Bus
to Crook Lodge.

Awards for Begonias during 1892 and 1893:—

FIRST PRIZE, International Horticultural Exhibition, July, 1892.
Silver-gilt Floral Medal, Great Temple Show, May, 1892.
Silver Medal, International Horticultural Exhibition, June, 1892.
Seven First Class Certificates, awarded by the Royal Caledonian Horti-
cultural Society, September, 1892.
Four First Class Certificates, awarded at the International Horticultural
Exhibition, July, 1892.
Three Awards of Merit, by the Royal Hort. Soc., London, July, 1892.
First Prize for Collection of Begonias, Royal Bot. Soc., April 26, 1893.
Silver Medal for Collection of Begonias, Royal Bot. Soc., April 26, 1893.

Special Award of the Highest Merit, by the Glasgow and West of Scotland
Horticultural Society, September, 1892.

First Prize, for Single Begonias, Crystal Palace, May 11, 1893.

First Prize, for Double Begonias, Crystal Palace, May 11, 1893.

Extra Prize, for Group of Begonias, Crystal Palace, May 11, 1893.

Silver-gilt Banksian Medal, Temple Show, May 25, 1893.

FIRST PRIZE, Gardening and Forestry Exhibition, July 1, 1893.

First Prize, Windsor Horticultural Show, July 3, 1893.

GOLD MEDAL, awarded by the Shrewsbury Horticultural Festival
Society, August 23 and 24, 1893.

Preliminary LIST with Descriptions and Prices ready shortly, and will be posted free on application.

ADDRESS FOR POSTAL COMMUNICATIONS:—

THOMAS S. WARE, HALE FARM NURSERIES, TOTTENHAM, LONDON.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

GLASSHOUSES and Choice PLANTS for SALE, within 50 miles of London, and easy distance from Railway Station, comprise 97,400 square feet superficial, well-built Glasshouses, Heating-pipes, 2 Saddle-boilers, 750 Orchids, 350 choice Stove-plants and Palms, 23 Orange Trees, and 600 Greenhouse Plants. The above is the property of a Gentleman leaving the neighbourhood, and will be sold for £300.—Apply to **SAMUEL B. CLARK AND SON**, Estate Agents, 10, Hanover Square, W.

FOR SALE.—FUCHSIAS, ten First-prize Specimens; two large **PALMS**. Cheap.
F. BRIGHT, Whiteknights, Reading.

CUTHBERT'S BULBS for **EARLY FORCING**.—Special quotations for large quantities. Descriptive CATALOGUES free.

R. AND G. CUTHBERT, Importers of French and Dutch Bulbs, Southgate, N. Established 1797.

ORCHIDS.—New and rare species a special feature. Catalogue forwarded post-free on application.
SEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich, London, S.E.

INTENDING PLANTERS should now VISIT OUR NURSERIES to inspect our extensive stock of Ornamental Trees, Fruit Trees, Roses, Rhododendrons, &c., extending over 150 Acres.
H. LANE AND SON, The Nurseries, Berkhamsted, Herts.

AMPELOPSIS VEITCHII, extra strong, in 48's, 6s. per dozen, 40s. per 100. Strong rooted layers of **OLD CRIMSON CLOVE**, 90s. per 100. **EUONYMUS AUREA**, stocky stuff, 65s. per 1000. **MACULATA AUREA**, 90s. per 1000. Cheap to clear.
JOHNSON AND CO., The Nurseries, Hampton.

FOR SALE, Souvenir de Malmaison **CARNATION** LAYERS, well-rooted, 500 Germania, good strong layers, out of pots, all at 30s. per 100; or 4s. per dozen.
J. LITTON, Grosvenor Cottage, Bath.

LARGE CAMELLIAS.—Special Offer, holding good up to the end of the present month. A quantity of these, in splendid health, and well set with bloom, will be sold at half usual prices, owing to room being wanted for other plants. Particulars on application to—
WM. PAUL AND SON, Waltham Cross, Herts.

Strawberries.
A FINE COLLECTION of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free.
THOMAS RIVERS AND SON, Sawbridgeworth.

DOUBLE NEAPOLITAN VIOLETS.—Magnificent, fine large clumps, just coming into flower. Will flower all the winter; 12s. per dozen; 2nd size, 9s. per dozen; good clumps, 6s. per dozen; Czar ditto, half above prices. Cash.—**FOREMAN**, Stanmore Park Gardens, Stanmore.

BOUVARDIAS.—Best varieties, in bud, 9s. per dozen.
SOLANUMS.—Well berried beautiful stuff, 12s. per dozen.
PTERIS FERNS, in variety, in small pots, 12s. 6d. per 100.
WALSHAW AND SON, Scarborough.

FOR SALE, 40 Pot **PEACH** and **NECTARINE TREES**. All good market sorts, about 8 feet high; carried about three dozen fruits each last season. Sold solely because short of room.
Apply to **C. D. WISE**, Toddington, Wincoburne.

500 CARNATIONS.—Picotees, Show Varieties, Malmaison, and Fancy Border: all true to name. Well-rooted plants, in 60's.
R. SHARPE, Low Hill Gardens, Wolverhampton.

THE NEW PINK SOUVENIR DE MALMAISON CARNATIONS, very strong, 9s. 6d. dozen; 70s. per 100. Cash with order.
JAMES GREEN, Reliance Nurseries, March.

CABBAGE PLANTS.—Early Offenham, 3s. per 1000; Rosette Colewort, 3s. per 1000; strong sturdy stuff. F.O.R. Cash with order.
W. GOARING, Haywards Heath.

VIOLETS.—Double Marie Louise, Comte de Braza, extra strong, healthy clumps, free from spider, 6s. per doz.; Czar, 3s.
GARDENER, Eywood, Titley, R.S.O.

CARNATIONS.—Old Crimson Clove, Pride of Penshurst, Raby Castle, extra strong and well-rooted layers, 3s. per dozen.
GARDENER, Eywood, Titley, R.S.O.

ORANGE TREES.—Four, fine and healthy, in 22-inch pots. What offers?
GARDENER, Eywood, Titley, R.S.O.

ORCHIDS.—Many rare and choice Cattleyas, Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST.
W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N.

Kent: the Garden of England.
GROW ONLY the BEST STRAWBERRIES, AND CONSULT
GEORGE BUNYARD AND CO.'S NEW LIST.
A Chester Gardener says:—"In all my long experience I never had such crops as from your Kent plants."
Extra fine plants in little pots and runners ready shortly.
The Old Nurseries, Maidstone.

ORCHIDS.

ANOTHER NEW IMPORTATION,

Just arrived from Brazil, in Splendid Condition.

FULL PARTICULARS FREE ON APPLICATION.

INSPECTION INVITED.

A. H. GRIMSDITCH, Importer,

5, CLAYTON SQUARE, LIVERPOOL.

Sole Agent for **CARLOS TRAVASSOS**, Rio de Janeiro.

DUTCH BULBS!

FRENCH BULBS!

AND
ENGLISH BULBS!

See our Special Wholesale CATALOGUE of BULBS. Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,

SEED AND BULB MERCHANTS.

EXETER STREET, STRAND, LONDON, W.C.

DECORATIVE PALMS.

KENTIAS, } Young PALMS, in small
PHENIX, } Pots, for Growing On;
Or,
SEAFORTHIA, } Carefully assorted selections
CHAMÆROPS, } of well-grown PALMS
LATANIAS, } For IMMEDIATE EFFECT.
&c., &c.

In all sizes and at all prices, from 9s. per doz. upwards

DICKSONS NURSERIES, CHESTER.

FRENCH and DUTCH BULBS.

ROMAN HYACINTHS,
PAPER WHITE NARCISSUS,
LILIUM CANDIDUM, &c.

NAMED and BEDDING HYACINTHS,
TULIPS, CROCUS, SNOWDROPS,
DAFFODILS, &c.

ALL ORDERS CARRIAGE PAID.

CATALOGUES now ready, Post Free on application.

LITTLE & BALLANTYNE,
Queen's Seedsmen, **CARLISLE.**

FLOWERS AT CHRISTMAS.

PROCURE FINE BULBS FROM

JNO. JEFFERIES & SON.

WHITE ROMAN HYACINTHS, per doz., 1s. 4d.; per 100, 10s.
CREAM-WHITE NARCISSUS, per 100, 5s.
DOUBLE ROMAN NARCISSUS, per 100, 6s.
TULIPS, CRIMSON VAN THOL, per 100, 2s. 6d.

Cheap Named HYACINTHS for Bedding:—

Double and Single—Red, White, and Blue, per dozen, 2s. 3d.; per 100, 16s.

JNO. JEFFERIES & SON,
BULB MERCHANTS, CIRENCESTER.

HUGH LOW & CO.

Invite inspection of the magnificent Stock of Stove and Greenhouse Plants, Roses, Fruit Trees, and Vines growing in their Nurseries at Clapton and Bush Hill Park, Enfield; all of the finest possible quality. Especially worthy of notice are the following:—

ACACIAS in variety.

AMPELOPSIS.

ARALIAS.

" **VARIEGATA.**

ARAUCARIAS.

ASPIDISTRAS.

AZALEAS.

BORONIAS.

BOUVARDIAS.

CLEMATIS.

CYCLAMENS.

EPACRIS.

ERICAS of all kinds.

FERNS.

FICUS ELASTICA.

" **VARIEGATA.**

GENISTAS.

GREVILLEAS.

PALMS of all kinds.

ROSES, MARECHAL NIEL,

and other extra strong

climbers, &c., &c.

CLAPTON NURSERY, LONDON, N.E.

FOR SALE, 100 very strong ARUM LILIES

from open ground,

W. CLARKE, Castlethorpe, Stony Stratford.

DAFFODILS.—Irish-grown. Recommended by all the chief Growers in England. Hartland's "Little Book," with low prices for 1893, post-free.
HARTLAND, F.R.H.S., Seedsman, Cork. Established 1810.

VINES and VINE CULTURE.

The most complete and exhaustive Treatise on

Grapes and their Culture ever published.

Third Edition just out.

Price 5s., post free, 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

TRADE.—Special Offer.—20,000 Liliun **Hartlandii**, 5000 Calla **Richardi** African, 2000 Chinese Sacred Lilies, 15,000 Freesia, and a Host of other Bulbs. Just imported in splendid condition. Shall be pleased to quote low cash prices for large or small quantities. Bulbs can be seen any day by calling on Mr. PAGE, 25, Liverpool Street, King's Cross, London, W.C. Samples per post, 8 x stamps.

STRAWBERRY PLANTS (Carriage free).—

Try a thorough change, and procure Plants direct from the Highlands. The undernoted are all taken from fine young stock—**Vicomtesse H. du Thury**, President, Latest of All. Cash price, 3s. 6d. per 100; sample dozen, 1s.; **Vicomtesse** cheaper per 1000.
W. G. HOLMES, Seed Merchant, Tain, N.B.

SEEDLING FERNS.—**P. tremula**, **Lomaria gibba**, &c. From store boxes. Splendid stuff ready for potting, 5s. 6d. per 100; smaller ditto, 4s. per 100. Packed and sent by Parcel Post free. Cash with order.
H. KUPPER, Florist, Billesdon, near Leicester.

BARR'S WINTER & SPRING FLOWERS.

On application, the following CATALOGUES sent free:—

Catalogue of Bulbs, Winter, Spring, and Summer Flowering.

" " Daffodils for Pots, Beds, Borders, and Naturalisation.

" " English Amateur Tulips of absorbing interest.

" " Hardy Herbaceous Perennials—Beds, Borders, and

Naturalisation.

Collections of BULBS, 12s. 6d., 21s., 42s., and 63s.

" " DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., 21s., to 105s.

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PALMS, FERNS, &c.—FERNS in Variety.

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PALMS, fine stuff, in large 60's, 5s. per dozen; **FERNS** and

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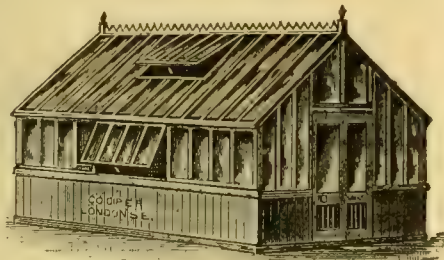
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9ft.	6ft.	7ft.	3in.	4ft.	4 0 0	5 10 0
10ft.	7ft.	7ft.	6in.	4ft.	5 0 0	6 15 0
12ft.	8ft.	8ft.	5ft.	...	6 0 0	8 0 0
15ft.	10ft.	8ft.	6in.	5ft.	8 10 0	12 0 0
20ft.	10ft.	9ft.	5ft.	6in.	12 0 0	16 0 0
25ft.	10ft.	9ft.	5ft.	6in.	17 0 0	22 0 0
50ft.	10ft.	9ft.	5ft.	6in.	30 0 0	40 0 0
100ft.	10ft.	9ft.	5ft.	6in.	50 0 0	70 0 0

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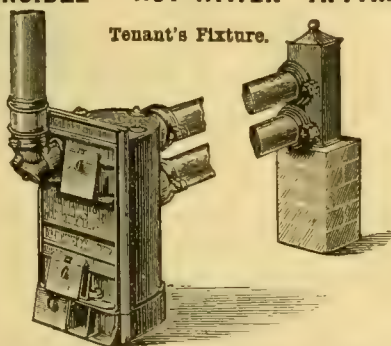
Long.	Wide.	High.		to eaves ...	Packed on Rail.	Erected within 20 miles.
7ft.	5ft.	7ft.	4ft.	...	£2 8 0	£3 15 0
8ft.	5ft.	7ft.	4ft.	...	3 0 0	4 10 0
9ft.	6ft.	7ft.	4ft.	...	3 10 0	5 0 0
10ft.	7ft.	7ft.	6in.	4ft.	4 10 0	6 0 0
12ft.	8ft.	8ft.	5ft.	...	5 10 0	7 6 0
15ft.	10ft.	8ft.	6in.	5ft.	8 0 0	11 0 0
20ft.	10ft.	8ft.	6in.	5ft.	11 10 0	15 10 0
25ft.	10ft.	9ft.	5ft.	6in.	16 10 0	21 0 0
50ft.	10ft.	9ft.	5ft.	6in.	28 0 0	38 0 0
100ft.	10ft.	9ft.	5ft.	6in.	45 0 0	65 0 0

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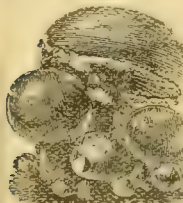
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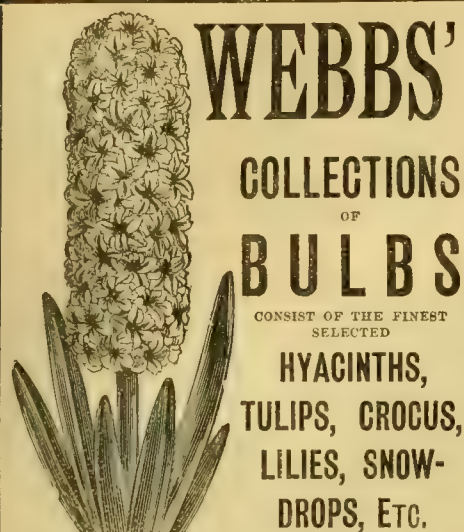
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 23, 1893.

FERNS AS ART MODELS.

ALTHOUGH from the strictly botanical point of view all abnormal forms of Ferns or flowers are termed "monstrous," the word is obviously misplaced when applied to symmetrically-formed and thoroughly healthy types produced in a wild state, and therefore as natural in their origin as those which are ranked as normal. Now, it is a curious fact, that though conventionally treated, we frequently find Fern frondage used in a decorative way in woven fabrics, such as tablecloths, curtains, and so on. Yet we have never come across a single instance of adaptation of any other than the common or normal fronds, the wonderful capacity for ornamental development with which Nature has endowed Ferns, and especially British Ferns being apparently lost sight of altogether, though the wealth of suggestions existing in this direction is simply inexhaustible. Take, for instance, the frond of the common Lady Fern. Normally we have a somewhat stiff midrib flanked on each side with a symmetrically tapering row of once divided pinnae. This frond, it is true, in the course of its development affords many highly-decorative phases of delicately inrolled curves, ranging from the first spiral untwisting of the central stem to its later pendulous crozier-like beauty just preceding its complete unrolling. Each stage affords innumerable object-lessons all as full of grace and possibility of enriched development as any Acanthus leaf that ever inspired the Greeks. Yet how rarely do we find even this stage availed of, the flat, fully developed frond meets us everywhere, but the more beautiful incipient stages rarely. Then, again, in this connection every species has its own peculiarities, the Shield Ferns, to wit, turn themselves, as it were, inside out, the unrolling frond bending over backwards, forming a reversed crozier. The Hart's-tongue unrolls itself like a narrow scroll. The mountain Buckler Fern and marsh Buckler Fern both shake their little pinnules loose ere the ball-like head of the unrolling frond uncurls, so that the head seems to bristle with delicate recurved points. All these features, if carefully studied as artistic texts, would be capable of wonderful development as decorative types for draughtsmen, sculptor, and architect, and in our mind's eye we can picture a series of capitals worked up from the themes he suggests which would fitly grace the noblest building ever conceived by architect. All this, however, relates only to the inherent beauties of the common Ferns. But what is to be said for our innumerable Art students, all eager for fresh fields and pastures new, that they have never hit upon the marvellously tasselled and extra plumose varieties as educational subjects for their pencils? Here we have not only infinite variations of every

detail of the flat, once or twice divided fronds aforesaid, but we have the apices of these divisions, even to the tertiary subdivisions spreading out into the more charmingly imagined tassels conceivable, ramifications innumerable filling up with delicate diaphanous the whole ground-work of the picture, and exhibiting endless modes and methods of treatment of the most ornate character conceivable, and yet so delicately and symmetrically adjusted and arranged as to be perfectly graceful and free from any feeling of over-elaboration. Here, too, of course the incipient stages are varied *ad infinitum*, the tassels unrolling in all attitudes, of pendulous beauty, and spreading out as they develop into it may be a myriad-stranded bunch of fine filaments branching again and again into a veritable mosslike ball, or a broad-fingered starlike flat tassel like a finely-fringed glove.

Outside these elaborate types again, there are scores of variations which though simpler in design, are by no means less pregnant with artistic suggestion. The revolute variations, for instance, afforded by several species, and of which we may take as the extreme type *Athyrium f.-f. revolvens*, two forms of which were found together in Scotland, one in which the normal frond, after assuming the usual flat form of the species becomes symmetrically rolled backwards in all its divisions, the frond itself curving at the tip to such an extent, that it forms a dependent spiral; the side divisions do the same, and the pairs of tertiary ones besides being distinctly convex in cross section, form semicircles. The other find has the fronds and side divisions only recurved, and the tertiary divisions quite flat; and it is a moot point which is the more beautiful.

Now, here is a type built up entirely of lines of beauty which so far as we are aware has no parallel at all among the myriad other vegetative forms in Nature, and yet produced by the simple continuance of growth of the superior superficial cells after the frond is normally matured. A like abnormal continuance, affecting the plant generally, instead of partially, has yielded the splendid group of frilled and fimbriated Hart's-tongue (*Scelopendrium v. crispum*), in which the plain, flat, strap-like frond is transformed into frills of the most ornate description, the bold convolutions of which would admit of their artistic use to great advantage.

Obviously, nothing short of the plants themselves, as they live and grow under congenial conditions, would be of any use whatever in this connection to the Art-student. The best collection in the world of pressed fronds, or even such Nature-prints as have been produced by Colonel A. M. Jones; or in Moore's folio edition of *Nature-printed British Ferns*, fail altogether to convey the grace and beauty of the living Fern, many of the most charming types, such as the revolute and frilled ones aforesaid, being crushed out of recognition by any process which involves either drying or printing from an impression; while with the more elaborate ones, in which the divisions may overlap to such an extent as in places to be three or four deep, the printing process is altogether inapplicable. Fortunately, however, the grand collection existing at Kew embraces the *élite* of the varietal forms, and though some of them would develop their specific beauties to greater advantage under glass than in the open, the Art-student who may wish to avail himself of the hints we give, would find ample material for his pencil, and be well repaid for not merely one visit, but many. *Chas. T. Drury, F.L.S., F.R.H.S.*

NEW OR NOTEWORTHY PLANTS.

PHALÆNOPSIS FUGAX, n. sp.*

A VERY curious *Phalænopsis*, the closer affinities of which are at present very little known. The whitish

* *Phalænopsis fugax*, n. sp.—Foliis cuneato-oblongis viridibus unicoloribus 4–5 poll. longis, ad 1 poll. latis; racemo sublongiore cataphyllis 1 v. 2 vestito, supra clavato paucifloro

or pale yellow flowers open about 9 o'clock in the forenoon, and begin to fade at 2 or 3 o'clock of the same day. This striking fact (for a *Phalænopsis*) was observed in two following years by Mr. White, Orchid grower to Sir Trevor Lawrence, Burford Lodge, to whom I am indebted for fresh materials. The most striking part of the flower is the middle lobe of the lip, which is contracted to a globular hollow body, furrowed at the top, and with an obtuse pointed cone before; the lateral lobes are linear, erect, and in the way to be shown very often in other *Phalænopsis* species. It is by no means a beauty in the genus, but interesting for a new type of the labellum. *F. Kränzlin, Berlin.*

JAPANESE HORTICULTURE.

THE following extracts are taken from a paper read by Mr. Henry Izawa at the nurserymen's Congress at Chicago:—

DWARFING PLANTS.—The art of dwarfing plants is so little known in other lands that a short description of its process is not out of place here. A few examples will suffice to give you a general idea. The successful Japanese nurseryman must not only be a good grower, but he must also be an artist, conversant with the general arts and customs of his country, which differ very materially from those of any other country.

The Pines may be considered the most important of all trees in Japan, and great care is taken of their cultivation and preservation. The most popular ones are *Pinus densiflora*, *P. parviflora*, and *P. Thunbergii*. They are generally grown from seed, and great care is taken to select the choicest qualities. In the spring of the second year, when the seedlings are about 8 inches high, they are staked with Bamboocanes, and tied with Rice-straw, the plants being bent in different desirable shapes. The next fall they are transplanted to a richer soil, and well manured. In the following spring the plants are re-staked and twisted, and tied in fanciful forms. This mode of treatment is given until the seventh year, when the trees will have assumed fairly large proportions, the branches being trained in graceful forms, and the foliage like small clouds of dense green. The plants are now taken up and potted in pots 1 and 1½ foot in diameter, and are kept well watered. Every succeeding year great care must be taken of new shoots, which must be kept pinched back. After another three years of this treatment, the trees are virtually dwarfed, there being no visible growth thereafter.

The dwarfing of Bamboo is another important branch of the Japanese nursery business. Three weeks after Bamboo shoots begin to grow, and when the trunks measure about 8 inches in circumference and 5 feet in height, the bark is removed, piece by piece, from the joint. After five weeks, when the plants get somewhat stout, bend and tie the stem zig-zag; after three months, when the side-shoots grow strong enough, cut them all off 5 or 6 inches from the main trunk; they are then dug up and potted in sand—care should be taken not to use any fertilizer, but plenty of water should be given. Cut off the large shoots every year, in May or June, and after three years the twigs and leaves will present admirable yellow and green tints.

Dwarfed Thuias are effected by means of grafting. Let a *Thuia Lobbii* [= *gigantea*] seedling grow on fertile soil for three years, or until it becomes about 5 feet in length; then in the middle of spring cut off all branches, leaving the trunk and top branch; take a quarter-inch chisel, and hammer it into the thickest

portion of the trunk, hollow out a 1-inch deep hole to every 2 or 3-inch space, so that the trunk can be bent more easily in the desired direction. Rice-straw is twisted round the trunk, which is bent in many curious forms and fanciful shapes. In spring-time of the second year of this treatment, the plants are potted in rich soil; in another two years, when the plants have assumed permanent forms, *Thuia obtusa* is then grafted on the *Lobbii* stem.

GRAFTING.

The process of grafting is, in brief, as follows:—Apply plenty of manure to the *Thuia Lobbii* plant; in early spring take some 2-inch shoots of *Thuia obtusa*, cut the end in a slanting plane, and insert in the smaller portions of the *Thuia Lobbii* trunk one graft to every inch on the trunk; wrap the grafts with Rice-straw, and take the plants to a shady, draughtless room, with the temperature at 35° F. Increase the temperature one or two degrees daily; continue this for three weeks, by this time a little breeze may be admitted, and leave the temperature of the room 60° for two weeks, and at 70° for two weeks; leaves will soon grow from the grafted twigs. In the latter part of spring, when the temperature in and out-of-doors becomes uniform, the plants can be safely transferred to some shady position out-of-doors. In the fall, when all the grafts have taken good hold, cut off all the remaining shoots of *Thuia Lobbii*. Transplant every year in good rich soil; six years will be sufficient to produce handsome specimens of dwarfed Thuias.

All kinds of Conifers are treated in a similar manner. There are also a great demand for curiosities in mixed grafted Conifers; that is, six or seven kinds of Conifers on one plant.

Maples form one of the best materials for the artistic fancies of the Japanese craftsman. Often a great many different varieties of Maples are grafted on one stem. Seedling Maples are spliced and tied together when growing; after they have formed an union, the desired shoot is cut off—this is kept up until ten or twenty varieties are obtained. Maples thus grafted form lovely features for lawns, their varying hues and types of foliage enhancing each other's beauty.

MINIATURE LANDSCAPE GARDENING.

Now, a few words regarding our miniature gardening. The æsthetic idea shows itself in every line of Japanese industries, and especially is it the case with our nursery and landscape gardeners. The most inexperienced need not fear any difficulty in our mode of gardening if he but uses his mind and efforts in the right direction. The skilful artist introduces into his miniature garden, not regular geometrical forms, but anything odd, irregular, and artistic. To us gardening is not mathematic, but an art—hills, dales, rivulets, waterfalls, bridges, &c., vie with each other in presenting their quaintest forms and fancies, and harmonious symmetries. Dwarf plants of all descriptions deck the scene here and there in thousands of peculiarly artistic shapes. We derive many lessons from Nature, and endeavour to imitate her as much as is practicable, although on a smaller scale. It is in the person of a Japanese gardener that Dame Nature finds her most ardent lover; his is the ambition to make his country a place for men like Arnold to flee to when seeking a studio to the beauties of the "Light of the World."

PLANT NOTES.

DIANTHUS GALLICUS (PERSEON) SYN. **D. ARENARIUS** (THORE).

This must not be confounded with *D. arenarius* of Linnæus, which is figured in the *Botanical Magazine* (t. 2038), and is a very distinct plant. The only portrait I can find of *D. gallicus* is in Wooster's *Alpine Plants*; it represents only the flower, but is good as far as it goes. The leaves are thick and glaucous, and the stalks very long and creeping; the whole plant somewhat resembles an enlarged and drawn-out *D. cæsius* with fringed flowers. It is very

bracteis minutissimis triangulis acutis quam ovaria pedicellata multoties brevioribus; sepalis dorsalibus petalisque ovato-linearibus acuminatissimis, sepalis lateralibus ter latioribus ovatis acuminatis; labelli bene brevioris unguineo-linearis, lobis lateralibus erectis lineari-oblongis antice rotundato-retusis, lobo intermedio in basi v. isthmo, callo conico obtuso instructo, ipso globuloso antice sulcato intus vacuo nudo; gynostemio brevi, anthera antice longe producta; pollinibus et fovea stigmatica pro gynostemio magnitudine maximis, rostellis linearibus. Totus flos vix pollicem diametro, albidus v. stramineus; labelli lobi laterales violaceo-striati. Flores fugaces vix 5 v. 6 horas durantes. *F. Kränzlin.*

late in flowering; the flowers are pale pink, and very fragrant. It is a native of the sandy coast along the whole circuit of the Bay of Biscay, extending into Portugal. It is very abundant near Biarritz, extending some distance inland on the sand-hills of the maritime Pine-woods, but growing also close down to the sea level. By giving it a depth of 2 feet of pure sand in a sunny corner of my garden, I have made

first time this season. White Queen is a free-branching and profuse-flowering variety, about 9 inches high, the flowers being large, well-formed, and, as the name implies, white—pure white. Planted by itself in beds, it is very telling when contrasted with masses of scarlet, pink, and other distinct shades of colour. *H. W. Ward, Longford Castle Gardens.*



FIG. 56.—STINKING WARTED CAPS: *AGARICUS PHALLOIDES*, PALE YELLOW OR GREENISH.

it grow luxuriantly and flower abundantly; but its special requirements will prevent its becoming a common plant in cultivation. *C. Wolley Dod, Edge Hall, Malpas.*

ASTER, WEBBS' WHITE QUEEN.

This charming variety of the somewhat stiff Aster has been very much admired by visitors to these gardens this year, where it has been grown for the

A POISONOUS FUNGUS.

AGARICUS (AMANTIA) PHALLOIDES, FRIES.—There is rather strong evidence that this is one of the most poisonous of British fungi, if not really the very worst. It resembles a little the celebrated Fly Agaric, but the brilliant red of that species is in itself a warning, whilst the present is more subdued in its colouring, and much more common. In the

autumn nearly every wood produces them in plenty, and there is no doubt that Dr. Plowright traced some case of Mushroom poisoning to this source. It is rarely that the species causing the mischief can be accurately determined, after these accidents, but fortunately Dr. Plowright was a practical mycologist, and soon discovered the cause. We have considered it of advantage to give a figure of this enemy of the unwary, with a few particulars of its history. The pileus, or cap, is from 3 to 4 inches broad, with rather a viscid skin, soon becoming expanded and rather flat. Sometimes the top is quite naked, at other times patches of the volva-membrane, irregular in size and shape, are adherent. When growing exposed to the sun, the colour is whitish, or pale lemon-yellow, but in more shady places with a dull greenish tint, or pale olive. The gills are free from the stem and white, broadest in the middle, and narrowed towards each end. The stem is from 3 to 5 inches high, solid at first, but becoming hollow, bulbous at the base, with a large drooping white collar or ring towards the top, and a volva or sheath at the base, the lower portion of which is grown to the bulb, the upper margin being torn and loose. When quite young, the cap is enclosed within a membranaceous coat or volva, with the form of an egg, but with the growth and elongation of the stem, this volva is broken irregularly, and the young cap rises on its stem, carrying up with it fragments of the torn volva attached to its surface, whilst the residue remains like a ragged membrane attached to the bulbous base. Whilst still fresh, this fungus has very little odour, but soon after being gathered it smells more strongly, becoming more or less stinking in decay. The odour faintly resembles that of the Stinkhorn (*Phallus*), and hence the name.

There is a variety which is pure white, sometimes called a distinct species, under the name of *Agaricus vernus*, which only seems to differ in colour, and less fetid odour, but it is equally dangerous. In both forms the spores are white, and the substance rather soft and fragile, so that we cannot imagine how any sane person can possibly confound them with the common Mushroom. *M. C. Cooke.*

HYBRIDISATION: ITS BENEFITS AND RESULTS TO ORNAMENTAL HORTICULTURE.*

It may fairly be said that three great agencies have been at work during the past century to increase the number of cultivated plants. These have been the introduction of new species, the selection of sports, and the hybridisation of species already in cultivation. It would be hard to say which of the three agencies has been the most potent, but it is a fact that many of our choicest garden ornaments of to-day are neither species nor sports, but hybrids that have themselves been so crossed and recrossed that to unravel their parentage would be hopeless. As proof of this, we need only cite the Pinks, Pelargoniums, Begonias, Heaths, Rhododendrons, Gloxinias, Gladioli, &c. Such results are the best possible proof that hybridisation has immense possibilities for the florist. The great improvement of many hybrids over either parent is a valuable feature in itself.

Though it is now approaching two centuries since Fairchild raised the first hybrid that was recognised as such, it is scarcely more than half a century since gardeners started in earnest to the work of hybridisation. Kölreuter may well be designated the father of hybridisers, for from 1760 till near the time of his death, in 1806, he devoted his best energies to the scientific rearing and comparison of parent and hybrid forms. The altogether unexpected results he obtained in crossing species of such genera as *Dianthus*, *Malva*, *Lobelia*, *Nicotiana*, and *Mirabilis*, at once showed the way, and supplied the stimulus to gardeners, who—to their praise be it said—were not blind to the hint thus furnished. But the gardening world was first aroused to the height of anticipation when a couple of well-known cultivators entered the

* Presented at the St. Louis Convention of the Society of American Florists by Dr. J. M. Macfarlane, Lansdowne, Pa.

field in the persons of R. Gowen, gr. to Lord Carnarvon, and Dean Herbert, the amateur but enthusiastic florist. As the two brought forward successive crosses of the then fashionable *Ericas*, as well as of *Rhododendrons*, *Gladioli*, and *Amaryllis*, that still find high favour, the natural outcome was that every gardener became a hybridiser. During the first half of this century, therefore, the number of garden hybrids increased greatly, while the price at times realised for some lucky batch of seedlings was a windfall to the owner.

More recently, the careful scientific experiments of Gärtner, Naudin, Godron, Wichura, and Darwin have given a firm foundation to the subject, while the innumerable varieties of *Pelargoniums*, *Fuchsias*, *Rhododendrons*, *Petunias*, and *Orchids* testify that the florist has not been resting on the laurels which his predecessors gained. But all this notwithstanding, he has too often approached his experiments in a very hap-hazard frame of mind. True, some of the leading continental firms so realised the importance of the work to be done, that they engaged men for it who became specialists. Dominy, Seden, Kellermann, Turnbull, Grieve, and others amply deserved the name. Like other industries and pursuits, the rearing of hybrids is one the importance of which has not been fully realised in America. Till within the last few years, there has not existed here the type of wealthy, leisured, and cultured men, who can appreciate such products, and are prepared to spend large sums in order to obtain them. But while a change for the better is at present going on, is it not true that this country has at times fulfilled its mission best when it has gone outside itself to compete with other nations? Why should it not do the same in the production of new and valuable crosses? I am glad to know that already a beginning has been made, and that hybrid *Orchids* from American raisers have been willingly awarded their meed of praise.

System and method are characteristics of the universe, and should be also of those who propose to enter the list of hybridisers. Want of system and method has sadly shown itself in the past, so that the market has been flooded with hybrids whose parentage is unknown, and the means adopted for the obtaining of them is unrecorded. Every gardener, then, should have a pocket notebook as a constant and cherished companion. I could not help admiring the system adopted by a well-known *Orchid*-grower of England, whose stock of hybrids is almost without a rival. A large well-bound volume contained a record of every experiment conducted. The time of opening of the parent blossoms, the date when cross-pollination was effected, remarks on the ripening of the capsule, the period when it was plucked, the time of sowing of the seeds, and the nature of the soil in which they were placed, the first appearance of the seedlings, and the date when these were pricked off into pots, were all duly entered. By such means he commanded success, and it has come to him. How unlike the all too common reply made by many, when asked only it may be as to the parentage of a cross, "Well, Golden Queen was the seed parent, and I think Silver Gem was the male."

If it be asked now, "What flowering plants will hybridize?" the answer is difficult to give, for our sad lack of knowledge on many points must be confessed. It has been demonstrated that the pollen grains of one species when put on the stigma of some species belonging to a different order, or even sub-class, will protrude pollen tubes that may reach the ovary or even the ovule. But the operation seems to be largely physical, and there stops. It can be laid down as an ascertained law that only forms which are more or less related to each other will cross. But we do not mean to imply by this that in habit, environment, flower-colour and odour the two should resemble each other closely. Witness the hybrid between the slender, twiggy, small-flowered *Rhododendron Dauricum* and the tall, large-flowered *R. arboreum*; or between the dense, wiry Patagonian shrub, *Philesia*, and the tall Chilean climber, *Lapageria*. These indicate to us the outer limits of possibilities, so to speak, but the fact that hybrids

of such never or rarely bear seed, teaches us that natural limits have been overstepped by human art. Since hybrids between species of *Dianthus*, *Pelargonium*, *Begonia*, *Petunia* and others are to a large degree fertile, this indicates that the inner limit shades off into cross fertilization of individuals of the same species.

A very important matter in hybridisation is the skilful and judicious selection of appropriate parents. It seems inevitable that embryo hybridisers always attempt at first to get marvels, rather than improvements. They wish to lead Nature, instead of being content to put their hand in hers. "Improvement" then should be the hybridiser's watchword, and we predict that this can best be attained by a thoughtful study of the parent species. Let us illustrate by one or two cases. The deservedly-popular and early-blooming *Rhododendron Noëleanum* is a cross of the low-growing, white-flowered *R. caucasicum*, with the magnificent scarlet *R. arboreum*. But, as grown in English gardens, the leaves of the former parent are liable to the attack of an insect that riddles and browns them. The weakness is powerfully inherited by the hybrid offspring, and is decidedly against it in the florist's eyes. The selection of our native *R. catawbiense* instead gave the well-known strains of which John Waterer is an example, and these are free from the defect indicated.

No better illustration can be given, I think, of the inferior qualities of two selected parents being subordinated to the good points of both in the crossed offspring than in *Nepenthes Mastersiana*. This form has done more to popularize the pitcher plants than any species or hybrid yet brought forward. The one parent, *N. sanguinea*, has ample bright green leaves that bear scarlet-crimson pitchers of graceful shape and large size. But the plant tends to become "leggy"; it pitchers rather inconsistently, and is often difficult to propagate. The other parent, *N. Khasiana*, has narrow gray-green leaves, long narrow pitchers of a greenish hue tinged and streaked with brick red—not highly desirable acquisitions—but it pitchers at every leaf usually, and is easy of cultivation. The hybrid, in habit, in leaf form, and colour, in shape and colouring of the pitcher, and not least, in its free mode of propagation, is all that could be desired.

Since it is a general rule that as we approach the tropics the wealth and colouring of flowers increase, one aim should be to cross good hardy forms with others of a more tender kind, for people do not want to grow all their plants the year round in glass-houses, if they can do otherwise. Then, too, since hybrids remain truest in type when propagated otherwise than from seeds, if one proposed parent that has good points, be an annual or biennial, one that is perennial should be chosen as the other parent. Good illustrations of this are to be found both among natural and artificial hybrids. "Habit" is an important item with florists, and the improved crossed strains of *Begonia*, *Canna*, &c., are known to all of you. The quality of the flowers, however, largely determines the value of the plant. But "the quality of the flowers" is a complicated problem, since size, shape, colour, perfume and duration may all have to be considered. A skilful study of these may insure a hit when otherwise there would be mediocrity or a failure. Few hybrids in their blooms set off the good points so well as one that has had a wide though questionable reputation, and yet is little known to cultivators. I refer to *Bryanthus erectus* of Graham; a well-grown plant of this, not to say a bed of it, is a sight indeed. As colour is an important consideration, needless effort may be saved by avoiding the crossing of species that have yellow and purple, or scarlet or dark blue blossoms. While I know a good many ugly combinations of the above, the only passable one is that between the cardinal and blue *Lobelias*, which is not uncommon in the wild condition with us, and has repeatedly been produced artificially.

All experimenters practically agree that some genera and species cross much more readily than others. Where striking differences exist in the structure of the two parents, the probability of

blending is correspondingly reduced. In spite of this the man would be rash who would attempt to predict with our own present knowledge that certain species cannot be crossed. Look up the literature of twenty years back and you will read that the Currant and Gooseberry, the red and blue Pimpernel, as well as others that might be named, refused to blend. Yet we have hybrids of them now. They yielded to steady and determined effort. The group of *Orchids*, however, should be an example and encouragement to all. Till within the last quarter of a century few artificial hybrids, and only a few wild hybrids of the *Orchid* order, were known, the order itself being viewed as of minor hybridising capacity. But the rage for novelty and improvement taxed the skill of the gardener, while the prices willingly paid for good novelties furnished the incentive. He set himself to understand the curious structure of the flower, and to his aid came Darwin's classic work. The order now stands first as having furnished the greatest number of hybrids, the most varied combinations, and the most beautiful results. It cannot be too strongly stated, however, that these achievements have been accomplished by a skilful selection of parents, and a knowledge of the cultural treatment that best suits them from the seedling on to the adult's age.

(To be continued.)

THE LARGEST WILLOW TREE IN ENGLAND.

A LINCOLNSHIRE correspondent sends the following particulars regarding the large Willow in Haverholm Park. The last measurements, which were taken twelve years ago, are as follows:—At 1 foot from the ground it measured 27 feet 4 inches round; at 4 feet, it was 20 feet 5 inches; but at 7 feet, owing to the protuberances at the base of the limbs, it was 28 feet in circumference. About 8 feet from the ground it breaks into eight large limbs, each equal to an ordinary-sized tree. The spread of branches was on one side 40 feet, and 28 feet on the other; and the tree, which is of the *Huntingdon* species, is about 40 feet high. It is perfectly sound in bole and limb, and quite healthy, though its age is given as 1000 years. It stands on a slight elevation, very like the bank of a river; indeed, one can easily trace an indentation of the surface, pointing probably to the ancient bed of the river Slea. A Gooseberry bush grows from a hollow between two of the branches, and a Thorn tree has sprung up lower down.

NORTHWICK PARK.

THE Worcestershire residence of Lady Northwick is in the extreme south of the county, and within 2 miles of Blockley Station. The hall is situated on a gentle slope in an extensive and beautiful park planted in grand old English style with Oaks and Beeches principally, which give shade and shelter to the numerous deer who can browse up to the front door without hindrance of terrace, flower-garden, gates, or barrier of any kind. Space, grace, freedom, and breadth of effect, combined with simplicity, seem the characteristics of the place.

The estate is extensive, well-appointed, and well-managed. The number and size of allotments provided for the workmen and cottagers on the estate, is much greater than is usual upon estates, and, in conjunction with the fact that Lady Northwick annually offers many prizes for the encouragement of the better cultivation of allotment-gardens, prove conclusively that the welfare of the poor is a matter in which her ladyship takes great interest. I think there are more than 150 acres of land in allotments.

The flower-garden is entered at the left of the mansion, and is in old-fashioned style on undulating turf. Standard Roses, and beds of Everlasting-flowers; beds of *Petunias*, and *Zinnias*, and *Asters*, and *Calceolarias*, yellow and red; masses of *Pelargoniums*, crimson, scarlet, orange, pink, white; rows of *Centaurea*, *Lobelia*, *Tagetes*, *Perilla*, &c. The

beds and borders at the time of my visit (August 28) were well filled with brilliant colours. The best Pelargoniums were Waltham Seedling, Brilliant, Veuvius, Henri Jacoby; and last, but not least, the grand old Indian Yellow of Donald Beaton. This was quite a treat.

The kitchen garden department covers about 6 acres, including orchard. On entering at the garden-door, one is struck by the gorgeous display of Asters on a border 60 yards long, and which are again continued on another border at right angles in front of the long range of vineries. The flowers are superb, especially those of *Ne Plus Ultra* and Dwarf White Victoria; and the display may be imagined when it is stated that Mr. Hillier grows 3000 plants of Asters. The drought has scarcely made itself apparent at Northwick in any department of the garden. The Onions are excellent, particularly Veitch's Main Crop; for, measuring the first to hand, I found that it was rather more than 13 inches in circumference, and there were hundreds of bulbs as large, and larger. These were sown on March 9. Brown Globe were very fine, and James' Keeping fully up to its well-known standard. Veitch's Model Cauliflower has been, and is, at Northwick of first-rate quality, and deserves all that can be said in its favour; also, the Mammoth Scarlet Runner of the same firm is a favourite variety; and Canadian Wonder Kidney Bean has maintained its reputation for abundant cropping. Celery is grown of high quality, and in great quantity; and Potatoes as they ought to be, i.e., with plenty of space.

The best crops of Pears were Glou Morceau, Marie Louise, Pitmaston Duchess, and Williams' Bon Chrétien, 2½ bushels of extra-fine fruit of the latter being gathered from one tree on the garden-wall. Plums have been good; Blue Imperatrice on a wall was a picture of beauty. Apples are plentiful here, and in great variety, amongst them may be mentioned Blenheim (brown and white varieties), Ribston Pippin, Sturmer Pippin, King of the Pippins, Peasgood's Nonsuch, Reinette du Canada, Cellini Pippin, Lord Suffield, Hanwell Souring, French Crab, Hawthornden, D. T. Fish, the uncommon Calville Rouge, and good old Normanton Wonder syn. Wellington, Dumelow's Seedling, all bearing heavy crops of fruit.

The vineries contain very good crops of Grapes, good in bunch, berry, and finish, of such well-tried varieties as Black Hamburg, Black Alicante, Mrs. Pince, Foster's Seedling, Trebbiano, West's St. Peter's, and Muscat of Alexandria. *J. Udale.*

ORCHID NOTES AND GLEANINGS.

LÆLIA PURPURATA VAR. FASTUOSA.

A VARIETY with lilac sepals, rosy-lilac petals, and a deep crimson lip. Flowered at L'Horticulture Internationale. *Lindenia*, t. 385.

LÆLIO-CATTLEYA EXIMIA X.

A magnificent hybrid raised by Mr. Seden out of *Cattleya Warneri* by *Lælia purpurata*. The flower-segments are broad, deep rosy-lilac, and the lip intense crimson, with a yellow blotch. *Lindenia*, t. 386.

MASDEVALLIA POURBAIXII X.

A hybrid raised by M. Pourbaix, of Mons, out of *M. Veitchiana* by *M. Shuttleworthii*. The plant is intermediate between its parents; the flowers are dull orange-red, covered with a multitude of little brownish-red dots. *Lindenia*, t. 387.

ODONTOGLOSSUM THOMPSONIANUM.

A form of luteo-purpureum, probably, with the segments clear yellow, heavily blotched with chestnut-brown. The oblong acuminate toothed lip is white, with a central orange blotch, and radiating lines of the same colour. *Lindenia*, t. 388.

FLOWERING OF THE LARGEST ORCHID.

It will interest our readers to know that the gigantic Orchid referred to aforetime as the largest Orchid known, *Grammatophyllum*, has flowered this summer with Mr. Syme at Rangoon, with whom it produced a

grand inflorescence 6 feet in length. Its owner has grown the plant for three years, but this is the first season of its flowering; probably, like many other shy-flowering species, it may bloom fairly regularly once it has got into flowering trim.

ORCHIDS AT MOUNT HARRY, BRIGHTON.

Excellent well do the Orchids in the gardens of R. G. Fletcher, Esq., thrive under the skilful care of Mr. Garnett, the gardener at Mount Harry. The plan adopted is to grow the Orchids in houses where other suitable plants—not liable to harbour injurious insects—are arranged with them, and in many cases the results are truly remarkable.

The first division of the largest range has a rockery on each side of the entrance, in which a large specimen of *Hedychium coronarium* occupies the one side, on the other hand being an equally large *H. Gardnerianum*, and in both cases the plants are well in flower. On the stages are a few richly-coloured *Coleus* and other foliage plants, among which the Orchids luxuriate. Quantities of *Cattleya labiata* are sending forth flowers; a specimen of *Oncidium sarcodes* has two spikes, which bid fair together to excel the number of flowers borne on one spike by the same plant last season, viz., 112. *Lælia tenebrosa*, *Vanda cœrulea*, *Dendrobium Phalopsis Schröderianum*, and the showy *Odontoglossum grande* are very fine; and three plants of the pretty *Oncidium Jonesianum* bear between them nine beautiful sprays of flowers all differing in some respect.

In the second division, *Dipladenia amabilis* is making a fine display on the roof, and grand specimens of *Eucharis* are mingled with the Orchids, one pair having borne about ninety spikes each. Here the *Dendrobiums* are making marvellous growths; so strong, indeed, were those of *Dendrobium Dalhousieanum* that we took the measurement, and found one of the best pseudobulbs to be 3 inches in circumference and 4 feet 6 inches long, and still with unfinished growth, the specimens forming one of the best examples of Orchid culture we had ever seen. In this house *Cattleya Dowiana* was fine; the *Calanthes* and all the other specimens remarkably vigorous.

In the cool Orchid-house, the back wall is covered with *Luculia gratissima*, which some find difficult to grow, but which here thrives, and blooms profusely. A good collection of *Odontoglossums* is being got together; but although they seem to be growing well, it may be found that ultimately they will not give so much satisfaction as the Brazilian and other warmer-house Orchids, the soil here being almost pure chalk; and it has been said that *Odontoglossums* are more difficult to manage on chalky than on loamy or clay soil. Be that as it may, we are sure that failure will not take place for want of attention, for Mr. Garnett is very enthusiastic, and is fertile in expedients to meet emergencies. Among the cool Orchids, some *Odontoglossums* are in bloom, one, *O. bictonense* being an especially good form; varieties of *Cattleya Alexandræ* show that they can be pretty, one of those here having a bright carmine lip and broad spotted petals; some forms of *C. granulosa* and *C. Gaskelliana*, too, are in bloom; *Lælia pumila Dayana* has fifteen fine flowers; the charming *Lælia monophylla* has blooms of a rich scarlet, and 2½ inches across; and *Zygopetalums*, *Oncidiums*, &c., help to make a show.

In the vinery, in which the young Vines planted two years ago have made grand canes, the resting *Dendrobiums* are placed; and in a sheltered corner of the rock garden the North American *Cypripedium spectabile* grows and flowers satisfactorily every year.

The present condition of the Orchids at Mount Harry gives a good warrant for the more extended culture of them which is there contemplated.

ABRAHAM'S OAK.

A BLOCK of the Oak of Mamre, or Abraham's Oak, has been deposited in the Kew Museum; it forms part of a branch broken off in a snow-storm. The Abraham's Oak was described and

figured by Sir J. D. Hooker in the *Linnean Transactions*, vol. xxiii. It is *Quercus pseudo-coccifera*, a common tree throughout Syria. This particular tree is supposed to indicate the spot where grew the Oak or the lentisk under which the patriarch pitched his tent, and is revered accordingly by Jews, Mahomedans, and Christians. Further particulars are given in the *Kew Bulletin*.

THE ROSERY.

IN THE ROSE-HOUSE.

HAVING a large span-roofed house of Roses, many of which are planted out into borders, a few notes upon seasonable work among them may be welcome, especially as there is much to do in this department during the coming month, if early blooms are required. Ever since the end of June this house has been open night and day, and at present the plants carry a fine lot of well-matured wood; about one-half of the foliage has fallen, and the borders are dry. During the next fortnight we intend trimming over the plants, and doing the little pruning necessary; but there will be very little of this to do, because the plants are grown chiefly for cut flowers, and I believe in cutting each bloom with a long stem. Not only does this enhance the value and beauty of a Rose, but it keeps the plants pruned into a closer and more useful shape. My readers must have noticed how persistently a Rose will break into new growth from the two or three upper eyes of shoot from which bloom has been removed, while the lower eyes remain dormant. In this way a plant becomes loose and straggly in a very short time; therefore, I prefer to cut away freely when securing the blooms, and by so doing render them much more useful and showy for decorative purposes. I am writing now of the medium growers, like Catherine Mermet, Perle des Jardins, &c.; the climbers shall receive attention later on. I also cut a great number of buds for propagating, and find that those from under glass are much harder, and give a greater percentage of success than do Tea and Noisette buds from the open ground. This is more noticeable in other seasons than during the present hot and dry summer, when plants in the open have had wood much harder and riper than usual. From the above, it will easily be guessed that I have not much pruning to do among this section; in short, it consists more in thinning out weak lateral growths, and as much of the older wood as I can afford to cut away. Having done this, any leaves that may remain will be cut off, and the house still left open for about a fortnight longer.

Now, a word or two about the climbers. These need quite a different style of pruning; but, like the others, almost all of this was done during the growing season. I have climbers on the roof at various intervals—up the pillars, and over the iron ties from roof to roof. The house is on a hill, is 24 feet wide, and ranges from 8 to 12 feet high, so that the strong growers have plenty of room to show their true characteristics and usefulness. In order to do this, they must make plenty of strong wood, and it is absolutely necessary that this be well ripened previous to being started into fresh growth. I have more than once called attention to this point, and its great importance will be realised when I say that almost every one of the well-matured eyes will produce a bloom, whereas upon partially-ripened rods they would barely exceed one in a dozen; a matter of three weeks longer in maturing may make all the difference. As soon as a long rod of growth has opened all its flowers, I begin to remove the wood, not cutting away the whole at once, for I am convinced that this practice is often the precursor of canker, while there cannot be a doubt that it aggravates it. If we give a little thought to the matter, we shall be convinced that the roots must be in a high state of activity to support the enormous quantity of foliage and bloom borne by a climber at this stage. To remove this so suddenly, as some advise, must seriously upset the balance between

root and wood growth. There is no outlet for the large quantities of water which the roots are absorbing, and consequently they cease activity to a great extent. I have more than once taken the trouble to examine the roots of plants treated in this manner, and have found the points of the roots dead, giving one the idea that they stopped growth suddenly and prematurely. By removing the useless wood in two or three cuttings we avoid this, and the plant continues in health and activity, and more strength is gradually diverted to those strong shoots which invariably break from the base of the older ones, or from the crown of the plant. As we are so dependent upon these for a good crop the following season, we at once see how essential it is to converge all of the plant's strength and energy into this point. Unless these are encouraged early, they cannot become properly matured in time for the early forcing I intend my plants to undergo. Plenty of water at the roots, with a thorough soaking of liquid manure once a fortnight, will materially assist towards this end; but all root-watering should cease by the end of August, or the rods will not ripen up satisfactorily.

To hark back again to the present work. Having stopped such rods as may still be inclined to grow, and removed all of their ripest leaves, it will be well to fasten them into their proper places at once. Both the short and long growers will have the surface-soil scratched over, and be left fully exposed to all the light and air possible for a short time longer. My pot Roses, which I intend bringing into the same house, were looked over and repotted a few weeks ago; they are now beginning to push into new growth, and will be housed about the middle of next month. At the same time as this is done, the borders will be mulched and slightly forked over. One good soaking will be afforded them, but no more until the days have turned. For some time the pot plants can stand among the border Roses, and also upon a low wall which runs all around the centre border. Later on, as they break into growth, a batch will be removed to another house; but for the remainder of this year, one house will be sufficient.

I shall probably commence cutting very soon after the days turn, and they will come on rapidly. By starting them early, and keeping them just on the move, we gain such a great advantage; and with a slight increase in the temperature, added to the remarkable influence the turn of days has upon all plant life, this house will soon be full of bloom. An even temperature of 45° to 50° up to the end of the year will be aimed at; after this it will gradually rise to 65° and 70°. One of the most important things is to keep the plants free from insects, and if a good syringing or two be given with some insecticide of almost double the advertised strength, now that the wood is carrying no young foliage, insects will not attack them so freely. Syringing during the winter must be done with judgment, clear days being chosen as much as possible. I prefer a slight fumigation to syringing at this time, and it will pay to do this promptly. It is the first few insects which stock the house, and do so much mischief. A. P.

INTERNATIONAL JUBILEE HORTICULTURAL SHOW AT LEIPZIG.

THE anniversary of the fifty years' existence of the Leipzig Gardeners' Society was celebrated this year with a great horticultural exhibition, lasting from August 25 to September 5. It was anticipated that the exhibition would be a large one, and extensive preparations were made; moreover, the announcements made by the Society led to great things being expected. Unfortunately, the weather proved very unfavourable, with the result of a small attendance of visitors. Then, the large hall, in which the warm-house plants were placed, was destitute of windows, and was roofed over with semi-transparent linen, making it a not very suitable place either for the plants for so long a period, or for

the visitor; and so dark was it, that it was impossible to obtain a favourable view of all the plants.

The exhibition, in point of extent, exceeded all previous ones held in Germany, and many had wished, says the *Handelsblatt für den Deutschen Gartenbau*, that one-third less space had been occupied by exhibits.

Considerable blame is attached to those inevitable scapegoats at horticultural shows—the judges; and the show authorities come in for a share, for the bad way in which exhibits were placed, rendering the judges' work very difficult. This consisted of the indiscriminate mixing up of exhibits which should have been grouped for the purpose of comparison. This error on the part of the show authorities is not confined to Germany, as many of our readers can testify. Moreover, the judges were provided with no one who was acquainted with the various groups of exhibits to serve them as a guide to the various objects; consequently, much time was lost. The remarks of the editor of the above-named journal as regards arrangements at these big shows is very pertinent. He says that when tasteful or landscape-like effects are desirable, or must be carried out, plants and objects of one kind should be placed in juxtaposition as much as possible, for the sake of comparison, and not be too much subjected to the general arrangement.

The show was (in so far as the foreigner took but little part in it, although it was a so-called international) a triumph for the home gardener; and instead of being a German, it was in reality a Leipzig exhibition, and that without inflicting any injury to it.

Great praise was due to Messrs. Hanisch, M. Jacob, Otto Mann, Otto Thalacker, and Albert Wagner for their efforts in giving to the event a decided stamp of magnificence.

FRUIT REGISTER.

PEAR JARGONELLE.

OF all the varieties of Pears I think there is none so peculiar in its likes and dislikes of soil as the Jargonelle. In this garden, where the soil is heavy and retentive, and consequently cold during the winter and spring, it will barely exist when planted in the open, whether as a bush, pyramid, or as a standard. For ten years we never gathered half-a-dozen Pears from trees in such a position; yet against a wall we manage fairly well. It was a great surprise to me therefore, then to see the half-standard trees growing in Mr. R. Dean's garden at Ealing, wreathed as were the branches from end to end with fruit, not large certainly, but free from spot and blemish of any kind. The smallness of the fruit was owing to the quantity upon the trees, coupled with the long spell of drought, anterior to my visit in the middle of July. The soil there is a light sandy loam, and evidently especially suited to the requirements of this Pear. Another peculiar feature of this variety is its bad selling properties, especially when Williams' Bon Chrétien can be obtained. In many places there is really no sale for Jargonelles in the presence of "Williams." There are plenty of persons, though, who would prefer the former to the latter when caught at the right moment. E. Molyneux.

FLORISTS' FLOWERS.

NEW VARIETIES OF DAHLIAS.

BOTH at the National Dahlia Show at the Crystal Palace, and again at the Royal Aquarium Exhibition, new varieties of Dahlias were produced in large numbers, especially of the true Cactus type. Thanks to raisers, the Cactus Dahlias are following the form of D. Juarezi, but in not a few instances, quite novel and attractive colours, after the character of Mr. Ware's beautiful variety *Delicata*, which it is sup-

posed originated as a seedling from Mrs. Hawkins. The decorative Dahlias so-called, which in many instances are but a reproduction of what our forefathers rejected many years ago, are losing ground, and it is only varieties of a distinct and attractive character which will be found able to compete with the true Cactus forms. The National Dahlia Society have found it expedient to have a class for true Cactus Dahlias from which the decorative varieties are rigidly excluded.

Of new show and fancy Dahlias but very few have so far put in appearance. At the Agricultural Hall Show, Mr. Mortimer, of Farnham, received an Award of Merit for Mrs. Mortimer, the ground deep bright gold, the petals tipped with white and suffused with pink, deepening on some of the petals to orange-brown, a very distinct and pleasing variety that might probably be shown either as a show or a fancy type. Two other promising flowers are Niobe (Keynes, Williams & Co.), shaded crimson, paling to bright crimson on the petal edges; and Cherub (Harris), of much the same colour as a flower which bore this name thirty years ago, buff, shaded with cerise and orange in centre, very pleasing, small as shown—but Mr. Harris never grows his seedlings to large size. Mr. Mortimer has a fancy named S. Mortimer, having a pale pinkish-rose ground striped and flaked with crimson, which is likely to be a useful variety from the exhibitor's point of view. Of true Cactus varieties, Mr. Ware has introduced a white variety named Mrs. A. Peart, creamy-white, with a bright yellow centre, very distinct and good (Certificate of Merit). There are several white decorative varieties in cultivation, but nothing possessing the true Cactus character found in Mrs. Peart. From Messrs. Keynes & Co., have come Lady Penzance, beautiful soft yellow; Lady Henry Grosvenor, delicate salmon base, and bright yellow centre, a decided improvement upon two or three varieties of the same colours; and Chancellor, wine-crimson, flushed with purple upon the basal petals, very fine and distinct. To all three Certificates of Merit have been awarded. *Gloriosa* (Keynes), a large deep bright scarlet variety, which received an Award of Merit at the Agricultural Hall, missed it at the Crystal Palace through being too coarse. Ernest Cheal (Cheal & Sons), deep bright scarlet, gained the same award at Islington, but failed to do so at Sydenham through being out of condition. Matchless (Perkins & Sons), is a very fine dark variety, the colour maroon, paling to crimson on the petal tips, a true Cactus; and Purple Prince, from the same raisers, maroon centre, the base of the petals tipped with bright purplish-crimson; both awarded Certificates of Merit. *Beauty of Wilts* (Pictor), bright orange-salmon, very distinct and pleasing; Mary Hillier (J. T. West), pale bright orange-red, fine shape; Ethel (J. T. West), the base bright salmon, flushed with deep orange shading to scarlet, very fine; and Florence Keith (J. T. West), pale yellow base, edged with deep orange, very distinct and novel, all received Certificates of Merit. *Lilacina* (Cannell), pale yellow ground, deeply suffused with bright purplish-mauve, especially on the petal tips, is a decorative variety, but certificated because so distinct and novel.

So far a few very fine additions have been made to the Pompon varieties, such as Captain Boyton (C. Turner), rich shining maroon, fine shape, medium size; Rowena (C. Turner), yellow ground, heavily tipped with bright pale red; Irene (C. Turner), white, the base of the petals rosy, and side edgings of bright crimson; and Eric (C. Turner), white, with the side margins of deep bright maroon-crimson, all received Certificates of Merit; and the same award was made to *Ceres* (Keynes & Co.), pale yellow; *Little Julia* (J. T. West), bright red, of very fine shape; and *Pomponel* (Cheal & Sons), sulphur base, slightly tipped with the palest rosy-purple.

Some very distinct single Dahlias were shown both at the Crystal Palace and Royal Aquarium, and awarded Certificates of Merit, viz., *Scarlet Perfection*, brilliant scarlet, of the finest shape; and *Queen of Beauties*, orange-scarlet, with an orange tip to each petal, from Messrs. Perkins & Sons; *May Sharpe*, buff, flaked with orange-red and scarlet; and

Mrs. Harris, blush, with side edgings of bright rosy-purple, from Messrs. Cheal & Sons; and The Demon, rich shining maroon; Phyllis, flushed with lilac and flaked with crimson on a pale ground; M. C. C., yellow, striped and flaked with orange-red; and Tommy, yellow, flaked with bright crimson, all from Mr. T. W. Girdlestone. R. D.

SINGLE DAHLIA PARAGON.

I see that Messrs. Keynes, Williams & Co., in their catalogue of Dahlias, give Mr. H. Cannell the credit of having been the raiser of this well-known single variety. As I have in my possession a Dahlia catalogue issued in 1832 which contains this variety, and the only single flower in the list, while its description tallies exactly with what is grown in the present day. Illustrious as Mr. Cannell undoubtedly is as a florist, I can scarcely imagine that he was a raiser

VEGETABLE PRODUCTS IN CHINA.

SOME curiosities of the rise and fall of certain commercial vegetable products may be gathered from a report on the trade of Pakhoi for the year 1892. In some remarks on the export of essential oils the most noticeable developments are said to have been made in Star Anise and Cassia, the former from *Illicium verum* and the latter from *Cinnamomum cassia*. The advance in the value of Anise oil was from £15,185 in 1891 to £35,579 in 1892, and in Cassia oil from £13,074 in 1891 to £41,408 in 1892. Chinese traders, who alone have any knowledge of the trade in Star Anise and essential oils, assert that this extraordinary increase is due solely to increased production, and further state that every alternate year there is a large increase in the trade. This

advanced considerably. This commodity is the refuse of the ground-nuts (*Arachis hypogæa*), after the oil has been extracted, and it is pressed into cakes and used chiefly as a fertiliser in China, for which purpose it is said to be admirably suited, and it is interesting to note that enquiries have been made from Europe with a view to its introduction for the same purpose. Its cost if purchased in Pakhoi, according to the value as stated in the customs returns, would be about £3 12s. per ton, which with freight, &c., to Europe would make its cost considerable.

SPIRÆA BUMALDA, "ANTHONY WATERER."

WITH a perseverance as admirable in its way, as the shrub is in another, Mr. Waterer has exhibited this charming little plant at several of the exhibitions this season. It is of dwarf habit, and its flowers are of a very rich deep rose colour. It is this depth of colour which gives to *Spiræa Anthony Waterer* its distinctive character. For rockeries, the front of shrubberies, or for massing in beds, this little plant will be found most desirable. *S. Bumalda* is of Japanese origin, and is probably a form of *S. japonica*, *alias callosa*, *alias Fortunei*.

DECIDUOUS FERNS.

So many deciduous Ferns fail in late autumn and during the winter through lack of comprehension on the part of their owners of their peculiarity of dying down, that a few lines of warning may be of service. Quite recently we were consulted by a friend, to whom we had given a few British Ferns, and who was much concerned to find that several, notwithstanding the greatest care, were getting shabbier and shabbier, and, as he put it, "dying by inches," whereas they were no more dying than the trees were dying which were shedding their leaves in showers all around us. The phenomenon, in fact, is precisely the same in both cases, the only difference being that as every frond of a Fern springs from the roots, its disappearance with its fellows involves the disappearance altogether of the plants, while in the deciduous trees the trunk and branches remain to attest their continued existence.

Among tropical Ferns, owing to the equability of the seasons, by far the greater part of the species are evergreen, but in the temperate zones a large proportion lose their fronds entirely in the winter, some even, such as *Cystopteris montana*, withering down without any apparent reason in August. Most of the deciduous species, however, continue to grow until the temperature falls so low as to check them, growth then somewhat suddenly ceases. The sap appears to be withdrawn into the crown or rhizome, which swells up and forms the incipient fronds of the next season, either in a clump in those of caespitose habit, or in nodules upon the rhizomes in the case of the creeping ones.

The fronds then change colour, often assuming brilliant tints of orange and yellow, shrivel, fall, and rot away, finally disappearing entirely. That the sap is absorbed by the crown is clearly evidenced by the fact that, if the fronds be cut immediately they begin to turn, the cut fronds will remain as they were for some time, while those left will shrivel rapidly, and eventually become quite thin; furthermore, so long as any sap remains, no matter how dilapidated the frond may appear, a strong leading vein will be found to persist attaching it to the crown. This being the case, it is obvious that the fading fronds should not be removed until they are quite brown and shrivelled, as otherwise the next season's growth is likely to be impaired, and the vitality of the crown, and its consequent ability to withstand the rigours of the winter, are also to a certain extent diminished.

In outdoor ferneries, therefore, it does not do to be over neat when the plants become, as they inevitably do, somewhat unsightly in the fall of the year



FIG. 57.—SPIRÆA BUMALDA, "ANTHONY WATERER." DWARF HARDY SHRUB, FLOWERS DEEP ROSE.

of Dahlias sixty-one years ago. That the credit of re-introducing it is his I gladly admit; and I can go a step further and say, that when Paragon is caught at its best, as Messrs. Cheal & Sons sometimes show it, it is in the foremost rank of the single varieties. It has such a marked individuality of character, that this fact accounts for its being the only single variety included in the catalogue above mentioned; but the year of its actual first appearance is probably unknown. I can quite understand that its distinct marking caused it to be grown through so many years, till it was re-introduced by Mr. Cannell. There were two double Paragons in cultivation during the thirties, one was *Brewers'*, described as a dazzling scarlet; the other *Wells*, primrose; but neither of these is to be confounded with the single Paragon. It would be interesting if Mr. H. Cannell would inform us where he succeeded in finding Paragon, and so was enabled to re-introduce it. R. D.

latter statement, however, is only partially verified by the customs returns for past years in the case of Star Anise, and not at all in the case of essential oils. The Consul gives it as his opinion that the increase, in part at any rate, is to be accounted for by a change of route—that whereas in past years these goods have been sent in native boats to Macao by the West River, last year, possibly owing to increased taxation by that route, the trade has been diverted to Pakhoi. The essential oils of Anise and Cassia are mainly destined for export to Europe, where the demand, stimulated no doubt by the heavy fall in silver, has greatly increased. Enquiries have been made by European firms with a view to purchasing the oils in Pakhoi, but the trade is entirely in the hands of the Macao merchants established at Pakhoi, who prefer to send them to Macao before sale to foreigners and shipment to Europe, and it seems improbable that they will ever be purchased at profitable rates or indeed at all in Pakhoi. Ground-nut cake has also

and even when the fronds are dead and removable, it must not be forgotten that in a state of nature, they serve as a loose covering, and consequent protection, to their own crowns and those of their neighbours. When, therefore, for order's sake, they are cleared away, similar protection should be afforded by a mulching of leaves, to serve at once as some protection against extreme frost and also against drought, which in dry frosty weather with keen easterly winds, has also to be guarded against.

With Ferns in pots under cover the same principles must be kept in view, and decidedly the best plan with the hardy deciduous varieties, is to sink the pots in the soil in some sheltered part of the garden, so soon as the decay of the fronds renders them unsightly.

The chief risk of deciduous Ferns in pots, viz., drought though forgetfulness is thus avoided. In the course of four or five months during which they are invisible, they are almost certain to be neglected, or it may be considered that in their dormant state they are like bulbs and need no attention, but this is by no means the case. If during the winter we visit the Ferns in their congenial homes, we shall find them absolutely soaking in the wet leaf-mould in which most of them will not only be embedded but actually covered. In the winter too, though apparently dormant, they are not altogether so for the greater part of the time, since long before the fronds actually rise, the crowns may be observed to fatten up and swell, while if a plant be lifted, the root-points will manifestly be active. If, therefore, pot plants be allowed to get dust dry, it is clear that these active roots will be killed and instead of crowns fattening up to burst into verdancy like a fountain when the spring comes, there is simply a blank in the collection, and a look to suit it upon the ere-while owner's face, who will then probably insist upon it that it died in the autumn.

Among our native British species the truly deciduous ones are the Lady Fern (*Athyrium filix-fœmina*), and its relative, the Mountain Lady Fern (*P. alpestre*), all the species of Bladder Fern (*Cystopteris*), even the so-called *C. sempervirens* only maintaining its fronds a little longer than its relatives; the Oak Fern (*Polypodium Dryopteris*), Beech Fern (*P. Phegopteris*), Limestone Polypody (*P. calcareum*), the Royal Fern (*Osmunda regalis*), the Woodsias (*W. ilvensis* and *W. hyperborea*), the Moonwort (*Botrychium lunaria*), Adder's Tongue (*Ophioglossum vulgatum*), the Mountain Buckler Fern (*Lastrea montana*), the Marsh Buckler Fern (*L. Thelypteris*), the intermediate Male Fern (*L. propinqua*), the common Bracken (*Pteris aquilina*), and the Parsley Fern (*Allosorus crispus*). All these, even if grown under glass, under quite warm conditions, disappear altogether, so far as fronds are concerned, in the autumn. Nature, however, has no hard and fast lines, and consequently we have species which, though still deciduous under natural conditions, occupy an intermediate place by managing to retain their fronds through the winter under shelter. These are the soft Male Fern (*L. filix-mas*), the Broad Buckler Fern (*L. dilatata*), and its close ally, *L. spinulosa*. These seem only to lose their fronds by stress of weather, and not by the sudden reflux of vital energy which characterises the truly deciduous species previously named. On the other hand, such species as the Shield Ferns, viz., the Holly Fern (*Polystichum Lonchitis*), and the hard and soft Shield Ferns (*P. aculeatum* and *P. angulare*), the Hard Male Fern (*L. pseudo-mas*), the Hard Fern (*Blechnum spicant*), the Hart's-tongue (*Scolopendrium vulgare*), the Common Polypody (*P. vulgare*), and all the Spleenworts (*Asplenium*), are perfectly evergreen, maintaining their foliage well into the following season, and being thus, under shelter, well adapted for winter decoration. The deciduous Ferns, however, though useless in this respect, make up for their winter invisibility by such a sudden outburst of delicate verdure in the spring, altogether unhampered by the presence of old fronds, as in the opinion of many amply compensates for the drawback. Their growth is also more rapid, and hence, while more of the

deciduous species are in full form early in June, the evergreen ones require another month, some even, such as the common Polypody, not being fully developed before August or September.

In collections under glass, the end of the year is a good time for a general readjustment, and in forming them, it is well to bear the proportion of deciduous and evergreen species in mind, as by so doing, the winter fernery may lack but little in attractiveness as compared with that of the summer since, though fewer in number, the evergreen plants, having more elbow-room, are fully capable of affording a fine contrast by their verdure to the frosty and snowy condition of things out-of-doors.

The same remarks apply to such hardy exotic deciduous species as the Canadian Maidenhair (*A. pedatum*) and the Ostrich Feather Ferns (*Struthiopteris germanica* and *S. pennsylvanica*). These, like the British ones, can be sunk in the soil, and will, when taken up, overhauled, and reinstated in the spring, very speedily send up their verdant plumes to gladden the eye that can appreciate delicacy of form, coupled with that gamut of greens which constitutes so great a proportion of the harmony of vernal nature, and such an agreeable foil to the brighter hues of the floral wealth of summer.

A curious feature which we have observed in connection with some deciduous Ferns is, that their period of rest seems determined less by the seasonal peculiarities of the place where they are grown, than those of their place of origin. We have, for instance, varieties of the Lady Fern found in Devonshire and in Scotland, the latter of which though domiciled in Essex for ten or twelve years, rise constantly about a fortnight later than the south country ones grown side by side with them, the deterrent effect of the longer Scotch winter seeming to be permanently impressed upon the species. It would be interesting to know if this be generally the case, as it touches upon the question of heredity of acquired characters. We have also a splendid variety of *L. dilatata*, found in the Azores, which has quite lost its semi-deciduous nature, being perfectly evergreen, though frequently frozen. *Chas. T. Drury, F.L.S., Fernholme, Crest Gate, Essex.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

THE PINERY.—Pine plants to show fruit at the beginning of the year should now be in a well-rooted condition, the roots filling every part of the ball; and those to be selected for the purpose indicated should be placed where they can receive special treatment. These future fruiters should not suffer from lack of water at the roots, nor should the soil be constantly kept very moist, enough clean soft water being afforded to keep the plants in health. Some growers of Pines force plants into fruit by drying the soil till injury is done by it and an arid atmosphere in the house. The result of this kind of treatment is fruit of small size and of inferior quality. The temperature need not rise above 65° at night, and there should be a gradual decrease of heat as the season advances, in order to rest the plants. Those which are to show fruit some months later than the foregoing, should have a healthy growing atmosphere maintained about them, air being admitted early in the day. Where stable manure is employed to furnish heat, more air will be required in the house than if hot water were employed. When the sun is powerful the use of artificial heat should be dispensed with as much as can be done with safety, remembering also that a high temperature in dull, sunless weather is ruinous to young plants.

PEACHES AND NECTARINES.—Those trees which fruited in May will now be losing their leaves. A good shake of the wires to which trees are trained, or the same applied to standard trees, will cause many leaves to fall; but forcing the leaves from the branches when they are still doing good service is weakening to the trees. All lateral growths should be kept cut off, and attention given to thinning out the old wood which produced the crop of the past year. Sun and air should be allowed to have full

access to the trees and borders, and the surface of the latter should be freed from mulching. Borders inside the houses which are well drained may require water, and need weekly examination with a probe stick, for they should at no time be allowed to become dry; on the contrary, a sodden soil prevents the ripening of the fruit-buds.

MELONS.—When fruit is ripening it should be well exposed to the sun, and as much air afforded as can be, and no more moisture supplied at the roots than will keep the foliage and roots healthy; all syringing of the leaves should now cease, except where young fruits are swelling, and only then when weather is sunny. It is a great point in Melon growing at any season to maintain healthy foliage to the last. The reason why we find so many fine-looking Melons at exhibitions, with perfume strong and tempting, and the flavour of the worst description, is due to the fruit having been ripened on plants destitute of healthy foliage, and often after the roots have been destroyed by a too liberal use of liquid manure. Late crops now setting should have close attention in fertilising the strongest and best-placed blooms. In pits the fruits should be elevated, resting on bricks or tiles. Our late crops in pots have set a crop without much trouble, careful watering and airing being important items of management.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

FRENCH OR KIDNEY BEANS.—As these are so much in request during the winter, preparations should now be made for furnishing a continuous supply. Those gardeners who have some artificially-heated pits will have no difficulty in this matter. Failing suitable pits, the Beans can be grown in houses with other plants, but it does not make their cultivation easy if the latter require a different kind of treatment. Beans sown in heated pits at this season should afford a supply of pods during the early part of the month of December; and if precautions have been taken to sow some seed in a pit or cold frame, these should supply the table till those sown in heated pits are ready for use. The pods of Runner Beans as they become ready should be gathered for fear frost should destroy them and the plants. The pods can be kept in a fresh state for a week or two in a cool, dark cellar; and the pods left on the plants will grow rapidly when the others are gathered. French Beans in bearing should be covered up securely at night if frost is imminent, and lights may be placed over those plants that are just come through the soil.

ASPARAGUS.—Plants on beds set apart for forcing, will have completed their growth, and any roots required for forcing at an early date should have all top-growth removed, as the longer the period of rest thus induced, the more readily will they respond to the forcing.

AUTUMN ONIONS.—If these are not planted at once, the operation had better be deferred till April, for unless the roots take a good hold of the soil before frost sets in, they will be lifted out of it and destroyed. Growth in those Onions that were transplanted earlier should be encouraged, so that they may soon become established.

VEGETABLE MARROWS.—Like French Beans, these succumb to the first touch of frost, and precaution must be taken to cover them at night when there are signs of frost. After bright days, with the wind in the north, sudden frosts will occur at night, and it is well to be on the safe side. If a slight covering of bracken or other litter be thrown over the plants, it will suffice to ward off several degrees of frost, and in that way the supply may be prolonged for a few weeks longer. All Marrows should be cut when of usable size, preserving them in a cool place.

PEAS.—Those sown in beds in brick pits for a late supply must be closely watched for mildew, as, if it should much increase, it will be of no avail to try to get a crop. See that the plants do not suffer from want of water, as this has a tendency to induce mildew. The glass lights should be put on at night and tilted at the back, removing them in the early morning, so that the plants may be kept sturdy.

STORE-ROOM.—All roots, including Potatoes, should be examined at frequent intervals, and decaying roots removed. Shallots must be kept cool and dry, or they will start into growth; the

same may be said of Onions, which will keep sound longer if kept cool. Preparations should be made on wet days for storing the roots of Salsafy, Scorzonera, Carrots, and Beet, as the time will soon arrive when it will be necessary to take them out of the ground.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

CATTLEYAS.—*Cattleya Bowringiana* is one of those useful species which come into flower during the latter part of October, and the gardener who has a good stock of the plants, if he places them in different parts of the Cattleya-house, may have flowers till December. *C. Bowringiana* is about finishing its new growths, and should be watered carefully, as it will start anew if too much water be afforded. Let, therefore, the peat and live sphagnum moss get quite dry before affording water. The plant will bear much light without the leaves being injured, but a glaring sun on an air-bubble in the glass will soon disfigure the leaves.

INTERMEDIATE-HOUSE.—*Cologyne cristata*, *Cymbidium eburneum*, *C. affine*, *C. Mastersii*, *C. Lowianum*, *C. L. concolor*, *Sobralia macrantha*, *S. xantholeuca*, *S. x. alba*, *S. leucoxantha*, are plants which do very well with the Cattleyas; and those which are well established may have liberal supplies of weak manure-water given them, especially *Cologynes*, these being now engaged in perfecting their new growths, and they promise to be fine this year. *Cologyne cristata alba* and the *Trentham* variety of *cristata* make longer rhizomes than the others, and it is good practice to keep them pegged round the sides of the pots whilst growing, so as to encourage rooting in the potting materials, instead of their going outside the pots. Pseudobulbs are much finer when roots are pushed into the former. By this date shading will be less needed than formerly—in fact, those on the north side of houses may be dried and rolled up under the pent-house, or stowed away. The blinds on the south or sunny side of the house may remain in place for a short time longer, bright sun doing a good deal of mischief in a short time even at this season. On very bright days let the houses be well damped down, and well ventilated, all the light and sun being afforded that is safe. Species which need more attention in the matter of shading than others are *Phalenopsis*, *Vandas*, *Angraecums*, and some *Cypripediums*, and the blinds should be run down over these on very bright mornings. When any *Cattleya* or *Dendrobium* has completed its growth for the season, see that these are properly hardened off, and then remove them to a drier and more airy house. Remove the plants of *Cattleya* as fast as they finish their new pseudobulbs to that end of the house where there is more light, and the ventilation more abundant, and give but little water at the root. The same kind of treatment should be applied to *Dendrobiums*, removing these plants to a cool early vinery where the ventilators are constantly open, but so arranging the plants for the present that no cold draughts reach them, water being withheld, but not suddenly. *Thunia Marshalliana* and *T. Bensoniæ* are placed in the vinery along with the *Dendrobes*. *Pleiones lagenaria* and *maculata*, now losing their leaves, should not be dried off before flowering is past, when they may be kept slightly drier for a few weeks.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

ROOT-PRUNING APRICOTS.—Trees which may have made very strong growth may be root-pruned with advantage at this season, and the pruning will correct this the first season, but unless the same be repeated every year until they fruit heavily, growth will be as strong as ever, with the result that sooner or later the branches will die off, as is often witnessed. This chiefly happens in districts the natural soil of which is too deep and rich for the Apricot. In such soils satisfactory results can only be obtained by having the roots restricted to borders from 4 feet to 6 feet wide, by building a 4½-inch brick wall up to within 6 inches of the surface of the border. In districts where chalk is readily obtained, a wall may be made of this material in the manner described in one of my earlier Calendars. This mode of restriction has been tried in these gardens with very good results, the trees not making nearly so strong a growth, and the crops are considerably larger than was formerly the case. For Apricots, Peaches, and Nectarines, I prefer to have the borders from 4 feet to 6 feet in width, and confined

in the above manner; and if a brick wall is decided upon, and tiles are used for edging, these can be placed on the top of the wall, and kept in position with a fillet of cement on either side. Apricots are so profitable a crop, and so greatly in demand, that no ordinary expense or labour in bringing them into full bearing should be considered too great. On a suitable formation, like chalk, limestone, or almost any kind of rock which is not more than 2 feet from the surface, these restrictions of wood growth would be unnecessary, and in the event of non-success on such soils, very liberal root-waterings should be afforded at this season to enable the trees to fully develop the flower-buds; and throughout the growing season a good mulching should be laid over the roots.

LATE PLUMS.—At no previous time do I recollect *Coe's Golden Drop Plum* to have ripened so well as this year; and to prolong its season, although the fruit will hang for some time on the trees after it is ripe, they should be gathered when quite dry, and laid in a single layer on the fruit-room shelves, but not plucking them off the stalks, but gathering the fruit with the stalks attached, or decay will soon take place, owing to the rupture of the skin. Transparent Gage, another very excellent sort, will also keep well if treated in the same manner. *Belle de Septembre*, a very fine kitchen Plum, which should also be in all good collections, as being so late in an ordinary season, does not ripen till after the wasps have disappeared. The above also applies to Damsons, which may be kept after being gathered for several weeks quite fresh, and be a welcome change for tarts.

GENERAL WORK.—Take advantage of dry weather to cut down weeds among bush trees, also Strawberry plantations, and from the latter remove runners, which despite the dry weather the one-year old plants are so persistent in making. Afford old plantations of Strawberries liberal supplies of liquid manure during showery weather. Cut out the old fruiting canes of autumn-bearing Raspberries so soon as they finish giving serviceable fruits, and tie up the young canes in the manner described for the summer-bearing sorts; also remove any late sucker growths from the stools of the summer-bearing sorts.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

VIOLETS.—Six of the best sweet-scented varieties for flowering in frames or pits during the winter and spring months, are *De Parme*, *Lady Hume Campbell*, *Marie Louise*, *New York*, *Queen of Violets*, *White*, and *The Czar*. Preparations should be made at once for lifting plants that have been grown for the purpose on borders outside. They should be in their winter quarters by the end of the first week in October. For earliest flowers, plant *New York* and *Marie Louise*, in a frame on a spent Cucumber dung-bed facing the south, or make up a bed of rotted dung, 2 feet high at the back, and 1 foot at the front. Place two light frames over this, and fill up the insides with manure to within about 1 foot of the glass, and give it the same slope as the top of frame. The depth of space left for plants must depend on the size of the ball of earth to be taken with the roots; when the plants are in and all is finished, there should be about 4 inches between the leaves of the plants and the glass. The ball of earth with the roots should be placed on the manure, so that the roots touch it at once. Give a space of about 8 inches from plant to plant, and fill up between with old garden-soil. If the plants in their summer quarters were in lines a foot apart, with about 6 or 8 inches between each plant, a man should start at one end of the border, and with a bright spade take out a spit of soil up to about 3 inches of the first row of plants. A sharp cut of the soil between each plant, then 3 inches behind the row, dig out each plant, hand them with the spade to the man with the barrow; if the soil is dry, give a good soaking of water previously. There is not much damage done to the plants in this way, and careful attention to this at the time of lifting is imperative. After the plants are in, give a mulching of old horse-dung passed through a coarse sieve, and then a thorough soaking of water three times over; and if troubled with mould, spread half an inch of small charcoal all over the bed. Treated in this way the plants do not feel the shift, and continue flowering. *De Parme*, *Lady Hume Campbell*, *Queen*, and *The Czar*, require the same care. They are not so early in flowering, and they do well in span or lean-to pits without any further protection

than the glass affords. Give abundance of air night and day during fine weather, and keep close during severe frosts; those on the dung-beds, too, should be well protected from frost, and if the weather is very bright after planting, and there are any signs of the plants flagging, give them some slight shade. It is a good plan to put some plants of each sort into pots and boxes, they often come in useful during bad weather, when the frames cannot be opened; place them in a cool-house, where there is no fire-heat. Boxes 2 or 3 feet long, 9 inches wide, and 9 deep, will hold two rows of plants, and are handy for moving about; they should be well-drained, and some good rotted manure placed over the drainage. Or they do very well in pots, if kept kept from fire-heat, and good attention paid to watering, with plenty of light, and a free circulation of air at all times.

THE FLOWER GARDEN.

By T. H. CRASP.

PROPAGATION OF PLANTS.—One of the most pressing matters at this season is the completion of the propagation of all kinds of plants raised from cuttings needed for bedding-out another year. In addition to doing this, it is advisable, at the end of the month, to lift a few plants of each kind of *Pelargonium*, and to pot them in as small pots as they will go, and place them on a shelf of a dry house of some kind, watering them sparingly now and during the winter. In the spring these old plants will usually produce abundance of cuttings. We may now expect slight frosts in the less warm parts of the country, and any tender plants which it is intended to winter should be potted-up and placed in safe quarters.

CARNATIONS, PICOTÉES, AND PINKS.—The layers or cuttings of these, being rooted, may be planted where they are to bloom. If beds are employed, it is advisable to raise them slightly, say, 3 or 4 inches above the surrounding ground, and in most cases fresh loam, decayed manure, or road-grit will be found useful additions to the soil. The layers should be carefully cut from the mother plant, and as much soil preserved about the roots as possible; and still more care should be taken with plants struck from cuttings. Carnations and Picotées may be planted at about 12 inches apart each way, and the Pinks a trifle nearer together. It is good practice to pot-up some of each kind and variety, standing them in a cold frame for the winter—they are of use in filling up gaps in the beds in the spring.

HERBACEOUS BORDERS should be tidied up, all spent flowers and old stems, &c., being removed, and if seed is required of any plant, no time should be lost in securing it, gathering the seed-vessels as soon as the seeds are found to be fairly matured. Let the seed-vessels thoroughly ripen on shelves in a dry house before cleaning and storing the seed. Most of the ornamental grasses and *Helichrysums*, &c., should have been cut and dried some time since, for if this job is delayed till the seed is ripe, many of them would be valueless. All late-flowering species of everlastings should now be cut, tied up in bunches, and hung up in a vinery or dry house.

BULBS.—All *Daffodils*, *Narcissus*, *Crocus*, *Snowdrops*, *Lilium candidum*, and *Crown Imperials*, should be planted about this time, or as soon as the ground is cleared of summer flowers. *Anemone fulgens* should also be planted for early display; and if the tubers of such things as *Iris reticulata*, and its varieties *I. hispanica* and *I. anglica*, are planted this month, they will succeed much better than if left to a later part of the year. Bare places in borders, if not required for the planting of bulbs, may be sown with *Candytuft*, *Nemophila*, *Collinsia*, *Limnanthes Douglasii*, and other hardy annuals.

STAMP COLLECTING.—We have received the July special issue of *STANLEY GIBBON'S Monthly Journal*. The mere fact of the existence of this magazine, which is entirely devoted to matters connected with foreign postage stamps, shows how the fashion for collecting these has increased of late years, and what a business it has become, and how much laborious trifling has been superadded to what was of a more wholesome character. The issue before us has many illustrations, and these, as well as the letterpress, should interest general readers, as well as those for whom they are specially intended.

EDITORIAL NOTICES.

LETTERS FOR PUBLICATION.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, SEPT. 26. Royal Horticultural Society: Floral and Fruit Committees, at the Drill Hall, James St., Westminster.

SHOWS.

WEDNESDAY, SEPT. 27. Show of Hardy Fruit, &c., at the Gardening and Forestry Exhibition, Earl's Court (Three days). Gloucester and Cheltenham Horticultural Society (Two days).

SALES.

MONDAY, SEPT. 25. Dutch Bulbs, at Protheroe & Morris' Rooms. Plants, at Protheroe & Morris' Rooms. Large Importations of Dutch Bulbs, at Stevens' Rooms. Orchids, Ferns, Stove and Greenhouse Plants, at Ham Green, near Clifton, Bristol, by Alexander, Daniel, Selfe & Co.

TUESDAY, SEPT. 26. Important Unreserved Sale of Established Orchids, and Stove and Greenhouse Plants, by order of the Executors of Stephenson Clarke, Esq., deceased, by Protheroe & Morris (three days). Dutch Bulbs, at Protheroe & Morris' Rooms. Large Importations of Dutch Bulbs, at Stevens' Rooms.

WEDNESDAY, SEPT. 27. Dutch Bulbs, at Protheroe & Morris' Rooms. Annual Unreserved Clearance Sale of Greenhouse and other Plants at The Floral Nursery, Maidenhead, by order of Mr. R. Owen, by Protheroe & Morris. Large Importations of Dutch Bulbs, at Stevens' Rooms.

THURSDAY, SEPT. 28. Plants, at Protheroe & Morris' Rooms. Bulbs, at Protheroe & Morris' Rooms. Large Importations of Dutch Bulbs, at Stevens' Rooms.

FRIDAY, SEPT. 29. Bulbs, at Protheroe & Morris' Rooms. Orchids from Mr. F. Sander, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 30. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—55°·7.

Technical education in gardening. We are all agreed that practical training in a garden, under an experienced master, is the most important factor in the education of a gardener. If to the routine experience thus obtained be added an intelligent knowledge of principles, and the ability to turn it to account in practice, we have an ideally perfect education. This is what is to a great extent carried out at Kew, though, of course, there is no opportunity in that establishment of obtaining information in the culture of fruit and vegetables. This is what is carried out in detail in the Versailles School of Horticulture, in those of Ghent and Vilvorde in Belgium, and in many similar establishments in Germany and America.

An education of the character just mentioned should fit men, if they be otherwise suitably endowed, to rise above the class of garden-labourers and to fill the higher places in the gardening world—to be the directors and teachers

of others, and to command an adequate remuneration. Such an education can only be obtained at a properly-equipped school of horticulture on the one hand, and in a well-ordered garden establishment on the other. Then rises the question whether, assuming the necessity of instruction in the principles of cultivation, that instruction should precede, accompany, or follow the more strictly practical training. A good deal might be said in favour of either plan. We are not prepared to discuss this point now; all that we are for the moment concerned with is the necessity for increasing the knowledge and developing the intelligence of the young gardener, as well as his memory and manual dexterity. We want to teach him to observe and to reflect as well as to work, and thus to enhance the value of his labours, and to put at his disposal resources that practical work by itself would never give him. So that this be accomplished, the manner of doing it is a point of minor importance.

So far we have had in view the class who, beginning early, pass the most receptive part of their lives in the practice of routine gardening. But there is a larger and more varied class whose requirements have to be provided for, and that is the class which constitute the auditory at the lectures which are delivered under the auspices of many of the County Councils. These men, speaking generally, do not aspire to fill the higher ranks of the profession; they have other occupations—they want to know enough to turn their little gardens or their allotments to account, and that is all. For the most part, they are almost entirely ignorant of the practice and quite devoid of knowledge of the principles of gardening or farming. We do not see that any better plan can be adopted in this case than what is now followed. Thorough systematic education is here out of the question. The instruction given must clearly be rudimentary; it must be severely practical, and it must, so far as possible, take the form of practical demonstration. Those lecturers have, as it seems to us, succeeded best who have recognised these facts, and acted on them. The local flower-shows might be utilised in this way with great effect if the judges or some competent person could, as was done at Carshalton, point out to the competitors the reasons why certain exhibits were placed first and others last on the list. Much good could also be effected by the display on such occasions of the particular varieties found by experience to be the most suitable to the locality and to the circumstances of the people.

A third class remains to be spoken of, and that is the lads and lasses in the rural schools. Our hopes of progress and advancement largely centre in them. In all such schools, after the elements common to the education of all are provided for, instruction should be given, so far as circumstances will allow, in the principles and in the practice of cultivation. In this manner the lads on leaving school would be far better suited for the business of life than they now are, and after leaving school they would be in a position to follow up with profit what they had learnt at school by attending the lectures and demonstrations of the County Council lecturers. How much more profit might they not be expected to derive from them, than do the present auditors, who for the most part have had no previous education of the kind. To carry out the school education, we need teachers, men or women who, knowing what are the requirements of their pupils, have ability and knowledge enough to supply them. Amongst others, the Essex County Council has acted on

this view. They have established a normal class for teachers, who are carefully instructed and thoroughly drilled in the principles which underlie all successful cultivation. The method pursued is excellent in that it compels the teacher to instruct himself. He is not merely talked to and shown diagrams and preparations, but he has to make them for himself, to develop his own faculties by himself. A better plan of training teachers it would be hard to find. As to the place of examinations in the scheme of education, and the results already obtained, we may have something to say on another occasion.

DISCHIDIA RAFFLESIANA.—Many of those who learnt their botany from LINDLEY's publications have been interested in the figure and description given of the pitchers of this plant, and in the fine plate in WALLICH's *Plantæ Asiaticæ Rariores*. An opportunity of seeing the plant itself and its curious appendages, was, however, not offered till comparatively recently, when the living plant was introduced to Kew from Java by Dr. TREUB. It is an epiphytal plant, closely allied to *Hoya*, with numerous roots proceeding from its stem, and with fleshy orbicular leaves. The pitchers are borne on short lateral shoots. Their appearance is sufficiently indicated in our illustration (fig. 58). Numerous adventitious roots, not shown in our illustration, rise from the base of the pitcher, and dip into the cavity of the pitcher. The pitcher is a modified leaf, the inner surface corresponding, according to TREUB, to the lower surface of an ordinary leaf. Dr. TREUB considers that the pitchers serve to collect and retain rain-water. BECCARI, however, is of opinion that they act as ant-shelters, and DELPINO advances the opinion that they are insect-traps; but against this view TREUB points out that the roots which branch within the pitcher would afford a ready means of escape. Moreover, there is nothing to show a carnivorous habit in the minute structure of the pitcher. In the June number of the *Annals of Botany*, Dr. SCOTT and Miss SARGANT give a summary of what has been written on the subject from the time of WALLICH to the present day, and add a full account of their own observations on the minute anatomy and morphology of the pitchers. They confirm the statement and opinions of TREUB, as before-mentioned.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the above will take place at the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, September 26, when prizes will be offered for Gladioli. At 3 o'clock Mr. W. IGGULDEN, gardener, Marston House, Frome, will deliver a lecture on the "Causes of Failure in *Eucharis* Culture."

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are informed by Mr. G. J. INGRAM, the secretary of the Institution, that an election of pensioners on the funds of this Institution will take place in January next. Intending candidates should therefore send in their applications on or before October 14, after which date they cannot be received. Forms of application and full particulars may be obtained from the secretary, 50, Parliament Street, London, S.W.

HORTICULTURAL COLLEGE, SWANLEY.—The Experiments Committee of the Kent County Council held a meeting at the College on the 7th inst., when Professor F. CHESHIRE gave an account of his visit to some agricultural and horticultural schools in France, illustrated by photographs taken by him. At the Agricultural College at Grignon trials of manures were being made, both in field and pots, and in order to investigate the composition of the water passing through the soil, cement-tanks 3 feet deep have been made, in which the plants are grown, and what is lost by the soil is found out by analysing the water. At the Versailles School of Horticulture instruction is given in the growth of vegetables, fruits, and decorative plants under glass. Here more



FIG. 58.—DISCHIDIA RAFFLESIANA: A RARE PITCHER-PLANT AT KEW. (SEE P. 368.)

applications for the employment of students on leaving are received than they are able to supply, which proves the efficiency of the school. At Vincennes is a smaller horticultural school. Here the Professor met Mr. GEO. VILLE, the celebrated agricultural chemist. In their experiments on preventing Potato and Vine disease, the copper sulphate is mixed with carbonate of soda instead of lime, as they find this composition admits of a finer state of division than when lime is used; in order to render the solution adhesive, sugar is added in preference to molasses. In the gardens of the Luxembourg, Paris, there is a portion devoted to specimen fruit trees and bushes trained in different styles. Once a week a free public lecture and demonstration are given as to management and pruning. The next meeting is fixed for September 21.

MR. MILNER.—It is proposed to invite this gentleman to a complimentary dinner, in acknowledgment of his services to the Gardening and Forestry Exhibition, on Thursday, September 28. Gentlemen intending to be present should communicate with Mr. KNOWLES, at the Exhibition.

THE HESSIAN FLY.—A very interesting and instructive lecture, by FREDERICK ENOCK, F.L.S., &c., on the Hessian fly was delivered at the Rooms of the Balloon Society at St. James's Hall, Piccadilly, on Friday evening, September 15, Dr. GUTTERIDGE in the chair. The lecture was rendered the more appreciable by the aid of capital illustrations and the oxy-hydrogen lantern. That the fly is doing annually much damage to the Wheat crops of this and other countries, especially the United States of America, was demonstrated by the fact of the greatly-reduced harvest of farms on which the insect is present in large numbers, the lecturer instancing a field in Devonshire in which in the course of three hours he had collected 1400 straws containing the grubs of the fly. The lecturer gave illustrations of the fly, of the grub, and of the chrysalis in their various stages of development; the manner and position in which the fly deposits its eggs, and the mode of its attack on the Wheat-straw. The farmers are, he said, helpless in face of this danger, and knowing nothing of the life-history of the fly, they simply do nothing. The Wheat has the fly, it is an act of Providence, and there is no help for it! The result is that the fields get more and more infested, and the returns go nearly down to *nil*. Various suggestions were made for lessening its numbers, including the breeding of a particular English parasitic insect, "The Blessing," whose eggs are laid in the body of the grub of the Hessian fly, and on which it feeds. The most feasible means, however, seem to be the protection of small insect-feeding birds, burning the stubbles of affected fields, also the chaff and dressings which are separated from the grain in the winnowing machines, instead of throwing the latter on the dung-heap, to still further increase the pest. The discussion which followed the lecture chiefly debated the subject of the destruction of the fly; for none could dispute the gravity of the mischief caused by it.

"CREAM" (of the World's Fact, Fun and Fancy) is the title of a new weekly penny paper, which, under the editorship of Mr. FRANCIS GEORGE HEATH, will shortly appear.

RAMSGATE PUBLIC PARK.—A very pretty park, laid out by Mr. J. CHEAL, of Lowfield Nurseries, Crawley, was opened on Thursday, the 7th inst., by Alderman W. P. BLACKBURN, mayor of the town. The transfer of the property from the trustees of the former owner took place on September 29 last year to the representatives of the ratepayers, but the opening was deferred to the present season. The park, although of small extent, contains several interesting features, and its design and laying-out is most creditable to Mr. CHEAL.

"THE FLORA OF BRITISH INDIA."—This important work is now rapidly approaching completion. Part XIX, just issued, contains the remainder of the enumeration of the Palms by Signor BECCARI and

Sir JOSEPH HOOKER. Pandanads, Typhads, Aroids, and some smaller orders are monographed by Sir JOSEPH; whilst the Cyperaceæ are treated of by Mr. C. B. CLARKE, who has made an exhaustive study of the order.

THE VINTAGE.—French papers report that the vintage is already over in many parts of France. During this century the vintage has taken place ten times in the first fortnight of September, seventy times in the second fortnight, nineteen times in the first fortnight in October, and once in the second fortnight of that month. This year the vintage began on the 10th of August, and was general on the 20th.

"SCOTCH PLAID."—Messrs. CANNELL & Co. send us under this name flowers of a double Begonia, the petals of which are rich deep crimson, flaked and spotted with green. The contrast is very beautiful, and we trust Messrs. CANNELL may be able to fix so beautiful a variety. The inner petals are clearly merely anthers in a petaloid form, brilliantly coloured and devoid of pollen.

FERMENT OF THE PINE-APPLE.—Mr. R. H. CHITTENDEN has a paper on this subject in the *Transactions of the Connecticut Academy of Arts and Sciences* (1893, p. 281), cited in the *Pharmaceutical Journal*, from whence we take what follows:—The author states that the ripe Pine-apple contains a very powerful proteid-digesting principle, and that the juice also possesses in a remarkable degree the power of curdling milk. The juice appears to contain three distinct proteids.

FLORAL DISPUTE AT HAWICK.—We condense the following from the *Hawick News* of September 8. In this case, JOHN MARTIN, joiner, Loan, brought an action against JOHN RUTHVEN, Allars Crescent, for £12 in name of damages for having lodged an objection against one of his exhibits with the secretary of the Hawick Working Men's Allotment and Cottage Garden Society, the result being that the prizes, including the medal, which pursuer had won at the show on August 5, were forfeited, and he was expelled from the Society. MARTIN brought a second action against the Society for £12 as damages; and a third action for £2 1s. 6d., being the value of the prizes. The pursuer deposed that RUTHVEN, who was second for the medal, objected to him on the ground of unfair practices, alleging that he had received Pentstemons from Mr. WOOD, Summersfield Nurseries, the night before the show, the inference being that he had exhibited these as his own. He repudiated this accusation. While admitting that he had received Pentstemons from Mr. WOOD, he did not know they were coming, and did not exhibit them as his own. For the defence, JOHN RUTHVEN, defender, deposed that when he lodged the objection he thought from what he had heard that it was a case for inquiry. He had no ill-will to pursuer. The Sheriff, after hearing the evidence, said he did not think it was for him to interfere with the decision of the committee. They had JOHN WOOD's statement that he offered to send these Pentstemons to the pursuer, thinking they might be of some use to him for the show, evidently intending they should be shown if he wanted them. It was a dishonest suggestion on Wood's part, and he was sorry that MARTIN did not at once scout the idea of having anything to do with them, but he neither answered yes nor no. From the way he spoke to the boy FISHER, it was evident he expected these flowers, and there was no doubt he was annoyed when the flowers came in a rather withered state. He thought it would be very injudicious and wrong of him to interfere with the committee's decision. In the first case he assuaged defender with 5s. expenses. In the second case he granted 3s. expenses to each of the nine witnesses, and 5s. to the agent.

IMPROVING THE QUALITY OF FRUITS.—Nothing is more common, in conventions of fruit growers, than to hear one man say of a certain variety, that it is tasteless and worthless, while the following speaker may laud that variety as one of the highest flavour and best quality. The truth is, that ripening fruit is

an art, which is only to be learned by intelligent experience. Some kinds of fruit require to be gathered a little before ripe, in order to produce the highest flavour, while others require to be dead ripe on the trees before they are gathered. Again, to get the best quality some require to be ripened in a dark and cool place, while others require a warmer and lighter situation. All this has to be learnt by experience, and one of the pleasures of amateur gardening is to study these points, with the view of the production of the best class of fruit. *Meehan's Monthly for September.*

NATURAL VARIATION.—The accumulation and persistence of variations, perhaps originally very slight, result in the establishment of what we find it convenient to describe as a species. From this point of view, a specimen sent us by Mr. WOLLEY DOD is very interesting. It is a Campanula in which not only have the petals retained their primitive isolation, so that the corolla consists of five distinct petals, but the leaves are linear, like the petals, instead of being broadly ovate as they are habitually. It is difficult to form an opinion whether the change in question is indicative of the potential formation of a new species, or of a reversion and retrogression to ancestral characteristics. Does Mr. Dod's specimen represent a step forwards, an arrest, or a reversion? For ourselves we incline to the latter view, but Mr. Dod shall speak for himself:—"I send a specimen of a constantly recurring form of Campanula lactiflora. It is liable to come from seed of any individual of the typical form, about one (or less) per cent. coming from all the seed I raise, as well as from self-sown seed, and I daresay I can find twenty plants of the form in different parts of my garden. It is as long-lived and as healthy as the type, but not so robust. It is curious how the form of leaf corresponds with the form of flower. I have observed the same indication by leaf in other garden plants. A similar form in *C. rotundifolia* seems connected with a double corolla, i.e., seed from the double *C. rotundifolia* always gives some stellate-flowered forms like that which I enclose, and which I have long cultivated."

ONION SHOW AT BANBURY.—The Onion was considerably to the fore at Banbury on the 14th inst., when the annual exhibition of the esculent, instituted by Mr. HENRY DEVERILL, was held in his seed shop, a portion of the roadway outside also being utilised for the purpose. If the bulbs staged for competition were not quite so large as those of last year, they were characterised by colour, solidity, and finish, and there is every probability that Onions, large or small, will keep well during the autumn and winter. The best six of any one of Mr. DEVERILL's Pedigree Onions was the Lord Keeper, weighing 15 lb., shown by Mr. T. WILKINS, The Gardens, Inwood House, Blandford, a Gold Cup or Medal being the prize. An extra prize was awarded to Mr. R. LYE, The Gardens, Sydmonton Court, Newbury, for six bulbs of Ailsa Craig, weighing 13½ lb.; there were nine competitors. There were sixteen competitors in the class for twelve specimens of Ailsa Craig, Advancer, Cocoa-nut, or Excelsior. Here Mr. Wilkins was 1st, with Ailsa Craig, weighing 26½ lb. Mr. WILKINS was again 1st out of thirteen competitors with twelve specimens of Rousham Park Hero, Anglo-Spanish, The Lord Keeper, or Royal Jubilee, these representing the flat, as the former class did the globe-shaped Onions, having finely-finished Anglo-Spanish, 20½ lb.; Mr. WAITE, Glenhurst Park Gardens, coming 2nd with the same, 18½ lb. The best twelve of Improved Wroxton, a globular variety that is recommended as an excellent keeper, came from Mr. PEASE, The Gardens, Swallowcliffe Park, Banbury, weighing 14 lb.; Mr. WILKINS was 2nd, with 15 lb., but the specimens lacked the superb finish of those shown by Mr. PEASE. The best twenty of any Onion, shown by cottagers, came from Mr. MOSS, Hackwood, Basingstoke, they were Ailsa Craig, weighing 30½ lb. Collections of eight kinds of vegetables sent out by Mr. DEVERILL were invited, and five really superb collections competed. Mr. POPE was 1st, Mr. WILKINS 2nd, and Messrs.

WAITE and R. LYE equal 3rd. The question sometimes arises: Do these large Onions keep well? And the growers one and all assert they do. They are greatly esteemed for boiling whole, and serving up with sauce. One nobleman has one every day for his dinner, and they are valued for "braising"—a favourite dish with many of the gentry.

ARAUCARIA BIDWILLII.—The *Revue Horticole* announces the fructification of this fine species at Antibes. Each of the four cones was bigger than a man's head. One weighed 4 kil. 890 grammes, the other 4 kil. 730 grammes.

WASPS have been as abundant in France this season as here.

ONCIDIUM ORNITHORHYNCHUM (see p. 338).—The word album was accidentally omitted in the mention of this plant. The white variety is indeed still rare. The plant at Mr. PEETERS' bears now more than 500 flower-buds.

CALIFORNIA.—The first botanists to collect in California are generally considered to have been THADDEUS, HÆNKE, and LUIS NEE, in 1791. Mr. WILLIS JEPSON, however, in *Erythea*, notes that LA PEROUSSE's expedition sailed from Brest in 1785, and anchored in Monterey Bay in 1786.

PLANT PORTRAITS.

BOMAREA FRONDEA, Mast., *Gard. Mag.*, September 2.
CALANTHE GIGAS, *Garden*, September 9.

CATLEYA BLESENSIS, C. pumila × Loddigesii, *Revue Horticole*, September 16.

KALANCHOE GRANDIFLORA, Rich, *Garten Flora*, September 1.

LYCASTE SCHOENBRUNNENSIS ×.—A hybrid between *L. gigantea* and *L. Skinnerii* raised at Schoenbrunn. It has the bulb of *L. gigantea* and the flowers of *L. Skinnerii*. *Wiener Illustrierte Garten Zeitung*, August.

TUPISTRA SQUALIDA, *Revue Horticole*, September 16.

VRIESIA HIEROGLYPHICA, E. Morren, *Garten Flora*, September 1, p. 521.

NOTES FROM KEW.

SOLANUM SEAFORTHIANUM.—This is one of the finest climbing plants for a warm house in cultivation, and yet it is seldom seen in gardens. It blooms for many months in the year, and is remarkably graceful, the plant growing rapidly, quickly climbing up a rafter. The leafage is abundant, and the light purple flowers are produced in clusters. It is in bloom in the Royal Gardens, Kew, and quite a contrast to the large-flowered *S. Wendlandii*, which is in bloom in the Water Lily-house. *S. Seaforthianum*, although so uncommon, is not a new plant, as many figures have been published of it, the last a coloured illustration in *The Garden*, December 10, 1892; whilst it is also figured in the *Botanical Magazine*, t. 5823, as *S. venustum*. It is a West Indian plant, and found plentifully in Trinidad, where it covers the bush growth as the common *Clematis* in English hedgerows.

HYPERICUM OBLONGIFOLIUM.

Few shrubs bloom through the autumn with the same persistency as the *Hypericums*, and *H. oblongifolium* is one of the most graceful and beautiful of the genus. A drawback is its tenderness, but when in a sheltered spot, and the soil is not heavy, the shrub attains many feet in height, studded with rich yellow flowers. A good specimen of it is very striking, and the flowers are produced with the utmost freedom. *H. oblongifolium* is an Himalayan species, and was first introduced by Messrs. J. Veitch & Sons in the year 1856, or about that time. The Khasya mountains are its chief habitat, and it grows at a high altitude, as much as 12,000 feet, but varying greatly in this particular. In the more southern gardens of England, this fine shrub could be well established. It succeeds very well at Kew, and into the winter even, bears many of the large finely-coloured flowers.

AMARYLLIS BELLADONNA.

If the present year has proved trying to hardy plants and many flowers of the garden, it has suited well those things that need warmth and sunshine to bring them to perfection. We have never seen *Amaryllis belladonna* more beautiful than this autumn, particularly at Kew, where the bulbs are planted in a narrow border against the Orchid-house. It was figured in the *Botanical Magazine* in 1864, and is a native of the Cape of Good Hope. The position in which the *Amaryllis* is at Kew is southerly, and no doubt much of the success of the bulbs is due to the fact that they derive benefit from the heat of the house. A border of this description is to be found in many gardens, and nothing could be better used 'to fill it than this *Amaryllis*, the best time to plant which is when the flowers have faded. A depth of 6 inches is sufficient, but almost a foot apart will be advisable. Give the border plenty of drainage, and let the soil for the bulbs be loam mixed with a fair proportion of leaf-mould and a little rotted manure. This preparation is essential to get the best results, and unless the position is warm and southerly, it is useless to attempt its culture, as the bulbs never succeed. The flowers of the *Amaryllis* vary considerably in colour, but the deeper-coloured forms are the more striking, producing a richer contrast with the deep chocolate scapes.

HEDYCHUM GARDNERIANUM.

A very fine specimen of this species is in bloom in the temperate-house at Kew, and it is not often grown in gardens, although one of the best of the genus. It was introduced from the East Indies in 1819, and blooms freely during the best part of the summer; the flowers are a kind of Apricot-yellow, borne in very large racemes, and richly fragrant. It is not a difficult plant to grow, and is comparatively hardy, at least it may be planted out in the garden for the summer months, where it makes a fine feature in summer-bedding arrangements. In the warmer and quite southern counties it might be trusted entirely in the open if the crowns are protected with cocoa-nut fibre refuse or similar protective material in the winter months. It blooms freely in the open, and the flowers will quite scent a small garden, *V*.

HOME CORRESPONDENCE.

MR. MANNING.—It has been known to most of us that Mr. Manning will shortly resign his position as general manager at Messrs. Jas. Veitch & Son's, Chelsea—he deserves a well-earned rest. Mr. Manning commenced in very early life at the Exeter Nurseries, and after the death of the grandfather of the respected head of the present firm, came to Chelsea with Mr. Dornay. It goes without saying that during the many years he has been in the firm, he has given keen insight into the character of every gardener who came into the firm for situations. It is also well-known that those who have been placed in positions have shown that they were worthy of such positions; on the other hand, to those who have felt the benefit of Mr. Veitch and Mr. Manning's experience in selection, I would suggest that on Mr. Manning's retirement, an illuminated address with names be presented to him, showing their appreciation of his character. If those who have passed under his hands would send but 6d. by postal note, the matter would be complete, and should a surplus arise, I know where Mr. Manning would wish it to go, viz., either to the "Gardeners' Orphan Fund," or to the "Gardeners' Benevolent." I shall be glad to accept the position of hon. sec. to any such fund. *Fred. Horsman, Colchester.*

MARKET PRICES.—I think "Grower" (see p. 341), in writing on this subject, has "hit the right nail on the head" in suggesting the development of local trade rather than sending so much to Covent Garden Market and other over-supplied centres. However, before fruit-growing can be made to pay, either locally or otherwise, he or anyone else must send fine fruit of the better varieties. Take Apples, for instance, no matter how large the quantity of fruit of inferior kinds is sent to the market, good

samples of approved varieties will sell in spite of an apparent glut and the general lowering of prices. During the present season, in my locality Apples were never more plentiful, and no difficulty is experienced in obtaining 5s. per bushel for cooking varieties such as Lord Grosvenor and Warner's King; while any quantity of the local varieties as Deux Ans have been sold for 1s. 6d. per bushel, and at times there has been a difficulty in realising that price. If fruit-growing is to be made to pay, it must be by cultivating superior varieties of any kind of fruit. In this part of the south of England at any rate, there has been a lack of dessert Apples; and what few Worcester Pearmain, Nannie, Quarrenden and Lady Sudeley there were, have been snapped up at once, at remunerative prices. So much in demand are the dessert varieties, that several orchards are already cleared of King of the Pippins, Cox's Orange, and Blenheim Orange Pippins to meet the demand. *A. B., Southampton.*

SPIRÆA ARUNCUS.—My experience of this herbaceous plant, figured so finely in the *Gardeners' Chronicle* last week, leads me to say that there are undoubtedly two forms of it in existence. One, a tall grower, and the other of much less height, and more "dumpy" in the inflorescence. The latter variety flowers with me fully one month earlier than the other. It is, I take it, not a question of cultivation, but purely a typical difference. As plant for a shrubbery, *Spiræa Aruncus* is well adapted for making a fine, showy effect. *E. M.*

A SECOND CROP OF FIGS IN THE PRESENT YEAR.—I have this day commenced to gather off a tree of the Marseilles Fig on an outside wall, with a south aspect, the second crop of fruit, which is ripe, and of good flavour, although small. Is this not most unusual? *C. Watkins, Glyndebourne, Lewes.*

MAIZE.—Mr. Morgan has misunderstood the intended meaning of my letter. I never had any difficulty in growing green corn on "plants from 3½ to 6 feet high." We grow it simply for decorative purposes in the flower gardens, and the effect of plants of a distinctly tropical habit 9 feet high is very different to that of the same plant only 3½ feet. It would have been a parallel case if I had stated that we could grow Peaches 9 oz. in weight, and Mr. Morgan had stated that I must have been "very unfortunate," as he could grow them 3½ to 6 oz. There is no better decorative plant than ordinary Maize, and its effect increases enormously with its size. It must also be remembered that the climate in Cheshire is very different to that in Essex, and it is probable that if Mr. Morgan had grown the Zea caraguaga this year he would have had it 12 feet high, with ripe cobs probably 1 lb. in weight each. *Thos. Fletcher, Grappenhall, Cheshire.*

THE LARCH DISEASE IN YORKSHIRE.—So far as I know, there have been no means taken by the Government to stop the spread of this pest. That it might be controlled to a certain extent, is a fact that is obvious to anyone who has studied the nature and progress of the pest. I refer to the disease known scientifically as *Peziza Willkommii*, and not to other maladies. In the district around Ledbergh, the disease has established itself, and has killed, and is now killing off wholesale the plantations of Larch. Oldish trees, above forty years, are affected on the branches only. The rough thick bark of old trees seem to be proof against the attack, i.e., on the main stems, but on the branches the pest shows itself where the bark is thinner, and in such places huge knots are to be seen, and the branches are dying or dead beyond the knot. The question naturally arises in an observer's mind:—"How did the disease gain a footing on such trees? Clearly not up the main stem, as these in most full-grown trees are sound. The wind, in my opinion, or, more likely, small birds, of the ox-eye or finch tribe, are the real cause of the spread of it. Fencing the margins of healthy woods with timber that had died from the effects of the canker is also another cause of its appearance in fresh localities. Rabbits and small burrowing animals might also spread the pest, as the fungus attacks the roots of the tree. The planting of fresh plantations of Larch in proximity to infested districts is a fertile source of propagating and perpetuating the disease, inasmuch as the agents already referred to spread the spores, and there is ample evidence that the disease flourishes on young trees of six to twelve years, when they are partly sheltered with grass and tall herbs, &c. Similar Government regulations as

those already in existence for preventing the spread of pleuro-pneumonia should be enforced by Act of Parliament. The soil of the district is pre-eminently adapted for the growth of Larch, and it is hopeless to attempt to grow it until all diseased trees are burnt, or treated with tar, creosote, sulphate of copper, when used for fences and sundry purposes after being felled. The ground where diseased trees grew should be cropped with other kinds of trees for one rotation at least, as although the diseased trees were grubbed out, it would be impossible to take out the smallest particle of root, the smallest of which might contaminate a whole plantation. If all affected trees were cut, the planting of Larch on a fresh site would be quite safe, as the agents referred to would not be able to spread the pest. The disease is widely spread all over the country, and especially so along the side of the London and North-Western. Between the district I refer to and Carlisle, many plantations can be seen with the Larch in a dying condition, which is due, presumably to the presence of *Peziza Willkommii*, but as I did not examine the plantations personally, the latter may be due to the inimical nature of the soil, which is often the cause of failure in Larch woods. *R. W. Milne.*

GALANTHUS BYZANTINUS.—I find that the honour of introducing *G. byzantinum* to English gardens belongs to Mr. W. C. Mountain, of Constantinople. This new species was found on the Asiatic side of the Marmora, and was supposed by Mr. Mountain to be *G. Elwesii*, and was so labelled by him. Another Snowdrop was collected on the European side of the Marmora, and this Mr. Mountain believed to be *G. Redoutei* or *G. latifolius*. It certainly is not *G. latifolius*. Whether it is *G. Redoutei* or not the next spring must decide. Most collected bulbs flower very weakly the first season, and it is consequently very difficult to decide what their real characters are before they have flowered a second time in our gardens. *James Allen, Park House, Shepton Mallet.*

KEW NOTES.—A friend of ours has drawn our attention to a note which appeared in June 3, p. 658, of your valuable periodical under the heading of "Kew Notes." Unfortunately, this number never reached us till a few days ago, so that we can only now reply to "W. W.," hoping that you will kindly allow a short space to the following remarks. *Alocasia Dussii* was collected for us in the island of Martinique by Mr. Duss, a missionary, who at the same time is a passionate lover of flowers and a botanist. Grateful as we are to him, we provisionally named the plant after him from our standpoint as nurserymen, but also from a botanical point of view we doubt that it has anything to do with *A. antiquorum*. This latter has much larger, erect, green leaves, broader leaf-stalks, forming by-and-by stems above the ground of about 3 feet, is such a common plant in all the European gardens, that nobody can possibly mistake it. *A. Dussii* has smaller leaves, which do not stand upright as those of *A. antiquorum*, but are pendent or horizontal as those of *A. esculenta*; they are of olive colour, not bright green, with brown-red veins or ribs, the petioles dark brown. The plant pushes subterranean stoles often 3 feet long; the flower resembles that of *A. antiquorum*, but this fact alone is certainly not sufficient to prevent us as nurserymen considering it different, or from giving to it another name. By doing so, we have not departed in the least from the general practice; if so, then any raiser or importer of a new variety of Rose or other plant would not be allowed to give a special name to one differing in some way or other from the sorts already known. But how many have been introduced and offered in such a way, although they may not be recognised by botanists! *Crinum yemenense*, described by the botanist Deflers in his *Voyage au Yémen*, p. 209, was imported by us direct from its original locality. Mr. Deflers, owing to his frequent trips in Arabia, knows the flora of that country well, and upon our inquiry if he ever met with *Crinum latifolium* in Arabia, he strictly denies it. Moreover, the well-known botanist, Professor Schweinfurth, who also travelled in Arabia, and who saw the *Crinum yemenense* in flower in our grounds, recognised it as such, stating that it differs from *C. latifolium*, which Mr. Baker also admits. We grow *C. latifolium* and *C. yemenense* side by side, and from a nurseryman's standpoint it may at once be perceived that the latter greatly differs from *C. latifolium*. Grown under the same conditions, *C. yemenense* has a much larger bulb, is of more luxuriant

growth, with larger, longer, and undulate leaves of a light green colour, while those of *C. latifolium* are dark green. It is distinguished further by its more vigorous flower-stalks, the umbels carrying a larger number of flowers of a long neck, while the latter are of a brilliant white; and further, through the fact that it loses all its leaves in winter, while *C. latifolium* holds them [?]. These considerations entitle us fully to offer this variety as the one which has been described by Mr. Deflers, and to offer it also in future as *C. yemenense*. We grow almost all the known varieties of *Crinum*, and only a few rival it in beauty, but certainly not *C. latifolium*. We grow nearly a million [!] of all sorts of *Crinum*. On the other hand, "W. W." is perfectly right as to *Amorphophallus giganteus*, and we regret very much having sent to Kew *Sauromatum guttatum* instead of the *Amorphophallus*. But whoever takes the trouble to look over our catalogue of bulbs—and who knows what pains we take in having our collection rightly named—will at once know that the above fact must be attributed exclusively to some blunder. Those Aroids that require culture during summer are all grown in a special department, by which it may be explained how such a mistake happened. No one can mistake *Amorphophallus giganteus* for *Sauromatum guttatum* had he but a limited knowledge of these plants. *Dammann & Co.* [Our correspondents would do well to submit their plants to competent botanical authority for naming, or if they wish to name them themselves, then to use vernacular names or such names as are not likely to mislead. *Colocasia antiquorum*, like all long-cultivated plants, runs into many forms which are not worth specific names, but which horticulturally, it may be, are deserving recognition. For such forms popular names should be used. We are always ready to help nurserymen in the determination and publication of "new plants." Ed.]

GROWTH OF LARCH AND OTHER TREES.—In spite of the abnormally dry season, it is astounding what an extraordinary length of leader some of the Larch trees have made; and, on the contrary, how small has been the growth of others. Some Larch which were planted in an open field on this estate (South Hants) during the autumn of 1889, in good soil, with a retentive subsoil, have made unusually long leading shoots, one in particular measured 3 feet 11 inches, and many of these trees have made leaders of 3 feet in length. In the home nursery, 2 year seedling Larch, planted in April, 1892, have made leaders 2 feet 6 inches long; the side-shoots are also of great length. Scotch, Austrian, and Corsican Pines have likewise grown well, but the Spruce Firs have made but 6 inches of leader instead of 18 inches and 2 feet as last year. In the latter case, I think it is owing to the extremely dry weather experienced last April, which checked the pushing of the shoots in May. *E. M.*

VERBASCUM CHAIXI.—To what an abnormal height the above species has grown this year. A strong plant growing in heavy soil among some *Rhododendrons* reached 8 feet in height, and lasted for a very long time in bloom, and showed well above the heads of the *Rhododendrons*, whose foliage formed a good setting for the flowers. *E. M.*

STOCK AND SCION.—I send per parcel-post a section of Peach Early Louise (Rivers) that went wrong this season; it has shown an enlargement since the first year it was planted. On seeing some roots forming, I placed some moss and soil to entice them from the Peach, but it looked queer last autumn. I have had Alexander and Princess of Wales go the same, and they have been on *Muscel* stocks; if I remember rightly, this one is on a *Damask* stock. I have no microscope, but it appears as if there had been no true union; and though it appears that the stock died first, yet suckers were coming up last year close to stem. The first symptoms of anything being wrong with previous ones has been the stock breaking out just below union. *R. F.* [The section shows that there was a great difference between the rate of growth of the scion and of the stock, so that whatever the stock may have been, it was one quite unsuited to the scion. The scion has endeavoured to shift for itself by the formation of roots. Ed.]

DWARF FUCHSIAS AS BEDDERS.—Possibly the variety *Dunrobin* Bedder may be a seedling from the *Riccanton*, and if Mr. Melville says it is, we have no cause or inclination to dispute its origin; but I

should have been more inclined to suspect its being either a seedling, or a fugitive plant of the old and very dwarf *Fuchsia globosa*, which I can very well remember being in existence fifty years ago. It was some time during the years 1846 or 1848 that the white *Fuchsia Venus victrix* first came under my notice. My memory is strengthened from the fact that with a horticultural crony of my own age I exchanged a cutting of *globosa* for one of his *Venus victrix*, and of the transaction I do not know which of us, he or I, was the prouder. This took place in the then small town of Dunoon, but now, with its late purchase of the castle grounds, a town on the Clyde—"doon the watter," as the Glasgow bodies say—of considerable importance. Some years after coming to Coombe, some one brought to the gardens from one of the neighbouring villages, a plant of a dwarf *Fuchsia*, which I at once recognised as the early acquaintance of my boyhood. Between the years 1870 and 1880 or thereabouts, I, like many others, was seriously affected with the bedding-out craze, and whilst looking about for material to use, my eye fell upon the dwarf *Fuchsia globosa*, and to this end it was taken in hand, and propagated in great numbers. It was used successfully in many ways, which I need not here describe. Suffice it only to say that its introduction amongst our sundry devices succeeded in gaining the admiration of Mr. Spinks, himself a master hand at bedding. Mr. Spinks was then manager of the Aston Lower Grounds, which he for a number of years so cleverly superintended, and from whence he set the whole midland counties ablaze with his system of bedding. I still retain a breed of the old *globosa* by me, ready for any bedding-out emergency which unforeseen circumstances may bring about, but in the meantime this system has been abandoned at Coombe. Depression in the farming interest compelled us long ago to turf down all our out-door floral extravagances, and I am not certain if the green turf, with which it was replaced, does not look quite as well; yet I confess that I take any opportunity to look and dwell admiringly on a piece of carpet-bedding well carried out. *Fuchsia Riccarton*, *globosa*, and the old *coccinea* variety, are here cut down to the ground every winter. To keep them alive at the root we are obliged to cover them up with dry leaves. But in the milder climate of the west of Scotland, and under favourable circumstances, the *Riccanton* will grow from 15 to 20 feet high. On the east shore of Lochortriven, I remember, when a boy, seeing a carriage-drive, both sides of which were lined with the *Riccanton*, which, to the best of my recollection, must have been 15 or 20 feet high. I will qualify this statement with a doubt whether it was the *Riccanton*, or whether another variety known as *coccinea*. As I had never before seen *Riccanton* grow so high, and the spinning form it took, made me suspect it to be the former variety. The carriage-drive was cut through a natural growth of Hazel, Birch, Oak, &c., which gives character to the scenery all along the coast of the Western Highlands. These gave shelter to the *Fuchsias* from the boisterous west winds off the loch. The steep hill-side was the protection from the east, and the mild winter climate of those regions was an extra advantage. But as a Yankee would say, "I guess" there is a wide difference between the winter climate of *Dunrobin* and that of the Royal Horticultural Society's gardens at Chiswick. Your correspondent "V.," p. 156, will, I am sure, pardon me for being bold enough to assert that however valuable an acquisition the *Dunrobin* Bedder may be, it is not the first dwarf *Fuchsia* by many a year, that has been used as such, and that in my memory at least, dwarf *Fuchsias* as bedders, effectively introduced, have not yet been relegated to the realms of absolute oblivion. The note of "V.," together with these remarks from me, will, I hope, help to popularise the use of dwarf *Fuchsias* as bedders. If anyone will only give them a fair trial I feel sure they will be inclined not only to repeat, but to even extend the experiment. *W. Miller, Coombe Abbey.*

JUDGES AND SCHEDULES.—So long as schedules of prizes are drawn up with the looseness which pervades that of the Cardiff Society—a copy of which lies before me—much must be left to the interpretation of the judges. And I am disposed to think, in reference to the particular case mentioned, they took a just and reasonable view of the wording of the class, though it might not have been a strictly technical one. I am informed, on the best authority, that the committee of the Cardiff Society, with one or two obvious exceptions, cordially support the action of the judges at the late show, which was upon the lines which have always been followed at

their shows. To illustrate how loosely the Cardiff schedule was drawn up, class 75 is for "Dessert Fruits, six dishes, distinct kinds." Exception was taken to the award of the judges in this class on the ground they had accepted White and Black Grapes as distinct kinds. But the judges did wisely—as I have no doubt their colleagues in the cut-flower classes did—in putting themselves in the places of the framers of the schedule, and endeavouring to ascertain what was in their minds. Thus, class 71



FIG. 59.—PINE-BEETLE (HYLURGUS PINIPERDA).
Much magnified, and Pine shoots bored by the beetle.

reads, "Melon, best, any kind;" class 74, "Melon, the two handsomest of any kind;" class 76, "Apples, dessert, collection of six dishes, distinct kinds;" and so on. It was obvious that the compilers of the schedule employed the term "kinds" as synonymous with varieties; and in using the term "exotic," they having provided classes for hardy flowers, including Dahlias, Zinnias, &c., put in one for flowers of plants grown under glass, and to distinguish them from hardy flowers, employed the term "exotic," in the sense in which it is frequently employed in schedules of prizes. It might be appropriate at a botanical exhibition to use the term exotic in its strictly technical sense, but in all schedules of prizes, excepting special cases, the term exotic is used and understood



FIG. 60.—SPRUCE-GALL (CHERMES ABIETIS).

to denote plants grown in warmth, and that is why it is, as recently at Shrewsbury, where we may suppose the ablest of judges are engaged. We are so constantly seeing *Adiantum cuneatum* var. *gracillimum* exhibited as an "exotic" Fern. I cannot conceive that the committee of the Cardiff Society, whose aim it must surely be to secure the most attractive exhibition possible, to be desirous of excluding from a certain class any fine home-raised plant of beauty. They would be earnest in repelling so unpatriotic a suggestion. *Western*. [The Fern in question is certainly not wild in Britain, but of exotic origin. Ed.]

FORESTRY.

INSECTS INJURIOUS TO FOREST TREES.

SURELY these are greatly on the increase in this country. During the past fortnight I have visited large extents of woodland in at least three of the south-midland counties, Northamptonshire, Buckinghamshire, and Bedfordshire, and in every instance the same question has been asked me, What remedy can you suggest to lessen the depredations of these injurious insects? No coniferous tree would seem to escape, each one having some particular insect or fungoid pest that renders whole woods unfitted for any economic or ornamental purpose.

The Scotch Pine suffers severely from the ravages of that dread insect, the Pine-beetle, *Hylurgus piniperda*, see fig. 59. The Spruce is being killed out or rendered very unsightly from the attacks of the Pine-apple-gall or Spruce-gall (*Chermes abietis*), see fig. 60; while the Larch is being killed wholesale in many woods by the Larch-canker, and which is due to the minute fungus, *Peziza Wilkommii*, see fig. 61. But this is not all, for the deadly insect *Liparis monacha* has likewise made its appearance; and others of quite as destructive propensities have, during the past unusually warm and dry summer, been detected in no small quantities. *Tomicus typographus*, *Pissodes Pini*, and *P. rotatus* have also been recognised, and several others are under examination.

The Pine-beetle is present in unusual quantities—indeed, to such an extent do the ravages of this insect extend, that acres of young Scotch Fir are either completely killed out, or crippled to such an extent that their future value is hardly worthy of consideration. Young trees, of course, suffer most; but after the age of, say, twenty to twenty-five years, the attacks are less persistent, probably owing to the shorter and more matured growths of the trees.

The special form of injury done to Pines by this beetle consists in its boring into the young shoots for feeding purposes, and which is effected by working a lateral hole in the twig, usually at about 6 inches from the tip, and boring upwards for an inch or two through the pith, and which it only quits at the beginning of winter for purposes of hibernation. This tunneling so weakens the shoot, that with the first storm it breaks readily over, either at the point where an entry or exit was effected, and occasionally where the beetle is present in quantity, the ground becomes strewn with the fallen shoots, or, what looks worse still, they hang from the branch tips as if these had been riddled with shot. I feel confident that in Bedfordshire, at least, the great increase of this particular beetle can be attributed solely either to neglect or a want of knowledge of the life-history of the insect. Few persons seem to be aware that this beetle does not, as a rule, hibernate in standing trees, but chooses fallen trunks or branches, dead or dying trees or stumps, in which to deposit its eggs; and this of itself should make those in charge of woods and plantations be very careful that all branches or prunings—in fact, every kind of felled wood—are removed from the ground as soon after being cut down as possible. Prevention in this case is far better than an after cure, for once the insect gains a footing, the most stringent measures are required to place a check upon their depredations. A very common practice, too, is to follow a crop of Scotch Fir with that of the same kind; but a careful examination of such woods will soon betray the fallacy of this course of forest management. Apart altogether from the fact that recropping with the same species of tree is inimical to the growth of the plantation, the stumps of the old Firs that are left in the ground serve as the best possible breeding-place for the Pine-beetle, and the newly-planted trees the best feeding-ground.

Wherever the Scotch, Austrian, and Corsican Pines are grown in quantity, but particularly when old and young breadths of the trees occur in close proximity, the greatest care is necessary to prevent

the inroads of the Pine-beetle, and this can only be done by a thoroughly well worked-out system of forest management.

Cleanliness and neatness, by having no dead and dying wood and lopped-off branches lying about in

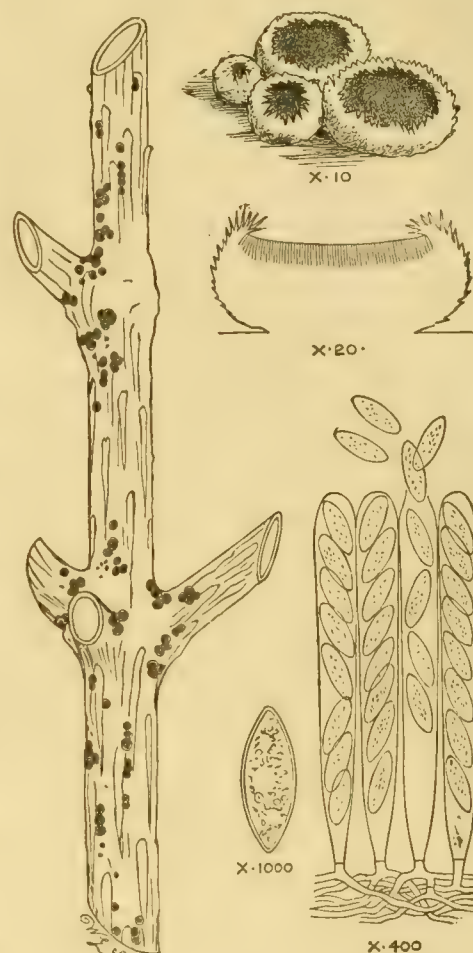


FIG. 61.—LARCH FUNGUS (PEZIZA WILKOMMII).

the woods, and by attending to the general health of the trees, will alone assist in keeping this insect pest at bay. Once it gets a footing in large breadths of timber, extermination, be it only partial, is a task of the greatest difficulty, and attended by heavy ex-



FIG. 62.—PINE SAW-FLY (LOPHYRUS PINI).

penses; indeed, the only sure way in such a case, is the drastic measure of cutting down the infected trees, and burning them on the ground. This, too, is a measure requiring the greatest care, and a deep in-

sight into the life history of the insect. To cut down and burn the trees in winter is lost labour, in so far as concerns the destruction of the insect, for the beetle at the beginning of winter quits the shoots, and hibernates in moss, &c., or low down at the base of the trunk. By collecting old trees and branches that are lying on the ground not later than the beginning of June, and carting these away, or carefully burning them in the wood, great good may be brought about, the number of beetles present being greatly diminished by such a course of procedure. The felling infested trees that have been ringed and left as traps in February, when the beetles are breeding in the bark, is another excellent method of lessening their numbers, but such work requires to be very carefully gone about.

In connection with the Pine-beetle it should be remembered (1) that it never breeds in the shoots where it feeds, (2) that its eggs are laid in dead and dying logs, on or near the ground, early in April, and (3) that the larvæ appear as perfect beetles in June and July.

The Spruce Gall aphid (*Chermes abietis*) is very abundant all over England, and this season in particular its depredations have been increased to an alarming extent. When abundant, the general health of the trees is seriously affected, while in every case crippling and distorting of the branches is brought about by this much-dreaded insect. Having passed the winter in crevices of the bark, the *Chermes* appear in the spring as ochre-coloured wingless insects, and attach themselves to the young and tender leaves of the Spruce. A mass of eggs is laid on the tender shoot, usually where two twigs meet, the larvæ of which, when hatched, tap the shoot with their beaks, this causing the swelling known as the Spruce Gall, and which resembles a small Fir cone. In August the winged insects leave the "cones." To cope with this insect is a by no means easy task, although in the case of single specimens, hand picking and destroying the galls in June or July will be found productive of a great amount of good.

Probably the worst enemy to young Conifers, and one that unfortunately is by no means uncommon, is the Pine-weevil (*Curculio (Hylobius) abietis*). The beetle attacks nearly all the Pine tribe, as well as the Larch, Spruce, and at least two species of Cypress, the depredations consisting in the eating of the bark of the shoots and tender twigs. To such an extent is this gnawing of the bark carried on, that frequently whole branches are rendered barkless in a few days, an unusual flow of resin being the result. Usually only young Fir trees are attacked, up to, say, the age of ten years, and nursery stock often suffer to a great extent.

By keeping the woods free of dead and dying twigs and logs, no breeding-places will be found, and so the extermination of this, like most other beetles, is a matter of no great difficulty. Another occupant of our woods and forests is the Pine saw-fly (*Lophyrus Pini*), see fig. 62, its damages being extended to the partial devouring of the needles of the infested tree.

The Larch-miner (*Coleophora laricella*) feeds on the centre of the Larch needles, which it mines into, causing these to turn yellow and drop off in great quantity. This may not kill the tree, but going on for year after year the attacked specimens rarely have a healthy appearance. It is very plentiful in England.

Another very common occurrence in our Pine woodlands is to see the shoots deformed and twisted, and the terminal buds stunted and falling off, an evil that is due to the attacks of the Pine-shoot moth (*Retinia buoliana*). The larvæ live in the trees through the winter.

There are many other insects that cause considerable damage to our coniferous trees, but the above may be considered as the principal or worst forms with which the forester has to cope. The "Larch disease," or "Larch canker," as it is commonly known by, is, unfortunately, very much on the increase in this country; indeed, during my experience I have never seen such wide-spread devastation as is to be met with this season. It is due to a minute fungus known as *Peziza Wilkommii*, and which

spreads wherever a footing can be got, with terrible rapidity.

The main point to attend to in coping with this malady is to preserve the Larch plantations in as healthy a state as possible, and to do this, the following rules should be rigidly observed, remembering that the fungus can only find a footing where the bark of the tree has met with injury in one way or another—

1. Plant the tree only on suitable soils.
2. By careful management, keep the trees in as healthy a condition as possible.
3. Choose healthy, strong stock to start from; and—
4. In collecting Larch seed for propagating purposes, select only such as has been matured by a winter's frost, and from healthy trees in the prime of life. (No. 4 should be rigidly observed, for owing to neglect of these precautions deterioration of the Larch has long been going on.)

As showing the wide-spread damage that has been inflicted on coniferous trees of late, I might specially refer to a case in South Wales, where thousands of Larch trees have been destroyed by the above fungus; to numerous cases in England, where the Pine-beetle is causing widespread devastation in the Scotch Fir woods; and to serious damage in Ireland by several of the other insects named in this paper.

Abroad many striking examples might be mentioned, such as in East Prussia, Poland, and Russia, where in the fifteen years, from 1853—68, the Spruce was killed over an area of 7,000 square German miles; and two years ago in Bavaria, where damage to the trees amounted to fully £40,000. In both instances that destructive insect, of which we are by no means free in this country, *Liparis monacha*, was entirely to blame.

The great importance of the attack has caused owners of woodlands in this country to look better to the general health and cleanliness of their woods and plantations, than has ever before been the case; and the numbers of specimens of insects that have been sent for inspection and naming, also proves that a great additional interest is being awakened in the matter.

In conclusion, it may be stated that, as a rule, so as to keep these insect pests in check, no loppings or windfalls should be allowed to lie about in the woodlands, such only affording the best of all breeding-grounds, and consequent spread of the evil. *A. D. Webster.*

STRAWBERRY-BEDS.

In many parts the crops of Strawberries were very abundant, and in deep moderately heavy soils the size of the fruits as well as the quality were very good; but on those that are light or shallow, the drought caused a short season of bearing and small fruits, and the plants were so crippled that in our garden the prospects for next year are not bright—many plants will, I fear, fail to flower. Young plants of Noble and Vicomtesse Héricart du Thury growing on deeply worked land, have withstood the drought fairly well, and the produce was good, but older plants quickly gave out, and the fruit was only about half the usual size. It is in large areas, in market gardens and fields, that the drought is likely to have caused the most harm, as in these the plants have to take their chance, watering them, being, as a rule, beyond the resources of the grower.

Supposing that, in the garden the beds have been cleared of weeds, and the plants of runners and some of the old leaves, the hard soil should be lightly pricked over with a fork, and a top-dressing with fresh soil, charred earth, or garden refuse, old hot-bed and the like materials should be spread over the roots, first heavily watering the beds, and unless this be done, the dressing will have little good effect.

Where beds were mulched with good manure and repeatedly watered, this alone will show a marked effect in the vigour of the plants. Young plants seem better able to resist drought than those that are several years old, and it is always advisable to plant some new beds yearly, and destroy the same quantity of old ones. Young plants in pots may

still be planted out-of-doors, twice as close together in the rows as they will stand after fruiting once, the superfluous plants being grubbed out afterwards. If planted somewhat closely together at the foot of a south wall, some nice fruits may be obtained fully a fortnight before those in the open quarters. *H. Markham, Mereworth Castle.*

NURSERY NOTES.

BROXBOURNE NURSERIES.

SOME might think it unfair to visit a nursery at this time of year, especially after such a season as we have had. On the other hand, an excellent opportunity is afforded of seeing what has done well, and, in the case of a general nursery like that of Messrs. Paul & Son, go when he will, the visitor is certain to find something to interest him. Just now, the famous Atkins collection of *Cyclamens* is in full bloom. Neither heat, nor drought, nor the shade of trees, nor the exactions of Elm roots, has had any effect on them. There they are, bespangling the ground, like so many gems, in a setting of foliage as beautiful as the flowers themselves. At Kew also, the *Cyclamens* show well up amidst the Ferns, among which they are planted. Judging from the situations in which they are found in Switzerland and Germany, they seem to like shade and a deep layer of leaf-mould. The flowers vary in colour from violet-pink and rose to pure white. We cannot attempt to describe them, but we recommend those who are interested to go and see for themselves. They will find in addition much to attract their attention among the Saxifrages and Sedums, some of which have been severely tried this summer, they will see a bed of *Senecio pulcher* which has enjoyed the heat, its thick fleshy leaves enabling it to withstand drought, albeit rendering it a prey to an Orange fungus, *Coleosporium*—one of those many-homed individuals which puts on a fresh dress in each home it occupies—"heteroicous" the learned call it. *Aster acris* and *Aster Amellus*, common plants, are nevertheless gorgeous to behold. *A. alpinus albus*, by the way, is, we are told, more robust than the common form. A bed of *Rudbeckia purpurea* reminded us of a once well-known nursery from which this and many another herbaceous perennial was destroyed some thirty years ago as cumbering the ground, whilst now the old friends are coming back. *Stokesia cyanea* is another noticeable plant, like a blue China Aster, which has thriven in the heat. *Morina rosea* is still in beauty. *Clematis Davidiana* is at first sight as unlike a *Clematis* as one can well imagine. Botanists see strange resemblances, but this time they are clearly absolutely right, as any one who pulls the flowers to pieces may see for himself.

The rock garden has of course always something of interest on it. *Omphalodes Luciliae* is one of its distinguished inhabitants, and of a quite different character are the *Polygonums*. *P. sachalinense*, with its broad leaves, has been lately recommended as a forage plant, a circumstance that induced us to make an experiment upon Mr. Paul's horse. The sagacious animal had no prejudice against experiments, and munched the leaves with relish, and we are happy to add, with impunity. *P. cuspidatum* is nearly allied, but has thicker and more cordate leaves. *P. molle* has a similar tall habit and loose spikes of white flowers, but the leaves are narrowly lanceolate. *P. compactum*, another of the same breed, is to be commended for decorative purposes, whilst anything more brilliant than the spikes of the relatively lowly *Polygonum Brunonis* can scarcely be imagined. We began this note with the intent of calling attention to the *Cyclamens*, but we have been led on to speak of other things. As we shall have more to say later on about the Cannas, we may as well stay our hands now.

MESSRS. T. F. RIVERS AND SONS, SAWBRIDGEWORTH.

Late as the middle of September in this early year, there is much remaining out on trees in the quarters, and on trees under glass, and trees in pots in the

open air, to occupy a long day in their inspection. As a tramp through an extensive place in the search for everyday things is neither profitable or desirable, and results in no useful purpose to our readers, we avoided it. A glance at the fruiting canes of Vines growing in serried ranks in one or two houses, showed how brown, strong, and well-ripened they are. We do not ever remember seeing Vines in finer form. The Figs for fruiting in pots are remarkably good, and bristle with embryo fruits. Such half-tropical subjects as Figs and Vines, and Peaches and Apricots, have enjoyed our unusually warm summer immensely, and they are likely, if next year be favourable, to render a good account of themselves.

The workmen were busily engaged in re-potting some 500 of the Early Rivers Nectarine, which is a variety that leads all others by three weeks in regard to early fruiting, a fact that market-men will be quick to note, as there is "money in it." The trees were almost bare of leaves, and the shoots, every one ripe and red to the tips, in fact, capital twiggy pyramidal trees certain to bear well. We believe 30s. per dozen was the price received for fruit of this variety in the current year, which is not bad returns to the "poor" grower, but the fruit must be good. Lord Napier must now retire from the front rank as an early, it never did take first place for flavour.

Gardeners do not like Peaches that have yellow-flesh, such as the Salway, and they have just cause for this, as most of these late yellow-fleshed Peaches have poor flavour, and their flesh is dry and stringy; not so Lady Palmerston, ripe fruits of which were observed on trained trees in a glass-house; it is large, late, and excellent, and all that is yellow-coloured about it is the ground colour of the skin, and this is largely suffused and streaked with crimson.

A Plum for which there is a great demand is Monarch, and it was observed growing in pots and in the open quarters in large numbers; it is a good dark blue October variety, the bloom on the fruit very enduring. Another fine Plum, at present under number 97, resembles Sultan, i.e., shortish oval in shape, and of a reddish-purple colour, is a large kitchen variety now coming into use.

The plantation of large bushes of Apples, the ideal farmer's and cottagers' form of tree, is full of fruit, and splendid crops were noted of Lord Burghley, one of the best of late dessert Apples; a bush of Baxter's Pearmain, another excellent Apple, was carrying about 6 bushels of fruit; Scarlet Golden Pippin, a highly ornamental fruit of good quality, is a very prolific bearer, the bushes being literally coloured with the reddish-orange fruits. Pitmaston Pine is another highly ornamental fruit that can be eaten from the tree, and for some considerable length of time; the habit is slender and erect, making capital columnar or vase-shaped bushes without much guidance. Wagener is a showy, free-bearing, red-skinned culinary Apple, to be highly recommended; the fruit keeps till April. Another long keeper is Lady Henniker, keeping till March; it is large and showy. Some excellent specimens were noted in the fruit-room of the Melon Apple, which is in season from December to March; the fruits would average 3½ inches in diameter. Buckingham is a large green kitchen Apple, said to be an excellent keeper; Peck's Pleasant might be taken for Sturmer Pippin, and lasts in good condition as long as that good old variety. These last two varieties are very free, and seldom fail to set a good crop out-of-doors.

For a highly ornamental variety of Apple, of extraordinary cropping capacity, bright crimson all over, and nice bushy habit, there is nothing to excel Bijou; it is prolific in the young state, and is in season from December to April. Splendid specimens of King of Tomkin's County Apple were observed on some pot-trees; it is a large dessert variety, said to be of very fair quality. If that be so, it is an advance on the samples of it which reach this country from Nova Scotia and U.S.A. Apple, Rivers' Codlin, a seedling of American Mother, cooks to a jelly, and is in season from September to

November. Early Rivers is an improvement on Lord Suffield, in that the tree does not canker, and it has a better constitution; it will probably drive Suffield out of cultivation.

The Pears in pots in the open still carried many fruits, which were of large size. These trees although grown in pots and styled Orchard House trees, benefit but little from glass protection, being placed under it merely at the flowering season, and towards the end of the autumn should the weather be wet and cold; this year there is no such necessity.

Amongst fine specimens of Pears, mention should be made of Conference, a variety that made its *début* last year. The variety has naturally a regular columnar habit, but it will make an excellent bush by stopping the leader. Magnate is another fine-looking Sawbridgeworthian production. The Parrot is a fruit not unlike Gansel's Bergamotte when ripened on the tree, and it is showy, as well as of good flavour—season, October. Bon Chrétien L'Ormier is a Pear that is good at the New Year. Fertility and several other of Mr. Rivers' successes in Pear raising were noted. Mr. Rivers is at present, we believe, the only man engaged in this country, in a systematic manner, on the fascinating work of raising varieties of fruit better in some particular point or points than existing ones. He has, as we know, lengthened our Plum season by ten or twelve weeks, the Peach and Nectarine season by half as much; he has added new varieties of dessert Pears, both early and late, which every one concedes are desirable acquisitions, and he is still busy with these matters.

TUBEROUS-ROOTED BEGONIAS AT YEovil.

It is a far cry from London to this pretty Somersetshire town, which lies embosomed amidst hills that during the long dry summer seem never to have lost their verdant greenness, and which when I saw them recently were covered with luxuriant herbage, or capital crops. But because a comparatively small and somewhat remote town, Yeovil can at least boast that within its bounds may have been seen during several past summers one of the best and probably largest collection of tuberous Begonias to be found outside the London area, and whilst being a nurseryman in general, Mr. B. R. Davis, is a specialist in Begonias. He has studied them closely, has made them so far his own, and whilst his collection is perhaps smaller than are those of Forest Hill, Swanley, or Bexley Heath, he has similarly high average of quality, whether of doubles or singles, and both in the west and throughout the midlands for his strain. Even at the moment of my visit, I find that instead of greeting him in his own house, he is away in America, where there is growing up a large demand for high-class Begonias, and in the interests of our growers long may it continue and increase. The Begonia Nursery is situate beside a main road, which leads from the town to the west; and at all times, but especially on Sundays, this thoroughfare is a favourite walk for the townspeople. Close beside the road is a large show-house full of plants that have for several months been profusely blooming. It presents, perhaps, the best gratuitous exhibition of the popular Begonia under glass to be seen anywhere, for all passers-by can stop here and have their fill of floral beauty; but in the open every available space is full of seedlings or selected plants in beds, and masses of these also adjoin the road, so that it is no wonder if any visitor to the town is taken to see the nursery, or that the passer-by finds attention arrested, and the sight eagerly and delightfully scanned. Like an ordinary looker-on, on the afternoon when I called, I mixed with a body of these rural or provincial critics, and whilst it was evident that they were full of deep admiration for the Begonias, some of their criticisms were of a very amusing order. To describe minutely the various sorts, whether single or double, would be needless. Anyone who has seen the grand collections of these flowers staged at the Temple Gardens in May, or at other of the Metropolitan shows during the summer, know what high quality is, and they could see at Yeovil just the same fine form, wonderful doubleness,

size of bloom, diversity of colouring, and excellence of habit. Begonias constitute no close preserve to anyone, and they are as likely to be fine in the country as in the town. The visitor sees in or out doors, where the seedlings are growing and blooming by tens of thousands, the beautiful whites, pinks, primroses, yellows, apricots, bronzes, reds, scarlets, crimsons, &c.; and amongst the doubles of diverse markings some have such defined and beautiful edgings that they are difficult to dissociate from yellow ground Picotees. In this direction specially there seems to be a chance of getting a new and beautiful strain. After all, to me, there were large quantities of varieties in masses that had particular charm, because they presented such beautiful material for bedding, and whilst we may in some cases admire fully the huge double and single flowers under glass, it certainly is the case that these are not bedders *par excellence*, for they are very susceptible to injury from rough winds and rains. The best bedders are those which, whether single or double, bloom freely, indeed profusely, have rather small than large blooms, and show these in the most attractive way. Of these, Robin Adair, double, crimson, very dwarf and free; Dandy, double, dark red, 6 to 7 inches in height, a great beauty; Postboy, 10 to 12 inches high, rich salmon-carmine, a lovely form in the mass; Colonel Lansedat, 8 inches, bold, erect, golden-yellow, very effective; Clemence Denisart, 14 inches, deep rose, and wonderfully free; Cactus, 7 to 8 inches high, reddish-cerise, beautiful for edgings and baskets; Altheaflora, 9 inches, rosy-magenta; Mauvette, reddish-magenta, giving a glorious mass of colour; and Lady Gertrude, a charming cerise-red, are some that need only to be seen in the bulk as I saw them at Yeovil to make them exceedingly popular for bedding purposes. Mr. Davis has devoted special attention to this section, and he is wise, for the day of the Begonia as a bedding plant is really yet to come. Besides these referred to, there are many more recently-raised varieties that are yet seen only in very limited numbers; but in another year or two, when put out in bulk, will be found to exhibit high merit. Whilst a few of the sorts named are of continental origin, the bulk are home-raised. The dwarfier forms are especially nice when employed as edgings to beds that have raised sides of a few inches high, margined with Sedums, such a variety as Clemence Denisart, giving the greatest body of colour, perhaps, ever seen on any form of similar height—14 inches; and it makes a fine centre mass. There is nothing fresh to be said now about raising Begonias from seed. The story has so often been told; but it is most evident here as elsewhere that fully 80 to 90 per cent. of most colours come pretty true to character from seed. Easy as it is to raise Begonias in this way, it is no matter for surprise that private growers prefer to purchase one-year-old selected tubers, as in that way they at once ensure having the best, and a fine show the same season. A. D.

KEYNES, WILLIAMS & Co., SALISBURY.

A spare hour in Salisbury recently enabled me to look in upon this old-established nursery, where Mr. Williams and Mr. Wyatt strive so well to maintain an ancient reputation. Whilst just now, as for so many years, Dahlias constitute the great feature, there are some other things meriting notice, especially pot Vines, of which there are great quantities of all the best sorts, and for which the firm has secured a high reputation. These now in houses will soon be put outside to harden-off and to winter. They stand chiefly in double rows, the rods being run up close to the glass, about 9 inches apart. All are in 10-inch pots, which it is easy to see are full of roots. They have not been unduly fed, a great mistake in pot Vines, as whilst large but pithy stems result, the roots are seldom good, and too often almost devoid of fibre. Great heat and high feeding are serious evils in this form of Vine culture. The rods, though not stout, are very hard and brown, whilst the eyes are large and prominent. It is evident that first-class material is here found for

the production of good crops of fruit next year, and so great is the demand that it is very difficult to meet it. We may well wonder where all the pot Vines go to. Messrs. Keynes, Williams & Co. could help solve the problem. The next most interesting feature was found in varieties of zonal and variegated Pelargoniums blooming in the mass, with exceeding brilliance. Still it is a great Pelargonium season, and it was of more interest to examine the beds of Verbenas, which in named varieties are growing and blooming so profusely. I have not for a generation seen such very beautiful masses of colour as some of these gave, and I am sure no other plant in cultivation could have excelled them. Specially noticeable were of whites, White Queen, pure white, an occasional flower showing a scarlet pip, as a curiosity; and Boule de Neige, very large truss, dwarf, spreading, and free. Then of blues, the old Purple King, a very free bloomer; Purple Queen, more robust, bluish-purple, wonderfully free, a splendid bedder; and Lottie, very dark blue, with white eye, dwarfier and very effective, were of the best. Scarlets were most effective. Lustrous, very dwarf, spreading, and fine truss, with white eye; Eclipse, brilliant scarlet, spreading and very free; and Royalty, fiery crimson-scarlet, were the best. Of other hues, a great beauty is Allemania, reddish-carmine, white eye—remarkably free; Nemesis, rich rosy-red, dwarf and spreading—very effective; Ethel Barnes, rosy-cerise, a charming variety; and Edward Parkin, flesh-white, red eye, make up a beautiful dozen. It would be a pleasure indeed to see Verbenas blooming generally as at Salisbury, and more largely used for bedding. No doubt the heat has helped this floriferousness, as it has so hardened the wood that propagation is much more difficult than usual this year, as the firm find to be the case. Dahlias seem to be more robust than usual this year, due doubtless to the abundant waterings given, and the long period of heat. All the show and fancy forms leave nothing to be desired, so far as height is concerned. Few reach 3 feet, a great improvement on the shows of twenty years ago. It is in the Cactus and Pompon sections that a great reduction of height is desirable, but it is doubtless here the case that feeding and water have made these sections exceptionally strong. The Cactus form, of which the firm have one of the best strain of seedlings in the kingdom, cannot be classed as decorative in the garden. They all more or less hide their blooms. But for the production of flowers for cutting, they are invaluable, and with Bertha Mawley, Panthea, Countess of Gosford, Countess of Radnor, Lady Penzance, and some others, there are being produced at Salisbury varieties that are now commanding wide popularity. This is but the result of careful cross fertilisation. In the production of new Pompons there is not less success. Some seedlings yet unnamed are very charming little beauties that will be seen effectively next year. It is satisfactory, however, to note that whilst these Pompons will grow tall, many of them throw their flowers so well above the foliage, that they are very effective in gardens. White Aster, Lady Blanche, &c., of whites are good, indeed all the whites are; so also are Juno, a large Pompon; Little Frank, Little Jack, Isabel, Lilian, G. Brinkman, Catherine, Janet, Crimson Beauty, Rosalie, Leila, and some few others, the flowers being thrown so well above the foliage. If grown in less rich soil, the habit is even better. So far as varieties are concerned of any section, it is not worth while to make selections, as all the best are being shown so profusely at exhibitions, and all are good if caught at the right moment. Without doubt at Salisbury, as elsewhere, the popularisation of the Cactus forms has done wonders for the Dahlia generally, and at the present moment there is hardly a tender plant that is more widely grown for flower, or held in higher esteem. A. D.

SOCIETY.

KINGTON, HEREFORDSHIRE.

SEPTEMBER 14.—This annual exhibition was held on Thursday, in the Burton Plock. The display of flowers was exceedingly good for the time of year,

and the fruit was of unusual excellence. The vegetables were of first-class quality, the cottager's exhibits almost beating those of the professionals. Mr. R. Green took 1st prize for greenhouse plants. Lady Ormathwaite was a very successful exhibitor, taking premier honours for the best collection of fruit, 1st for culinary Apples, Roses, Runner Beans, Cucumbers, Celery, &c. Mrs. Banks, of Ridgebourne, also won several 1st prizes, and her exhibits all round were excellent. Mr. Robinson, of Lynhales, was 1st for Carnations, Dahlias, and several classes of vegetables. The table decorations exhibited were numerous and very pretty. Miss Passey taking 1st prize for the best arranged collection, Mr. Billiard 2nd, and Mrs. Peene 3rd. An extra prize was given to Mrs. Ward. Mrs. Wellington Lloyd took 1st for the best arrangement of flowers for hall decoration, Miss Passey being 2nd, and Mr. Dillow 3rd. Mrs. Peene won premier honours for best hand bouquet, and Miss Passey 2nd. There was a good display of Ferns. Sir W. B. Giles showed some splendid Tomatos, Nectarines, Roses, zonal Pelargoniums, &c., and took several prizes.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

A correspondent, "*Devona*," would be glad if some of the readers of the *Gardeners' Chronicle* would instruct him in the cultivation of the following plants: *Nanodes Medusa*; *Isophilus linearis*, *Sophronitis grandiflorus*, and *Oncidium pulchellum*.

"THE GARDENER" (edited by David Thompson).—A correspondent is desirous of obtaining the numbers for July, 1879; April, 1881; and December, 1882. Communications should be addressed to the Editor.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
	Above (+) or below (—) the Mean for the week ending September 16.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.				
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.			
0	1 +	72	0	+ 585	57	17 +	163	39.3	33
1	1 +	81	0	+ 382	21	5	131	17.4	44
2	0 aver	91	0	+ 446	62	6	111	13.7	44
3	1 -	91	0	+ 500	37	6	108	12.7	58
4	1 -	84	0	+ 653	48	7	105	13.2	52
5	0 aver	113	0	+ 568	43	3	101	13.2	55
6	0 aver	82	0	+ 519	63	7	128	24.1	50
7	1 +	101	0	+ 708	91	5	116	18.0	39
8	0 aver	102	0	+ 713	70	9	105	19.7	45
9	1 +	90	0	+ 585	104	8	139	21.9	39
10	1 +	101	0	+ 644	100	7	121	20.5	39
* 1 +	126	0	+ 826	52	7 +	110	16.4	49	58

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 16, is furnished from the Meteorological Office:—

"The weather during this period was fine and bright over the greater part of the Kingdom, but extremely heavy falls of rain were experienced over 'Scotland, N.W.' Towards the end of the week heavy rain also occurred locally at some of our southern stations.

"The temperature did not differ materially from the normal. The highest of the maxima were recorded on the 14th, when these varied from 79° in 'England, S.' to 70° in 'Scotland W.' and to 65° in 'Scotland, N.' The absolute minima, which were registered at most stations, either on the 12th or 13th, were very low generally; in 'Scotland, E.' the thermometer fell to 29°; in the 'Midland Counties' and 'Scotland, W.' to 30°; in 'Scotland, N.' and 'Ireland, S.' to 31°, and in most other districts to between 33° and 40°. In the 'Channel Islands,' however, the lowest reading was 52°.

"The rainfall greatly exceeded the mean in 'Scotland, N.' and the 'Channel Islands,' but was much less in all other districts; in most parts of England the fall was extremely slight. At Glen-carron during the 12th the fall amounted to as much as 3.59 inches, and at Fort William to 2.91 inches.

"The bright sunshine again exceeded the mean, the percentage of the possible duration, ranging from 58 in 'England, E.' 55 in 'England, S.' and 52 in the 'Midland Counties;' to 39 in 'England, N.W.' over Ireland, and to 33 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, September 21.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

PRICES rule as last week.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Foliage plants, doz.	12 0-42 0
Aspidistra, per doz.	15 0-30 0	Fuchsia, per doz.	4 0-6 0
— specimen, each	7 6-21 0	Heliotrope, per doz.	4 0-6 0
Asters, dozen pots	3 0-6 0	Hydrangea, per doz.	12 0-24 0
Balsams, per doz.	3 0-6 0	Ivy Geranium, doz.	4 0-6 0
Campanula, per doz.	6 0-12 0	Lilium Harrisii	18 0-24 0
Chrysanthemums, doz	6 0-9 0	— lancifolium, dz.	12 0-18 0
— large plants, each	1 6-2 0	Marguerite, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, per doz.	4 0-6 0
Dracena, each	1 0-5 0	— pots	4 0-6 0
Erica caffra, per doz.	9 0-15 0	Palms, various, each	2 0-10 0
Ferns, various, doz.	4 0-9 0	— specimens, each	10 8-84 0
Ferns, small, per	100 ...	Pelargonium, p. doz.	6 0-12 0
100 ...	4 0-6 0	— scarlet, p. doz.	3 0-6 0
Ficus elastica, each	1 6-7 6	Solanums, per doz.	9 0-12 0

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	3 0-4 0	Orchids:—	
Aster, dozen bun.	3 0-6 0	Cattleya, 12 blms.	6 0-12 0
Bouvardias, per bun.	0 6-1 0	Odontoglossum	
Carnation, doz. bun.	4 0-9 0	— crispum, 12 blms.	2 0-6 0
— dozen blooms	1 0-2 0	Peas, Sweet, various,	
Chrysanthemums, 12		doz. bunches	3 0-6 0
— bunches	4 0-8 0	Pelargoniums, scar-	
— doz. blooms	0 6-2 0	— let, p. 12 bun.	2 0-4 0
Cornflower, 12 bun.	1 0-2 0	— 12 sprays	0 6-0 9
Dahlias, doz. bun.	2 0-4 0	Poppy, doz. bunches	1 6
Eucharis, per dozen	1 6-4 0	Primula, dble. p. bun.	0 6-1 0
Gardenia, per dozen	2 0-4 0	Pyrethrum, 12 bun.	2 0-4 0
Heliotrope, 12 sprays	0 3-0 4	Roses, doz. bunches	3 0-8 0
Lilium lancifolium,		— Tea, per dozen	0 6-2 0
p. doz. blooms	1 0-2 0	— coloured, dozen	2 0-4 0
— Harrisii, p. doz.	2 0-5 0	— yellow (Maré-	
Maiden Hair Fern,		— chals), per doz.	1 6-6 0
12 bunches	4 0-6 0	— red, per dozen	1 0-1 6
Marguerite, 12 bun.	1 6-3 0	Stocks, per bunch	0 4-0 6
Mignonette, 12 bun.	2 0-4 0	Sunflower, various,	
Myosotis, 12 bunches	2 0-3 0	dozen bunches	2 0-6 0
Pansy, per doz. bun.	1 0-2 0	Tuberose, 12 blms.	0 4-0 6

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	0 4-0 6	Lettuces, per doz.	0 9-1 0
Beet, red, per dozen	2 0-3 0	Mushrooms, punnet	1 6
Carrots, per bunch	0 4-0 6	Mustard and Cress,	
Cauliflowers, each	0 3-0 6	— punnet	0 2-0 3
Celery, bundle	1 0-1 3	Parsley, per bunch	0 2-0 3
Cucumbers, each	0 2-0 6	Shallots, per lb.	0 3-0 3
Endive, per dozen	1 2-1 6	Tomatoes, per lb.	0 3-0 6
Herbs, per bunch	0 3-1 0	Turnips, per bunch	0 4-0 6
Leeks ...	0 2-		

POTATOES.

In consequence of the low prices, farmers are not loading quite so heavily, which makes prices a little firmer. Best Hebrons and Snowdrops, 100s. to 110s.; Bruce, 70s. to 80s. other kinds, 42s. 6d. to 60s. J. B. Thomas.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, per bush.	1 0- 6 0	Peaches, per doz.	1 0- 6 0
Cobs, per 100 lb.	30 0- ...	Pine-apples, St. Michael	2 0- 5 0
Grapes, per lb.	0 6- 3 0		

SEEDS.

LONDON: Sept. 20.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with but little business doing. The supply of Trifolium exceeds the demand, and choice seed can consequently now be bought on most reasonable terms. Winter Tares have become very scarce, and are again dearer. There is more doing in Seed-rye, at hardening rates. Mustard is 8d. per bushel dearer. There is no change in Rapeseed. Increased attention is given to Canary seed, and quotations have advanced 2s. to 3s. per quarter. Hempseed keeps steady. Linseed is quiet. For Peas and Haricot Beans there is a better sale.

FRUITS AND VEGETABLES.

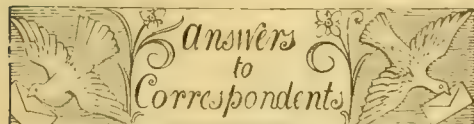
BOROUGH: September 19.—Quotations:—Cabbages, 6s. to 8s.; Cauliflowers, 8s. to 10s. per tally; Turnips, 2s. to 4s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. 6d. to 5s. 6d. per bag; Damsons, 1s. 6d. to 2s.; Plums, 1s. 6d. to 3s. per half-sieve; Apples, 2s. to 8s.; Pears, 2s. 6d. to 9s. per bushel.

SPITALFIELDS: September 19.—Quotations:—Cabbages, 6s. to 8s.; Cauliflowers, 8s. to 10s. per tally; Turnips, 2s. to 4s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. 6d. to 5s. 6d. per bag; Damsons, 1s. 6d.; Plums, 1s. 6d. to 3s. per half-sieve; Apples, 2s. to 8s.; Pears, 2s. 6d. to 9s. per bushel.

STRATFORD: Sept. 20.—There has been a good supply of all kinds of produce at the above market during the past week, and a brisk trade has been done at the undermentioned quotations:—Cabbages, 4s. to 7s. per tally; Cauliflowers, 9d. to 1s. 6d. per dozen; do., 3s. 6d. to 7s. per tally; Turnips, 2s. 6d. to 3s. per dozen bunches; do., 60s. to 70s. per ton; Carrots, household, 45s. to 60s. per ton; cattle-feeding, 30s. to 35s., do.; Mangels, 21s. to 26s. do.; Onions, English, 120s. to 130s. do.; do., Dutch, 4s. to 5s. 6d. per bag; do., Porto, 5s. to 7s. per case; Apples, English, 2s. to 4s. per bushel; Cucumbers, frame, 1s. 3s. to 2s. per dozen; do., field, 4d. to 8d. do.; Scarlet Beans, 3s. to 3s. 6d. per sieve; Celery, 10d. to 1s. 3d. per roll.

FARRINGTON: September 20.—Quotations:—Cauliflowers, 8s. to 10s.; Cabbages, 6s. to 8s. per tally; Turnips, 2s. to 4s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. to 5s. per bag; Marrows, 2s. 6d. to 3s. per hamper; Cucumbers, frame, 2s. per dozen; Pickling Cabbage, 1s. 6d. per dozen.

FARRINGTON: September 21.—Quotations:—Apples, 2s. to 3s. 6d. per bushel; Pears, 2s. 6d. to 5s. do.; Grapes, 13s. 6d. per barrel; Colmars, black do., 6d. per pound; Tomatos, 3½d. do.; Plums, 3s. per half-bushel.



ACHIMENES: E. W. It is the first double Achimenes we have seen. We will examine it and report later on. In the meantime keep the plant.

AMERICAN HOP: Nil desperandum. We do not know any such name, but being a popular one, we suspect it belongs to a plant that is not a Hop, and is not American. Can it be *Origanum Didamnus*?

BOOKS: W. H. *Handy Book of the Flower Garden*, by David Thompson. Blackwood & Sons, Edinburgh and London, price 7s. 6d.—A. M. *The Illustrated Dictionary of Gardening*, edited by George Nicholson; 4 Vols., L. Upcott Gill, 170, Strand.

INSECT ON DENDROBIUM: T. A., Warwick. The insect damaging leaves of *Dendrobium densiflorum* is a kind of thrips, possibly imported with the plants. The deformity in the bulbs is more likely to have been caused by the Cattle-fly. There is nothing in the specimen sent, but indications that something has been there. R. McL.

INSECTS ON PHALANOPSIS: W. H. The beetle found on *Phalanopsis* is certainly a weevil (one of the *Curculionidae*), but crushed beyond all recognition, even supposing that to be possible in more than a general sense. It may be taken for granted that some of the natural enemies are sure to arrive with the large importations now taking place, and some of these if they become established here will probably not confine their attention to the plants in which they arrived. It may become a question whether newly-imported plants should not be placed in a purgatorium before being placed in the ordinary Orchid houses. R. McL.

MELON: H. Bell. The leaves seem to have been greatly infested with thrips, although none were present when they arrived. The stem shows signs of gumming, which may arise from eel-worms on the roots. Can you send some of the latter for inspection?

MUSCAT GRAPES DROPPING AFTER BEING PUT IN THE GRAPE ROOM: A Subscriber. The appearance of the bunch points strongly to shanking being the cause; but the dampness arising from the quantity of Pears and Apples stored in the same room, and want of air, may have had something to do with it. You should not store other fruits with your Grapes.

NAMES OF FRUITS: We are inundated with packages of fruit to name, and greatly regret that, owing to the ill-health and absence of our pomological referee, delay in naming them is inevitable. Correspondents are reminded that whilst we are desirous to help them as far as we can in this way, it is no part of our bargain to do so, and the tax on our time and resources is very considerable. Recognising this, one Correspondent, a Belgian gentleman, has handed us a postal order to be applied to some philanthropic purpose. We propose to hand it over to the Gardeners' Orphan Fund, which would benefit greatly were all our correspondents equally thoughtful. No more than six fruits should be sent at a time. J. S. U. 2, White Doyenné; 3, Williams' Bon Chrétien; 6, Bûche Clairgeau; 7, Passe Colmar. Others next week.—Herbert B. The old Windsor Pear.

NAMES OF PLANTS: *Cynosurus*. The flowers had almost all fallen, so that we name your grasses with much hesitation. 2, *Bromus asper*; 3, *Aira caespitosa*; 5, *Brachypodium sylvaticum*; 6, *Agrostis*, perhaps *caninia*.—F. Y., *Wantage*. 1, *Avena*, near to *A. fatua*; 2, *Lycium barbarum*; 3, *Hypericum Androsæmum*.—W. P. 5, omitted last week; *Pelargonium alchemillifolium*.—E. W. *Datura Stramonium* (Thorn Apple), poisonous. J. H. W. 1, *Clethra alnifolia*; 2, not recognised; 3, *Andromeda axillaris*; 4, *Epilobium angustifolium*; 5, *Abelia triflora*.—T. M., *Oldham*. 1, *Adiantum cuneatum*; 2, *Pteris serrulata cristata*; 3, *Lastrea cristata*; 4, *Pteris longifolia*.—S. B. *Cattleya Dowiana aurea*; a very good variety of it.—J. M. *Stanhopea Wardii*.—S. M. *Celsia cretica*.—Oakleaf. *Rhamnus Frangula*, grown for the gunpowder makers. Larch insect next week.—G. Bradford. You should send your Carnations to some specialist, as we cannot undertake to name florists' flowers.

PANCRATIUM FRAGRANS: Nil desperandum. In Baker's *Amaryllidæ*, this is included under *Hymenocallis ovata*.

PARIETARIA OFFICINALIS: Nil desperandum. Britain; common on old walls. It belongs to the Nettle family, *Urticacæ*.

RHUBARB: F. A. A vegetable used as a fruit.

TOMATO DISEASED: T. Simpson. The Tomatomould on the specimens sent is *Cladosporium fuscum*, Cke. It can be controlled by spraying with sulphate of copper, and maintaining a more buoyant air in the house. M. C. C.

COMMUNICATIONS RECEIVED.—W. J. Clarke, too late for insertion.—G. N.—T. F. R.—W. E. G.—Thomson Brothers.—H. W. W.—E. W.—Messrs. Backhouse.—A. D. M.—G. L.—J. W.—D. & Co., Naples.—F. B. S.—Sig. Gaeta, Florence.—C. de B., Leirre.—D. Davies.—Wild Rose.—M. T.—B. W.—C. T. D.—J. O'B.—E. M.—R. S.—C. A. M. C.—R. D.—J. J. W.—A. D.—W.—A. P.—J. B.—T. H. S.—T. R.—J. R.—H. M. E.—Reader, next week.

PHOTOGRAPHS RECEIVED.—G. N.

DIED.—On September 11, at Spotacre Nurseries, near Stone, Staffordshire, JOHN HILL, in his 69th year.

—GEORGE MANN, head gardener to Reginald Stanley, Esq., Manor House, Nuneaton. The deceased was about 35 years of age, and well-known as a local preacher of the Nuneaton and Atherstone circuit.

—We greatly regret to announce the death of Mr. HUGH LOW of the Clapton Nursery, which took place suddenly at Upper Clapton, on Sunday, Sep-17, of pneumonia. Mr. Low was in his 32nd year, and a general favourite. He was a member of the Orchid Committee, and of the Committee of the Gardeners' Orphan Fund. The funeral took place on the 20th inst., at Abney Park Cemetery.

EARL'S COURT EXHIBITION.

Exhibition of
GARDENING and FORESTRY
THE GARDEN of LONDON.

SEPTEMBER 27, 28, and 29.

GREAT SHOW OF HARDY FRUIT
AND VEGETABLES.

Classes (Open and Amateur) for Collections of Dessert and Cooking Apples, Pears, Peaches, Nectarines, Plums, Table of Hardy Fruits, 12 feet by 6 feet, arranged for effect, and

Collections of Vegetables and Tomatos.

Meritorious Exhibits not named in the Schedule will be recognised.

Prizes, Medals, and Certificates awarded for every Show.

All applications for entries, schedules, regulations, and further information should be addressed to Mr. H. E. MILNER, the Chairman, at the Offices of the Exhibition, Earl's Court, S.W.

ADMISSION to the Exhibition Building, Flower Show, and the Central and Western Gardens, and to one of 2000 free seats at Captain Boyton's World's Water Show, 1s.

OPEN DAILY, from 11 A.M. to 11 P.M.

NOTHING
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is too small.

is too much trouble.

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(Albert Nurseries)

PECKHAM RYE, LONDON, S.E.,
and FLEET, HANTS.

LILIU NEPALENSE.

(PURPLE AND YELLOW LILY.)

IN FLOWER AND BUD.

HUGH LOW & CO.

Offer the above grand LILY, in strong
Bulbs, imported last spring.
126s. per dozen.

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B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown Stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, of sorts; ADIANTUM CUNEATUM and other FERNS; PALMS, in variety; GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES, in pots; BORONIAS megastigma and heterophylla. VINES in pots, &c., &c.

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Liquid Non-Poisonous Paint for Inside of Conservatories, &c.
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ENGLISH Glass, cut to buyers' sizes, at lowest prices

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To make up for the loss from drought, it is absolutely necessary all should use the above immediately. Its effect is marvellous. Just one powerful ingredient makes it far superior to all others.

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Has had his supply, and says: "The exact dimensions of one Onion, 7 inches across, 19 inches round, weight 2 lb. 9 oz.; twelve Onions weighing 34 lb., which I exhibited at Reading. Grown solely by the use of CANNELL'S REAL MANURE. A farmer said that he wished his Swedes were as big as my Onions."



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Blood and Bone. The Best Fertiliser for all purposes. Sold in tins, 1s., 2s. 6d., and 5s. 6d.; also in air-tight bags, ½ cwt., 1 cwt., 10s. Full directions for use sent with each tin and bag. 1 cwt. and above sent carriage paid, cash with order. C. BEESON, Bone Mills, St. Neots, Hunts.

"12, Knowle Road, Brixton, London.

"I have tried this fertiliser on various garden crops, and I am able to say that it is an excellent Manure for Vegetables, Flowers, Vines, and Fruit Trees.

"A. B. GRIFFITHS, Ph.D., F.R.S.E., F.C.S."

To Nurserymen and Gardeners.

WANTED, the above, to try SPENCER'S

NEW ELECTRA GUANO.

Prize Growers of Flowers and Vegetables will find this the

most powerful yet harmless Fertiliser yet introduced. Sample

cwt. bag, 10s. carriage paid. Analyst's report with each parcel.

Agents wanted in districts not yet represented. First-class

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Apply, I. SPENCER, 54, Spring Street, Hull.

BONES! BONES!! BONES!!! Any size

from dust to 1 inch. Dissolved Bone Compound, for

Top-dressing. All at 10s. per cwt.; less quantity, 1½d. per lb.

Carriage paid on 1 cwt. Terms, Cash with Order. Special

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TRADE MARK.

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These well-known Manures are used by the Leading

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Sold by Seedsmen, Florists, and Nurserymen, in 6d. and

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7 lb. 14 lb. 28 lb. 56 lb. 112 lb.

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Or direct from the Works, in 1s. PACKETS, Post-free, or

Bags of either size, Carriage Paid (as sample), in the United

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Prices and Samples of CRUSHED BONES

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ALBERT'S HIGHLY CONCENTRATED HORTICULTURAL MANURE.

A Chemically Pure Plant Food.

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HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered

HOT-WATER BOILERS,

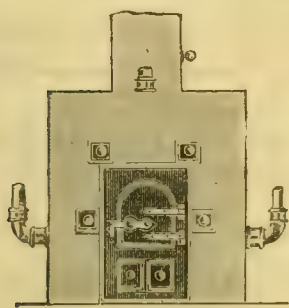
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SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

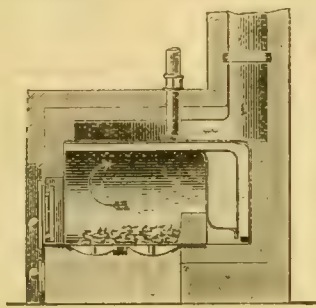
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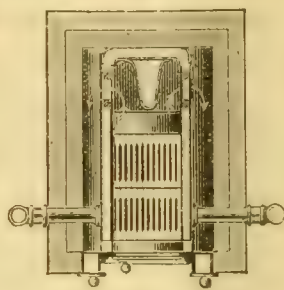
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—FRONT ELEVATION—



—LONGITUDINAL SECTION—



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The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

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M B 1	3 ft. 2 in.	by 2 ft. 0 in.	by 2 ft. 0 in.	Calculated to heat 4-in. piping as follows:—	1280	£15 0 0
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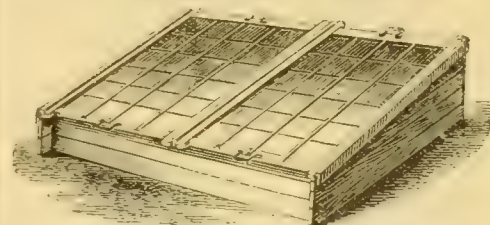
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OUR WELL-KNOWN MAKE.



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PREPARED, ready for use, all fibre, 10s. per sack; 5 for 47s. 6d. SELECTED, in blocks, very fibrous, 8s. per sack; 5 for 37s. 6d. SECOND QUALITY, 5s. per sack; 5 for 22s. 6d. BROWN FIBROUS PEAT, for Azaleas, Rhododendrons, and Ferns, 4s. per sack, 5 for 18s.; and 3s. per sack, 5 for 12s. 6d. PEAT-MOULD, LEAF-MOULD, and FIBROUS LOAM, each 2s. 6d. per sack; 5 for 10s. PREPARED POTTING COMPOST, 4s. per sack; 5 for 18s. All sacks included.

Send Postal Order for Sample Sack.

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EPPS'S ^{Selected} PEAT,

For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. SPECIAL ORCHID PEAT, in sack only. Rich fibrous LOAM, superior LEAF-MOULD, Coarse, Crystal, and Fine SILVER SAND, CHARCOAL, C. N. FIBRE REFUSE, fresh SPHAGNUM, Patent MANURES, FERTILISERS, INSECTICIDES, and all other Garden Requisites. Peat Moss Litter.

The Original Peat Depot, RINGWOOD, HANTS.

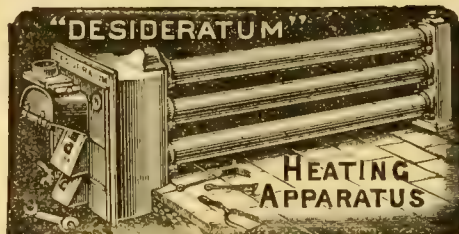
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ROCK FORMATION,

FOR WINTER GARDENS AND FERNERIES; WATERFALLS, STREAMS, LAKES, &c. As at Earl's Court Fernery Cascades, by us. PULHAM & SON, 50, Finsbury Square, E.C. As by us at Imperial Institute Gardens. VASES, FOUNTAINS, KERBING, BALUSTRADES, TERRACES, &c., IN STONE-LIKE AND RED TERRA COTTA. Durability Guaranteed.

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For GREENHOUSES and OTHER BUILDINGS.

CATALOGUE AND ESTIMATES FREE.

THE AUTOMATIC DAMPER.

ECONOMY of FUEL and LABOUR.

REGULARITY OF TEMPERATURE.

ROYAL HORT. SOCIETY'S SILVER MEDAL.

Numerous Testimonials.

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ORCHID BASKETS, RAFTS, BOATS, AND CYLINDERS, AND ALL GARDEN SUNDRIES.

SEND FOR A

PRICE LIST

from the Largest Manufacturer in the Trade.

H. G. SMYTH,

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GLASS! CHEAP GLASS!

In Stock Sizes.

15-oz., per 100 ft., 8s. 6d. } 12x10, 18x12, 18x14, 24x14
21-oz., " 11s. 9d. } 14x12, 20x12, 18x16, 24x16
1 1/2 x 3 Prepared Sash Bar at 5s. per 100 feet.
Paints and Varnishes at Low Prices. Flooring, 5/9 per square; Matching, 4/9; 2x4, at 1/4d. per foot run; 2x7 at 1d.
Horticultural Work of all descriptions, Ironmongery, &c.
CATALOGUES Free. THE CHEAP WOOD COMPANY, 72, BISHOPSGATE STREET WITHIN, LONDON, E.C.

CHAMBERINE (PATENTED).

A Noiseless, unbreakable, Light, Non-absorbent Chamber Cover; post-free, 2s. 3d. per pair, or 12s. per dozen, from—H. LEWIS, late Chemist, St. Albans, Herts.



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HORTICULTURAL BUILDERS and HEATING ENGINEERS,

PAISLEY.

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of every description, in either Wood or Iron, or both combined.

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Hot-water Apparatus for warming Buildings of every description.

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for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost.

Used in all the London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer. Price 1s. 6d. per gallon at the manufactory, or carriage paid to any railway station, 1s. 8d. per gal. in casks of 36, 18, or 9 gals.

Every Cask bears the above CAUTION.—Registered Trade Mark. Beware of cheap imitations.

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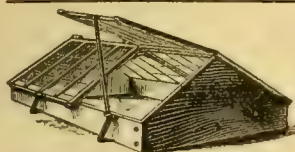
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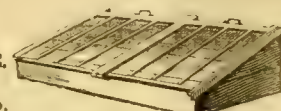
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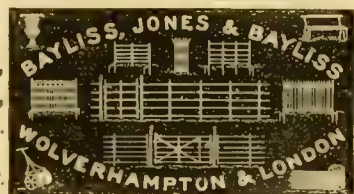
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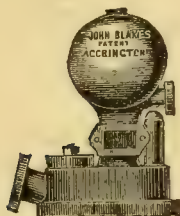
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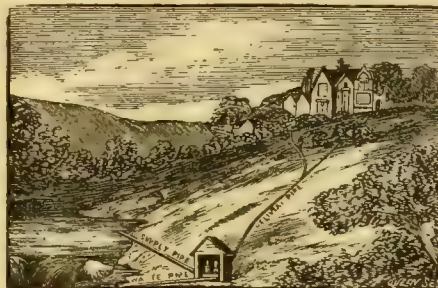
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Fig. A.

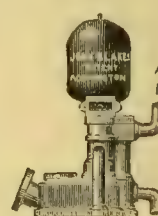


This Ram raises a portion of the same water that works it.



View of Ram worked by water from a spring, and supplying the house and garden on the hill.

Fig. B



This Ram, whilst worked by a stream of impure water, will pump clean water from a well or spring.

TESTIMONIALS FOR JOHN BLAKE'S PATENT SELF-ACTING HYDRAULIC RAMS:—

From T. DYNE STEEL, Esq., M.I.C.E., Past Pres. South Wales Inst. of Engineers, *Bank Chamb., Newport, Mon., April 24, 1891. Usk Waterworks.*

"DEAR SIR,—In September of last year I applied to you for a Hydraulic Ram for the purposes of the Usk Waterworks, to be capable of raising 27,000 gallons per day a height of 127 feet, with a working fall of driving water of 27 feet, and on your guaranteeing that performance, I gave you an order for the Ram. The Machine you supplied has now been put to work, and I have much satisfaction in saying that it far and away exceeds in its performance my most sanguine expectations, and possibly yours also. I have just completed a series of exhaustive tests with the following results:—

"Working fall of driving water, 30 feet; vertical height raised, 127 feet; length of rising main, 850 feet from Ram to outflow; length of supply pipe, 200 feet; gallons per hour raised 1612; driving water used per hour, 8186 gallons, showing the remarkable and gratifying result of **83 per cent. of efficiency.**

"The tests were carefully made and repeated, the water measured, and levels properly taken. Several trials were made, and I shall be glad to give any Engineer interested in the subject facilities for repeating the tests at the spot.

"I may here state that for the rising main I used a large diameter of pipe in order to reduce friction, with excellent effect.

"Yours faithfully, T. DYNE STEEL."

From C. PAGE WOOD, Esq., *Wakes Hall, Wakes Colne, Essex, January 11, 1889.*

"SIR,—In reply to your inquiry, the Hydraulic Ram you put down for me in 1884 has cost me only 6d. in repairs (for a new stud my blacksmith made); the second Ram you put down to supply an off-hand farm has been running three years, and has cost not a penny in repairs; the third and largest Ram you put down two months ago, which is for the supply of water to my neighbours, is running satisfactorily. All three Rams throw up more water than you guaranteed. From enquiries I have made from friends who have Rams of other makers, I am convinced of the superiority of yours, and my third order is a proof of my good opinion. My abundant water supply is the greatest possible comfort to me.

Yours faithfully, C. PAGE WOOD."

From Mr. THOMAS VARLEY, Agent to the Trustees of the late WILLIAM ROUNDELL, Esq., *Gledstone Estate, West Marton, Skipton, August 11, 1887.*

"DEAR SIR,—The Patent Hydraulic Ram you fixed five years ago on this estate is still working as well as it did on the day it started. It is driven by spring water carried along the hillside in 950 yards of iron pipe, and forces up an abundant supply to an underground tank on the hill at a distance of two miles from and at an elevation of 284 feet above the Ram. The water is then gravitated through several pipes and branches, having a total length of about four miles, for the supply of the mansion, garden, stables, estate workshop, and steam boiler, the village of West Marton, and several farms. There are five fire-plugs inside the mansion and seven outside; and as the underground reservoir is 70 feet above the mansion, seven jets of water can be thrown over the house in case of fire. As there is still a considerable overflow from the underground reservoir running to waste, I intend to form a second reservoir at a lower level, and utilize the water for other farms. I have much pleasure in being able to report as above."

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His Highness the Maharajah of Kashmir
His Grace The Duke of Devonshire
His Grace The Duke of Westminster
His Grace The Duke of Cleveland
His Grace The Duke of Portland
His Grace The Duke of Sutherland
His Grace The Duke of Leeds
His Grace The Duke of Marlborough
His Grace The Duke of Grafton
The Most Hon. The Marquess of Ripon
The Most Hon. The Marquess of Downshire
The Most Hon. The Marquess of Abergavenny
The Most Hon. The Marquess of Londonderry
The Most Hon. The Marquess of Cholmondeley
The Right Hon. The Earl of Derby
The Right Hon. The Earl of Devon
The Right Hon. The Earl of Gainsborough
The Right Hon. The Earl of Romney
The Right Hon. The Earl of Granard
The Right Hon. The Earl Beauchamp
The Right Hon. The Earl of Caledon
The Right Hon. The Earl of Lichfield
The Right Hon. Earl Ferrers
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The Right Hon. The Earl of Wemyss
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2753.

No. 353.—VOL. XIV. { THIRD
SERIES. }

SATURDAY, SEPTEMBER 30, 1893.

{ Regt. as a Newspaper. { PRICE 3d.
WITH SUPPLEMENT. { POST-FREE, 3d.

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"GARDENERS' CHRONICLE."

Continued Increase in the Circulation.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

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BOUVARDIAS.—Best varieties, in bud, 9s. per dozen.

SOLANUMS.—Well berried, beautiful stuff, 12s. per dozen. PTERIS FERNS, in variety, in small pots, 12s. 6d. per 100. WALSHAW AND SON, Scarborough.

LARGE CAMELLIAS.—Special Offer, holding good up to the end of the present month. A quantity of these, in splendid health, and well set with bloom, will be sold at half usual prices, owing to room being wanted for other plants. Particulars on application to—WM. PAUL AND SON, Waltham Cross, Herts.

WANTED, Tall SPECIMEN PALMS. Particulars to 28, Crawford Street, W.

WANTED, CYMBIDIUM LOWIANUM Specimens.—Price to COLLINS AND COLLINS, Cumberland Park Nurseries, Willesden Junction, London.

ORCHIDS.—Many rare and choice Cattleyas, Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST. W. L. LEWIS and CO., F.R.H.S., Chase Side, Southgate, London, N.

20 per Cent. Reduction.

STRONG STRAWBERRY PLANTS, in Pots, or as Runners, can now be supplied without delay at reduced prices, except new ones. GEORGE BUNYARD and CO., Maidstone.

Prize Cob Filberts.

MR. COOPER, Western Elms, Reading (late of Calcot Gardens), is the largest grower of Prize Cob Filberts in the Kingdom; 20,000 fine young Trees now ready for Sale. Pamphlets and Price Lists on Application.

FOR SALE, Souvenir de Malmaison CAR-NATION LAYERS, well-rooted, 500 Germania, good strong layers, out of pots, all at 30s. per 100; or 4s. per dozen. J. LITTON, Grosvenor Cottage, Bath.

DAFFODILS.—Irish-grown. Recommended by all the chief Growers in England. Hartland's "Little Book," with low prices for 1893, post-free. HARTLAND, F.R.H.S., Seedsman, Cork. Established 1810.

Cheap Kentias.

KENTIA BELMOREANA and K. FOSTERIANA, splendid stuff from stores, 12 inches high, 3s. 6d. per doz., 24s. per 100. Package and carriage free for cash with order.—J. PREWETT, Swiss Nursery, Hammersmith, W.

PEACHES and NECTARINES, Standard and Dwarf-trained Trees, well ripened Heads, fibrous Roots. CHERRIES, stout Standards, fruiting Heads. All kinds of FRUIT and ROSE TREES, Wholesale and Retail. WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for LIST, free. P. MCARTHUR, The London Nursery, 4, Maids Vale, London, W.

Strawberries.

A FINE COLLECTION of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free. THOMAS RIVERS and SON, Sawbridgeworth.

To the Trade.

RAPESEED and AGRICULTURAL WHITE MUSTARD. H. AND F. SHARPE have to offer fine samples of RAPESEED and WHITE MUSTARD, suitable for Field Culture. Special quotations and samples on application. SEED GROWING ESTABLISHMENT, WISBECH.

To the Trade.

IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order.

E. D. SHUTTLEWORTH and CO., LTD.

Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our specialty—really good stuff grown for the Trade.

"KILLMRIGHT,"

For Destruction of all Insect Pests and Mildew.

THE STOTT DISTRIBUTOR CO. (Lmtd.), Barton House, Manchester.

J. WEEKS & Co., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings, Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON and SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,

CENTRAL AUCTION ROOMS AND ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Tuesday Next.

An EXTENSIVE COLLECTION of well-grown and healthy ORCHIDS, mostly unflowered, from a well-known collection, absolutely without reserve, comprising—

<i>Cattleya aurea</i>	<i>Odontoglossum Alexandræ</i>
„ <i>Skinneri</i>	„ <i>Pescatorei</i>
„ <i>granulosa</i>	„ <i>caudatum</i>
<i>Cecylomyne cristata</i>	„ <i>Halli</i>
„ <i>alba</i>	„ <i>Harryana</i>
<i>Cypripedium hirsutissimum</i>	„ <i>grande</i>
„ <i>Schlimii</i>	„ <i>citrosomum album</i>
„ <i>Lawrenceanum</i>	„ <i>hastilabium</i>
„ <i>insigne</i>	<i>Oncidium tigrinum</i>
<i>Dendrobium Findleyanum</i> ,	„ <i>splendidum</i>
and others	„ <i>ampliatum majus</i>
<i>Lælia grandis tenebrosa</i>	„ <i>Angræcum Leonis</i>
„ <i>purpurata</i>	<i>Vanda Sanderiana</i>
„ <i>anceps</i> in variety	And numerous others.

Together with ORCHIDS in FLOWER.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 3, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Bagshot.—Absolutely Without Reserve.

Important TWO DAYS' SALE of unusually well-grown NURSERY STOCK, by order of Mr. R. Mason.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION on the Premises, the Windlesham Nurseries, Bagshot, Surrey, a few minutes' walk from Bagshot Station, on TUESDAY and WEDNESDAY NEXT, October 3 and 4, at 12 o'clock each day, 1000 Standard and Bush Hybrid RHODODENDRONS, of the choicest sorts, 2000 R. ponticum, 3 to 3½ feet; 900 AZALEA PONTICA, 1½ to 2 feet; 400 Variegated Gold and Silver Hollies, 1½ to 3 ft.; 5000 Green Hollies, 6 to 9 inches; 10,000 Portugal, common, and other Laurels, 9 inches to 3 feet; 100 Golden Yews, 2 to 3 feet, many thousands of Conifers and Evergreen Shrubs, 1 to 6 feet, including some fine specimens; 300 *Retinospora plumosa aurea*, 2300 *Thujaopsis borealis* and *dolabrata*, *Thuja gigantea* and *Lobii*, 2500 *Cupressus*, 3 to 3½ feet; 4500 *Pinus austriaca*, 1½ to 6 feet; 800 *Weymouth Pines*, 3 to 9 feet; 300 *Araucaria imbricata*, 2 to 4 feet; 6000 *Berberis aquifolia* Darwinii and *stenophylla*, 9 inches to 4 feet; some thousands of Standard Ornamental and Forest Trees, 1000 Purple Beech, 700 Limes, Elms, and Planes, 6 to 10 feet; 2000 Standard and Pyramid Fruit Trees, 500 Kentish Cob and Filbert Nuts, and other stock.

The stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers & Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—Purchasers can arrange with Mr. Mason to lift and forward any lots to any part of the country.

Lea Bridge Road Nurseries, Leyton, E.

A few minutes' walk from Hoe Street or Lea Bridge Stations on the Great Eastern Railway.

GREAT UNRESERVED SALE of superior NURSERY STOCK, the Land being Sold for Building.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, The Lea Bridge Road Nurseries, Leyton, Essex, on WEDNESDAY, October 11, and two following days, at 12 o'clock precisely each day, WITHOUT RESERVE, by order of Mr. JOHN FRASER, who is TRANSFERRING the BUSINESS to SOUTH WOODFORD, a large quantity of unusually well-grown

NURSERY STOCK,

All carefully prepared for removal, consisting of 2500 HOLLIES, 1½ to 2 feet, and 5 feet to 8 feet; 3000 LAURELS, in variety; a considerable quantity of Specimen BORDER SHRUBS; AZALEA ALTA CLARENSE; LILACS, and other Hardy Flowering Shrubs; 1000 PLANES, 10 to 14 feet; 1000 BIRCH, 1000 PURPLE BEECH, 1000 MOUNTAIN ASH, WEEPING ASH, MAPLES, SYCAMORES, POPLARS; 2000 LIMES, 2000 Variegated and other IVIES, 500 CRATEGUS LELANDI, 500 PYRUS JAPONICA, 1000 CLEMATIS JACKMANI and others, 1000 AMPELOPSIS VEITCHII, 500 PASSIFLORA CONSTANCE ELIOT, CEANOTHUS, HONEYSUCKLES, and other Hardy Climbers in pots.

10,000 FRUIT TREES, comprising 1000 Standard and Pyramid Apples, 1500 Standard and Pyramid Pears, 1500 Plums and Cherries.

2000 CLOVE and other CARNATIONS, in pots.

Strong Fruiting and Planting Canes of VINES, embracing Black Hamburg, Muscat, and other sorts; 1000 CYCLAMEN, 2000 ROUBARDIAS, full of flower buds; 3000 GENISTA FRAGRANS, splendid stuff; 1000 SOLANUMS, full of berries; 500 LAPAGERIA ROSEA, and other Greenhouse Climbers; HOLLYHOCKS, seedlings from the best named sorts, with names; and other useful Stock.

May be viewed any day prior to the Sale. Catalogues may be obtained on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B.—Purchasers may arrange with Mr. Fraser to have their lots lifted and forwarded at the cost of labour incurred and material used.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.

5000 Lots Sold Weekly.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS and other BULBS from Holland; also ROMAN HYACINTHS, LILIUM CANDIDUM and other bulbs for early forcing, lotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

Cliffe, near Rochester.

FIFTH ANNUAL GREAT FRUIT-TREE SALE.

Important to Fruit Growers, Market Gardeners, and Others.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester, adjoining Cliffe Station, South-Eastern Railway, on WEDNESDAY NEXT, October 4, 1893, at half-past 11 o'clock, by order of Mr. Horne.

5000 BEAUTY OF BATH,

(The Coming Apple),

In Standards, Half-standards, and Maidens, on Crab and English Paradise. This Apple has gained honours at every exhibition where shown, and was included in the first class collection of Dessert Apples at the recent Fruit Show, open to all England, Earl's Court, August 26, 1892, and first in class with thirty-five dishes staged against it. Mr. Horne holds the largest stock in England of this grand variety, and when better known it will be grown more largely than any other Apple in commerce.

Two thousand 1 and 2-year BISMARCK (New) APPLE, of great repute, 40,000 Standard, Half-standard, and Maiden APPLES, PEARS, and PLUMS, of sorts. 5000 PEARS, Williams and others; 2000 Half-standard PLUMS; 35,000 GOOSEBERRIES, Whinham's Industry, Crown Bob, and Lancashire Lad; 10,000 Baldwin's BLACK CURRANTS; 40,000 Semper Fidelis, Sir John Falstaff RASPBERRIES; 60 dozen of the new celebrated John Ruskin and Noble STRAWBERRY, for forcing, in large or small pots; 25,000 John Ruskin, from open ground; 25,000 Nobles, 40,000 Paxtons, 30,000 2 and 4 years' Connover's Colossal ASPARAGUS; 40,000 East Kent Brambling, Goldings, Prolifics, and Fuggles Bedded; also HOP SETS; and 40,000 Early Rain-ham, Myatt's Offenham, Drumhead, and Thousand-head CABBAGE PLANTS.

Mr. Horne will lift and put on rail all lots (after the Sale) free of expense, and will allow one month to clear. Luncheon at 11. Sale at 11.30.

Catalogues may be had on the Premises; and of the Auctioneers, Land and Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Isleworth.

ANNUAL TRADE SALE of GOLDEN EUONYMUS and young CONIFERS for potting, window-boxes, and growing on, by order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE & MORRIS will sell by AUCTION on the Premises, The Wood Lane and Arboretum Nurseries, Isleworth, Middlesex (five minutes' walk from Isleworth or Osterley Park Stations), on THURSDAY NEXT, October 5, at 12 o'clock precisely.

4000 BEST GOLDEN EUONYMUS,

from 9 to 15 inches, in splendid condition and colour; undoubtedly the finest lot ever offered at this nursery.

Thousands of SMALL SHRUBS for BOXES, including Golden Privet, Aucubas, Yellow-berried Tree-Ivies, Osmanthus, Gold and Silver Box.

4000 CONIFERS, 9 to 24 inches, for boxes, potting, or growing on.

Thousands of Specimens from their famed Collection of ORNAMENTAL TREES,

consisting of Cornus elegantissima, flowering Catalpas, Tulip Trees, Planes, Purple Beech, Limes, Acers, Chestnuts, Poplars, and other Standard Trees.

1000 GREEN HOLLIES, 2 to 6 feet.

Hundreds of well-grown Erica hymenalis, gracilis, and others; Acacia Drummondii, Eurya variegata, Cyclamen.

500 KENTIAS, COCOS and other PALMS, &c.

May be viewed one week prior to Sale. Catalogues had at the Nurseries; at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers and Valuers, 67 and 68 Cheapside, London, E.C.

N.B.—Special attention is drawn to the unusually fine stock of Ornamental and other Trees, which are a great feature at the Arboretum Nursery, and intending purchasers are invited to inspect the lots whilst the foliage is still on the trees.

Expiration of Lease.—Hounslow Heath, Middlesex.

ABSOLUTE CLEARANCE SALE of the whole of the well-grown NURSERY STOCK, at this Branch Nursery, by order of Messrs. Charles Lee & Son.

IMPORTANT TO THE TRADE, FRUIT GROWERS, and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS will

sell by AUCTION, on the Premises, The Nursery, Hounslow Heath, Middlesex, and at the Feltham Nursery, Middlesex, within easy distance of Feltham, Hounslow, and Hounslow Barracks' Stations, on MONDAY and TUESDAY, October 9 and 10, at 12 o'clock precisely each day, without reserve, the whole of the valuable and well-grown NURSERY STOCK, which is in capital condition for removal, including:—

4000 STANDARD and OTHER APPLES, of the most popular kinds,

4000 VICTORIA and OTHER PLUMS,

A very fine assortment of SPECIMEN CONIFERS, comprising Cupressus, Thuja, Retinosporas, Yews, Piceas, Spruce Firs, Golden Yews, Green Hollies,

HUNDREDS OF RHODODENDRONS,

Berberis, Laurels, Juniperus, Araucarias, 2000 Limes, Poplars, and other Standard Trees; also Planes, Quick, Herbaceous Plants, 2000 Dwarf H.P. and Tea Roses, and large quantities of other stock.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday Next.—Plants from Belgium.

250 AZALEAS, various kinds, well-budded plants; 24 DRACENA INDIVISA, 12 ASPIDISTRAS, 48 CAMELLIAS, well-budded, and fine healthy plants, in variety; also English-grown LILIES, NARCISSI, FREESIAS, IRIS, New CARNATIONS, CALLAS, CANNAS, PINKS, CLEMATIS, IVIES, ROSES, 40 Lots of Greenhouse FERNS and Hardy BULBS, PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, October 2, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.—Plants, Spiræas, and Bulbs.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, October 5, at 12 o'clock, 100 AZALEA INDICA, best sorts; 50 A. MOLLIS, well-budded; 60 DRACENA AMABILIS, D. TERMINALIS, fine plants; CITRUS SINENSIS, PALMS, LATANIAS, SEAFORTHIAS, 160 English-grown LILIUM KRETZERI, and others in variety; 2000 Spiræa japonica, 200 fine well-rooted CARNATIONS Souvenir de Malmaison, named NARCISSI, and other Hardy PLANTS and BULBS.

On view morning of Sale, and Catalogues had.

Friday Next.

By order of Messrs. F. Horsman & Co.

GRAND IMPORTATIONS of CHOICE ORCHIDS, consisting of a new Cattleya, the best forms of Lælia purpurata, Oncidiums, Odontoglossum, and representatives of other families, unflowered, together with the rarest Orchid in existence, viz.:

CATTLEYA INTERMEDIA ALBA,

of which there are only one or two recognised specimens in Europe; and many other rare plants.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 6, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Silverdale Lodge, Sydenham.

TWO DAYS' UNRESERVED SALE of well-grown ORCHIDS and PLANTS, by order of Walter Cobb, Esq., who is leaving the Residence.

MESSRS. PROTHEROE AND MORRIS will

sell by AUCTION, on the Premises, as above, on MONDAY and TUESDAY, October 9 and 10, at half-past 12 o'clock each day, a very fine Collection of about 2000 ESTABLISHED ORCHIDS, well-grown and in splendid condition, including 400 Cattleyas, various, 100 Lycastes, clean pieces of Lælia grandis and tenebrosa, 100 Cecylomyne cristata, 4 C. cristata alba, Sobralia virginale (true), 400 Masdevallias, amongst them Harryana in variety, and others; 100 Dendrobiums, 100 Cypripediums, 100 Phalenopsis amabilis, Schilleriana, and others; specimen Cymbidium eburneum and giganteum; Odontoglossums, &c. Also the STOVE and GREENHOUSE PLANTS, comprising Azaleas, Crotons, Dracenas, Lilioms, Streptocarpus, fine stock plant of Nepenthes Mastersiana, Gloxinias, and other plants. Two capital Houses, quantity of Teak cylinders, 4 two-light Frames, and sundry effects.

May be viewed the Friday and Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Westerham (close to the Station).

IMPORTANT UNRESERVED CLEARANCE SALE of the whole of the well-grown NURSERY STOCK, ROSES, &c., by order of Mr. Arthur Jeffkins, who is relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will

sell by AUCTION, on the Premises, the Darent and Hosey Nurseries, Westerham, Kent, on WEDNESDAY, October 11, at 12 o'clock, without reserve, 1400 Spruce FIRS, suitable for Christmas Trees; 600 Weymouth and Austrian PINES, 2000 PRIVET, LAURELS, a large quantity of well-grown CONIFERS; 2000 THUJA LOBBII, splendid plants, 6 to 7 feet, a very fine collection of 2000 Standard, Dwarf, and Climbing ROSES, in first-class condition, and including the choicest Tea and other varieties, Standard and Ornamental TREES, LILACS, and other STOCK.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The NURSERY TO BE LET on advantageous terms. Apply to the Auctioneers.

Woking.

IMPORTANT TWO DAYS' SALE of unusually well-grown NURSERY STOCK, by order of Mr. R. Collyer.

MESSRS. PROTHEROE AND MORRIS will

sell by AUCTION, on the Premises, the Cart House Lane Nurseries, Woking, on MONDAY and TUESDAY, October 16 and 17, a large quantity of exceptionally well-grown NURSERY STOCK, which has been carefully prepared for removal.

Fuller particulars will appear next week.

Sunningdale.

THREE DAYS' SALE of THRIVING NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will

sell the above by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on MONDAY, October 23, and TWO FOLLOWING DAYS, at 12 o'clock each day, a large quantity of THRIVING NURSERY STOCK, in splendid condition for removing.

Catalogues may be had on application.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will **SELL** by **AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice **HYACINTHS**, **TULIPS**, **CROCUS**, **NARCISSUS**, and other **BULBS**, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Tuesday Next.

A CONSIGNMENT of **HYACINTHS**, **TULIPS**, **CROCUSES**, **NARCISSUS**, and other **BULBS**, from a reliable Grower in Holland, in the finest possible condition; **LILUMS**, &c.

MR. J. C. STEVENS will include the above in his **SALE** by **AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **TUESDAY NEXT**, October 3.

On view morning of Sale, and Catalogues had.

Wednesday Next.

15,000 **EARLY WHITE ROMAN HYACINTHS**, **WHITE ITALIAN HYACINTHS**, **Paper White Narcissus**, **Lilium candidum**, and other **Forcing Bulbs** from France. Consignment of **Dracenas**, **Aralias**, **Ficus elastica**, &c., **Lilium Harrisii**, **Pancratiums**, **Amaryllis**, a new Fern, **Carnations**, **Pinks**, **Picotees**, choice **Liliums**, **Garden Seats** and **Barrows**, &c.

MR. J. C. STEVENS will include the above in his **SALE** by **AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY NEXT**, October 4.

On view morning of Sale, and catalogues had.

Bulb Sales.—Birmingham.

MESSRS. JAMES AND BAXTER (late **THOMAS B. JAMES**), beg to announce that they are holding their **SALES** of **DUTCH BULBS**, **LILUM HARRISI**, **White Roman HYACINTHS**, **Paper White**, &c., &c., **EVERY TUESDAY**, at half-past 11 o'clock A.M., at their Spacious Sale Rooms, 12, Bull Ring, Birmingham, usual number of lots 1300 to 1500.

The Weekly Sales of **Azaleas**, **Camellias**, **Ficus**, **Palms**, **Dracenas**, and other Plants from Belgium, commence in September, and continue until March next.

The Weekly Sales of **Roses**, **Fruit Trees**, **Ornamental Flowering Trees**, and **General Nursery Stock**, will commence in October, and continue until March.

Sales of **Orchids** are held every month.

Sales of **Cut Flowers** every Wednesday and Friday, at half-past 4 o'clock P.M.

Sales and Valuations of **Nursery Stock**, **Live** and **Dead Farming Stock**, &c., conducted in any part of the country, on reasonable terms.

All Catalogues post-free; goods purchased (no commission charged), and packed and forwarded.

JAMES AND BAXTER, Horticultural Auctioneers and Valuers (both many years with Messrs. Protheroe & Morris).

Tuesday Next.—Westerham, Kent.

Adjoining the Railway Station.—**ANNUAL UNRESERVED SALE** of **NURSERY STOCK**, ranging over some 60 acres, and including upwards of 150,000 **Ornamental Forest Trees** and **Shrubs**, also **Conifers**, **golden** and other **Retinospora**, **Laurels**, **Cupresses**, **Thuyas**, **Abies**, **Cedars**, &c.; 2,000 **Rhododendrons** of the best sorts to name. A large quantity of **Flowering Shrubs**, **Hardy climbing Plants**, **Herbaceous Plants**, 2,000 **standard** and **Pyramid Fruit Trees**, 1,200 **Cob Nuts**, and a very large and varied collection of all kinds of **Nursery Stock**, the whole being well-grown and in first class condition for removal.

MESSRS. BAXTER, PAYNE AND LEPPER will **SELL** by **AUCTION**, upon the Premises, "The Westerham Nurseries," on **TUESDAY**, October 3, 1893, and two following days, at 11 for 12 o'clock precisely each day, the above described well-grown **NURSERY STOCK**, including every description of **Ornamental Trees** and **Shrubs**, **Fruit Trees**, &c.; and divided into lots to suit both the trade and private buyers.

May be viewed, and Catalogues obtained upon the premises; and of **BAXTER, PAYNE, AND LEPPER**, Surveyors and Land Agents, Bromley and Beckenham, Kent, and 69, King William Street, E.C.

King's Acre Nurseries, near Hereford.

SALE of Several Acres of First-class **FRUIT TREES**, comprising over 20,000 **Standard**, **Pyramids**, and **Trained APPLES**, **PEARS**, **PLUMS**, **CHERRIES**, and others. **CONIFERS**, **FOREST TREES**, &c., which

MESSRS. ALEXANDER, DANIEL, SELFE and **CO.** will **SELL** by **AUCTION**, at the above Nurseries, on **TUESDAY**, **WEDNESDAY**, and **THURSDAY**, October 10, 11, and 12, punctually at 12 o'clock.

Catalogues may be obtained at the Nurseries, King's Acre; or of the Auctioneers, Bank Chambers, Corn Street, Bristol; and 34, Old Jewry, London, E.C.

Within No. 51, George Street, Edinburgh.

On **THURSDAY**, October 12, at 12 o'clock. **IMPORTANT SALE** of **ORCHIDS**, being the Entire, Unique, and Valuable Collection of Old-established Specimen Orchids belonging to James McKelvie, Esq., Haymarket.

MESSRS. LYON AND TURNBULL have been instructed to **SELL** the above Valuable Collection of **ORCHIDS**, including magnificent exhibition specimens of **Vandas**, **Cattleyas**, **Colognes**, **Laelias**, **Mastodallias**, **Maxillarias**, **Odontoglossums**, **Oncidiums**, and **Calanthes**. Also valuable **Greenhouse RHODODENDRONS**, including **McKelviei**, **Aucklandii**, **Countess of Dalkeith**, and **Walkerii**.

Catalogues on application. Gentlemen may obtain orders to see the plants before the Sale on application to the Auctioneers.

NURSERY FOR SALE.—An Old-established Nursery Business in the North of Scotland is for Sale as a going concern. Good reasons for giving up. This is a splendid opening for a practical man.

Full particulars on application to A. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.



THE COMING APPLE—BEAUTY OF BATH.

5,000 will be offered, with thousands of other **FRUIT TREES**.

MR. HORNE'S GREAT SALE OF FRUIT TREES AND BEDDED HOP SETS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will conduct the above **ANNUAL SALE**, on the Premises, Perry Hill, Cliffe, near Rochester, on **WEDNESDAY NEXT**, October 4. For particulars see Auction column.

Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

"Redlees," Isleworth, Middlesex.

CLEARANCE SALE.

TO PRIVATE BUYERS, **GARDENERS**, **FLORISTS**, AND OTHERS.

MR. WOODS has received instructions to **SELL** by **AUCTION**, on the Premises as above, on **SATURDAY**, September 30, 1893, at 1 o'clock, a choice assortment of **STOVE** and **GREENHOUSE PLANTS**, the contents of the various **GLASSHOUSES**; also **HARDY FERNS**, **HEATHS**, **CHRYSANTHEMUMS**, &c. Among the Plants may be mentioned, **Rare Orchids**, **Foliage** and **Tuberous Begonias**, **Show Pelargoniums**, **Fuchsias**, **Specimen Deutzias**, **Vallotas**, **Azaleas**, **Myrtles**, **Specimen Camellias**, **Cyclamen**, **Agapanthus**, **Geraniums** in variety, **Crotons**, **Dracenas**, **Cannas**, **Palms**, **Carnations**, &c.

May be viewed day preceding and morning of Sale, and Catalogues had at the "George" and "Northumberland Arms," Isleworth; of Messrs. **SKEWES-COX, NASH AND CO.** Solicitors, 8, Lancaster Place, Strand, London, and Richmond, Surrey; and of **MR. WOODS**, Auctioneer and Estate Agent, Hounslow.

N.B.—The Noble **RESIDENCE**, Stabling for 20 Horses, Grounds and Park-like Meadows, in all about 17 Acres, to be **LET** or **SOLD**; terms of the Auctioneer.

Re HOPWOOD & SONS, NURSERYMEN, SEEDSMEN, and FLORISTS. CHELTENHAM.

FOR IMMEDIATE SALE.

UNDER DEED OF ASSIGNMENT.

TENDERS will be **RECEIVED** for the following Lots:—

LOT 1.—The Stock at Prestbury (nearly 7 Acres in extent), consisting of many thousands of choice **Fruit Trees**, **Forest Trees**, **Rose Trees**, **Privet**, &c.

LOT 2.—For Plants in a range of **Greenhouses**, and the Nursery Grounds at Belle Vue Nursery.

LOT 3.—For **Greenhouses**, **Hot-water Apparatus**, **Carts**, **Tools**, a strong Horse, &c., at Belle Vue Nursery.

LOT 4.—The Good-will of the Old-established Business carried on over half a century. Turn-over between Two and Three Thousand. Cash takings about £1 per day.

JOHN CORMELL, Trustee,

Belle Vue Nursery, Cheltenham.

TO BE SOLD.—The **BUSINESS** of a **NURSERYMAN**, **SEEDSMAN**, **High-class Florist**, and **Land-scape Gardener**, consisting of The Home Nursery and two branches, all situated in first-class positions, and having wide-spread and large connections, the turnover being about £8000 per annum, and making a handsome profit. The nurseries are crammed with an immense and valuable stock in splendid condition, and afford an opportunity rarely met with of acquiring a well-established and thoroughly genuine concern. Income for the whole about £3000. The fullest investigation.—Apply, in first instance, C. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO SEEDSMEN.—To be **DISPOSED OF**, in consequence of the death of the proprietor, an old established **FARM** and **GARDEN SEED BUSINESS**, with a wide connection in a good Market Town in the Midlands, and on Two Railways. This is a rare chance for a desirable purchaser that does not often occur.—Apply to **SEEDSMAN**, Messrs. Hurst & Son, 152, Houndsditch, London, E.

TO LET, a **SMALL NURSERY**, with six Greenhouses, all heated with Hotwater. Stock at valuation. Good connection of Jobbing Work. Low Rent.—Apply, Shakspeare Nursery, Shakspeare Road, Herne Hill, S.E.

THE

"WOODFORD" COLLECTION OF ORCHIDS

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), LIMITED, beg to announce that they have just purchased the entire—

LARGE AND SPLENDID COLLECTION OF ORCHIDS, FORMED BY **JAMES D. COX, Esq.**, OF "WOODFORD," BROUGHTY FERRY, N.B., Who is, for the present, giving up the cultivation of Orchids.

The Company are issuing **Descriptive and Priced Catalogues of the Collection**, which are **Now Ready**

The **COLLECTION** will be on **SALE** from **TUESDAY MORNING NEXT**, October 3. Inspection is earnestly invited.

The **Collection** is one of the **Finest** which the **Company** have yet offered.

The Plants are in grand health, and **MANY SPLENDID SPECIMENS**, as well as **NUMEROUS RARE** and **FINE VARIETIES**, are included in each section; it is not necessary to give particulars here, as the fullest particulars are given in the Catalogues, which can be had post-free on application to the Company.

THE VINEYARD & NURSERIES, GARSTON, NEAR LIVERPOOL.

Fruiting Vines.

H. LANE AND SON have a large Stock of strong **FRUITING BLACK HAMBURGH** and other sorts to offer, well ripened, similar to those they have taken many **First Prizes** and **Medals** for, at **London**, **Edinburgh**, **Manchester**, &c.

The Nurseries, Berkhamsted, Herts.

CARNATIONS.—Miss Joliffe Improved, best winter-blooming, flesh pink, fine bushy plants in 5-inch pots; also **La Neige**, best white. Price on application. Germania, best yellow, in 60's, fit for 48's or planting-out at once, 30s. per 100. Cash with order.

CRANE AND CLARKE, The Nurseries, March, Cambs.

"LOADSTONE" AND HELEN JULLIET, the Lady Florists (Regd.), offer **SPRING BEDDING PLANTS**, specially transplanted and prepared to stand the Winter:—**Blood-Red** and **Dwarf Golden Wallflowers**, **Pink Silene**, **Myosotis dissitiflora**, **Daisies**, **Snagdragons**, **Foxgloves**, **Scabious**, **Pansies**, **Sweet Williams**, **Violas** (in 4 colours), **Canterbury Bells**, in pure white, new rose, and mixed colours, also the **Cup-and-Saucer** varieties, all per dozen, 1s. 3d.; per 100, 8s.; grand plants, Iceland Poppies (orange and yellow), Peacock, Umbrosium, Bride, Mikado, Shirley, Croceum, Scarlet, Orientale, all at 1s. 3d. per doz.; 100 for 7s. 6d.; or 500 plants, carriage paid, £1 7s. 6d. Address—

School of Gardening, Hemel Hempstead, Herts.

EXHIBITION.

HEREFORDSHIRE FRUIT and CHRYS-
ANTHEMUM SOCIETY.

The second ANNUAL SHOW will be held in the SHIRE HALL, HEREFORD, on WEDNESDAY, THURSDAY, and FRIDAY, November 15, 16, and 17, 1893, when amongst others, the following prizes will be offered in the open classes:—Collection of Apples Culinary and Dessert, 100 dishes, 1st prize, 100s. or Cup; 2nd, 40s.; 3rd, 20s. Collection of Peas, 24 dishes, 1st prize 50s.; 2nd, 20s.; 3rd, 10s. Several other open classes. Chrysanthemums, group of, in pots, 1st prize 100s. or Cup; 2nd, 40s.; 3rd, 20s., and other open classes. Schedule of prizes and all particulars on application to the Hon. Sec., Mr. JOHN OUGH, 7, Clifford Street, Hereford.

LEEDS PAXTON SOCIETY'S CHRYS-
ANTHEMUM SHOW.

TOWN HALL, LEEDS, TUESDAY and WEDNESDAY, November 7 and 8, 1893.
For Entry Forms and Schedules apply to the Hon. Secretary, W. HOLBROOK, St. Ann's Villas, Headingley, Leeds.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.VINES.—Fine Gros Colmar and Black
Alicante Vines in No. 12 and 16 pots. Price moderate.
THE MANAGER, Calcot Gardens, near Reading.MYATT'S PROLIFIC POTATOS for Sale.
True. 1½ Riddle; 5s. per cwt.; 80s. 2 ton lots.
G. F. YOUNG, Swinhead Abbey, Boston.BORDER CARNATION (Ketton Rose), the
best kind for bedding, very hardy, and flowers abundantly. The trade supplied. Also, other good hardy kinds.
LIST free from
W. H. DIVERS, Ketton Hall Gardens, Stamford.10,000 GENISTAS, in small 60's, at 8s.
per 100; £3 16s. per 1000. Cash with Order.
T. BALDWIN AND SON, Edith Nurseries, Burchall Road, Leyton.CARNATIONS.—Strong plants in 60's; Ger-
mania, Mrs. Reynolds Hole, Pride of Penshurst, Elsie (syn. Pope's Seedling, Sachrisa), 4s. per dozen.
J. GORE, Florist, Polegate, Sussex.SEEDLING FERNS.—P. tremula, Ad.
Williamsii, Ad. pedatum, Gymnogramma Alstoni, 5s. 6d. per 100. Smaller ditto, Lomaria gibba, P. hastata, Blechnum brasiliense, B. glandulosum, 4s. per 100; from stores, good stuff. Packed and sent by Parcel-post free. Cash with order.
H. KUPPERS, Florist, Billesdon, Leicesters.BULBS at WHOLESALE PRICES.—Nar-
cissus Pheasant's Eye, 2s.; Ornatus, 3s. 6d.; Double White, 3s. 6d.; Crocuses, Mixed, 1s. 3d.; Bethlehem Stars, 1s. 6d.; Scillas, 1s. 6d. per 100, free. Monstrous Roots. Approval.
D'ALCORN AND CO., Spalding. Established, 1882.VIOLETS.—Marie Louise, Comte Brazza,
Double Neapolitan, Grand Clumps ready, Winter-blooming, 12s. per dozen; Czar, 6s. per dozen.
"LOADSTONE" and HELEN JULLIET, School of Gardening, Hemel Hempstead, Herts.FICUS ELASTICA, in 6-inch pots (strong,
3 to 4 feet), 30s. per 100, in 5-inch pots, 15s. £5 per 100; Aralia Sieboldii, in 5-inch pots, 8s. per dozen, £3 per 100; A-plegium bulbiferum, in 5-inch pots, 7s. per dozen, £2 10s. per 100; Phoenix reclinata, in 6-inch pots, strong, 15s. per dozen; Kentias, in 60's, 40s. per 100; Phoenix reclinata, 10s. per 100; Pteris major, 15s. per 100; P. cretica cristata (true), 12s. per 100; P. argyrea, 12s. per 100; Carex japonica variegata, in 60's, 20s. per 100. Terms cash.
G. LANGE, Hampton, Middlesex.CARNATIONS and ARUMS.—Carnation
"Miss Proctor," colour, yellow ground, flaked with bright cardinal. This variety is quite hardy and distinct from all others up to date. Four certificates have been awarded to the above; good plants 1s. each, 9s. per dozen. PICOTEE, Mrs. Wilson, pure white, with a red edge. Two certificates awarded to this variety. Good plants 9d. each, 6s. per dozen; other good varieties 6s. per dozen, 30s. per 100. Arums, good strong plants, 4s. per dozen, 20s. per 100. On application to R. W. PROCTOR, Rose Grower and Nurseryman, Chesterfield.Old-Fashioned and Garden Roses.
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1000 CYPRIPEDIUM INSIGNE, fine healthy grown plants, in bud and sheath—
In 48's, 5s. to 7s. 6d. each.
In 32's, 7s. 6d. to 10s. 6d. each.
In 24's, 10s. 6d. to 15s. each.

50 Specimen ASPIDISTRAS, with from four to six dozen leaves, 15s. to £1 each.

24 Specimen flowering STEPHANOTIS FLORIBUNDA, in No. 8 pots, trained, 2 guineas each.

LATANIA BORBONICA, Specimen, eight to ten leaves, 20s. to 30s. each.

Thousands of splendidly-grown PTERIS and MAIDENHAIR FERNS in variety, from 6s. to 8s. per dozen; own selection, 8s. per dozen.

Cumberland Park Nurseries, Willesden Junction, London, N.W.

Important to Mushroom Growers.

CUTHBERT'S SPECIALITE MUSHROOM SPAWN. Always alike; most productive. Hundreds of testimonials. Per bushel, 5s.
R. AND G. CUTHBERT, Seed, Bulb, and Plant Merchant, Southgate, N. Established 1877.

ALL GOODS DELIVERED FREE
on board, London, Antwerp, Rotterdam. £ s. d.
LILUM HARRISII, 5—7 in. circ., per 1000 bulbs. 6 5 0
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TUBEROSUS, Pearl, select 4—8½ in. " " 1 10 0
" " seconds, 3—4 in. " " 1 2 6
Prices for GLADIOLUS, &c., on application.
F. W. O. SCHMITZ AND CO., Jersey City, N.J., U.S.A.

GRAND NEW CARNATION,
"EMPRESS OF INDIA."

Now Ready, extra strong plants, in large 60's, of this grand New Scarlet Carnation, the largest, best, and most hardy of its class, plants in the open still having quantities of fine blooms open. Price, 30s. per dozen. Special Offer to trade on application.

JOHN COBBAN AND SON, Fruiterers and Seedsmen, Market Place, Rotherham.

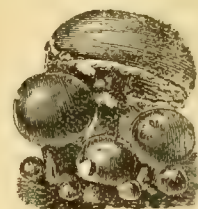
FERNS! FERNS!!—Trade.—Great Annual Sale. Surplus Stock. 200,000 Stove and Greenhouse in 2½-inch pots, 11s. per 100, 200 for 20s.; 10 best selling sorts in 5-inch pots, 6s. 6d. per dozen; strong seedling, 4s. 6d. per 100. Large A. cuneatum, very fine tops, value in fronds, 6s. and 8s. per dozen. Cyperus, Aralias, Grevilleas, Solanums, 6s. per doz.; Palms, Ficus, and Dracenas, 1s. each. P. tremula, and A. cuneatum for making large plants quickly, 16s. and 20s. per 100. Packed free and put on rail for cash with order.—J. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

DECORATIVE PALMS.

KENTIAS, PHENIX, SEAFORTHIA, CHAMEROPS, LATANIAS, &c., &c.
Young PALMS, in small Pots, for Growing On; Or, Carefully assorted selections of well-grown PALMS FOR IMMEDIATE EFFECT.

In all sizes and at all prices, from 9s. per doz. upwards.

DICKSONS NURSERIES, CHESTER.



CUTBUSH'S MILL-
TRACK MUSHROOM SPAWN.
—Everyone can readily grow Mushrooms, and by using this Spawn will ensure success. All growers speak in high praise of the quality. Numerous Testimonials. None genuine unless in sealed packages, and printed cultural directions enclosed with our signature attached.

Price, 6s. per bushel, 1s. extra for package; or, 1s. per cake, free per Parcel Post.

WM. CUTBUSH & SON, Nurserymen and Seed Merchants, Highgate Nurseries, London, N., and Barnet, Herts.

FERNS a SPECIALITY.

A magnificent stock at remarkably low prices.

SPECIAL AUTUMN LIST NOW READY.
FREE ON APPLICATION.ILLUSTRATED CATALOGUE of FERNS
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FERN NURSERIES, SALE, near MANCHESTER.



For Market and Private Growers.

ORNAMENTAL TREES, SHRUBS, ETC.
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J. CHEAL & SONS
Crawley, Sussex.

United Horticultural Benefit and Provident
SOCIETY.

THE ANNUAL DINNER will take place on
TUESDAY, October 10, at 6 P.M., at the CANNON
STREET HOTEL, E.C. P. C. M. VEITCH, Esq., of Exeter,
will preside. Tickets, 5s. each, of
W. COLLINS, 9, Martindale Road, Balham, S.W.

ORCHIDS.—New and rare species a special
feature. Catalogue forwarded post-free on application.
SEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich,
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DOUBLE NEAPOLITAN VIOLETS.—
Magnificent, fine large clumps, just coming into flower.
Will flower all the winter; 12s. per dozen; 2nd size, 9s. per
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prices. Cash.—FOREMAN, Stanmore Park Gardens, Stanmore.

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25, 1s.; 100, 3s. 6d.; 1000, 25s.
Carriage paid for Cash with Order.
Descriptive LIST free.

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PALMS, FERNS, &c.—FERNS in Variety.—
ARALIAS and CYPERUS NATALENSIS in 48's, 6s. per
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PALMS, fine stuff, in large 60's, 5s. per dozen; FERNS and
CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of
Plants in season supplied at lowest possible prices. Well
packed in or out of pots. Free on rail. Cash with order.
LANE AND MARTIN, 227, Brixton Road, London, S.W.

50,000 EUONYMUS, Green and Golden,
all splendid bushy plants.—GREEN: 12 in.
to 15 in., at 30s. per 100; 15 in. to 18 in., at 40s. per 100;
18 in. to 21 in., at 55s. per 100; 21 in. to 24 in., at 75s. per 100;
30 in. to 49 in., at special prices.
GOLDEN: 5 in. to 12 in., at 3s. to 8s. per doz. Cash with
order.
J. J. CLARK, Goldstone, Brighton.

Kent: the Garden of England.

GROW ONLY the BEST STRAWBERRIES,
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GEORGE BUNYARD AND CO.'S NEW LIST.
A Chester Gardener says:—"In all my long experience I
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Extra fine plants in little pots and runners ready shortly.
The Old Nurseries, Maidstone.

CATTLEYA REGNELLI (SCHILLERIANA),
LÆLIA HARPOPHYLLA.

LÆLIA PINELLI VARS.

LÆLIA PURPURATA, compact masses.

HUGH LOW & CO.

Have just received large importations of the
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CLAPTON NURSERY, LONDON, N.E.

Dutch and other Bulbs.

E. H. KRELAGE AND SON'S superior
Dutch, Cape, and all other Exotic Bulbs and Plants,
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see New Illustrated Descriptive BULB CATALOGUE (463),
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the Royal Netherlands Court, and to H.R.H. the Grand Duke
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Paradise Stock. We have 70,000 to select from, and shall
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TRAINED TREES A SPECIALTY.

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CHILWELL NURSERIES, NOTTS.
ESTABLISHED 1782.

ANDERSON'S RUSSIA MATS
Are the Best and Cheapest.

RAFFIA and CUBA BAST. GREENHOUSE SHADINGS.
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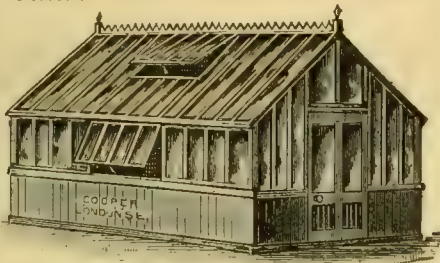
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AMATEUR GREENHOUSES.

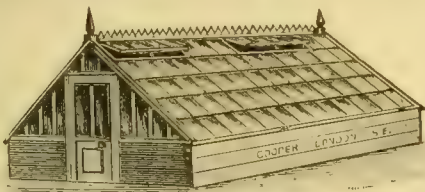


This illustration is an exact copy of my Amateur Span-roofed Greenhouses, which are made of well-seasoned red deal. Complete with ventilators, Irons for opening, Staging, Glass, &c. Made in Sections, so that they may be erected by any gardener or handy-man in a few hours. Simply screwed together. Any size made. For Price of Lean-to, see List.

See List.				Delivered and Erected Complete within			
Long.Wide. High.				On Rail.		20 mile.	
7ft.	5ft.	7ft.	4ft.	to eaves...	£2 16 0	£4 5 0	
8ft.	5ft.	7ft.	4ft.	" ...	3 10 0	5 0 0	
9ft.	6ft.	7ft.	3in. 4ft.	" ...	4 0 0	5 10 0	
10ft.	7ft.	7ft.	6in. 4ft. 6in.	" ...	5 0 0	6 15 0	
12ft.	8ft.	8ft.	5ft.	" ...	6 0 0	8 0 0	
15ft.	10ft.	8ft.	6in. 5ft.	" ...	8 10 0	12 0 0	
20ft.	10ft.	9ft.	5ft. 6in.	" ...	12 0 0	16 0 0	
25ft.	10ft.	9ft.	5ft. 6in.	" ...	17 0 0	22 0 0	
30ft.	10ft.	9ft.	5ft. 6in.	" ...	30 0 0	40 0 0	
100ft.	10ft.	9ft.	5ft. 6in.	" ...	50 0 0	70 0 0	

Deduct 10 per cent. if required for brickwork.

AMATEUR FORCING HOUSE.



The utility of this house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request, but almost hitherto unknown. Send for List, post free.

CUCUMBER FRAMES.



These frames are 24 in. high at back, 13 in. at front, and are made of 1 in. tongued and grooved boards. The lights are 2 in. thick, glazed with good 15oz glass, nailed and bedded in good oil putty, painted three coats, handles to sashes, and put on rail at the following sizes and prices: One-light Frames, 4ft. by 3ft., 18s.; ditto, 6ft. by 4ft., £1 10s.; Two-light Frames, 6ft. by 4ft., £1 12s.; ditto, 8ft. by 6ft., £2 14s.; Three-light Frames, 12ft. by 6ft., £3 15s. For other sizes and prices see Illustrated Lists, free. SEND FOR LIST, POST-FREE.

POULTRY HOUSES.



Well and substantially constructed, warranted waterproof, complete with door, ventilator, and slide, from 20s.

5ft. by 4ft.	25s.
6ft. by 4ft.	30s.
7ft. by 5ft.	35s.
9ft. by 6ft.	42s.

SEND FOR LIST.

GARDEN HAND FRAMES.

These Frames will be found to be very useful for protecting plants, seeds, slips, and cuttings during the spring, which, if left uncovered would probably fall victims to the extreme cold so prevalent in this country during that season.

Size	Frames only
12in. by 1 in.	6s. 6d. each
14in. by 1in.	7 6 "
16in. by 1in.	8 0 "
18in. by 1in.	9 0 "
20in. by 2in.	10 0 "
22in. by 2in.	11 0 "
24in. by 2in.	12 0 "

SPECIAL NOTICE

Owing to the great increasing demand for my Amateur Houses every autumn, and having to refuse so many orders last season through customers not booking their orders early, but leaving them until the frost sets in, I have decided to allow a Special Discount of 5 per cent. off all goods as below to all customers booking their Orders previous to Oct. 28. Please note that on no account will orders be booked after that date under full prices.

Illustrated List Post-free.

GLASS. — GLASS. — GLASS.

Free on Rail in London. Packages included.

15-oz., 100ft.	21-oz., 100ft.
4ths ... 8s. 6d.	11s. 6d.
3rds ... 9s. 6d.	12s. 6d.

10,000 BOXES TO SELECT FROM.

The following is a list of sizes always in stock:—8 by 6, 9 by 7, 10 by 8, 12 by 8, 12 by 9, 13 by 9, 11 by 10, 13 by 10, 13 by 10, 14 by 10, 13 by 11, 18 by 11, 14 by 12, 16 by 12, 18 by 12, 20 by 12, 17 by 13, 20 by 13, 16 by 14, 18 by 14, 20 by 14, 22 by 14, 20 by 15, 20 by 16, 24 by 16, 20 by 18, 24 by 18. Glass cut to any size required: 15 oz. 1½d. per foot; 21-oz., 2½d. per foot. Large sizes, for cutting up, 15-oz., per case, 300 feet, 25s.; 21-oz., per case, 200 feet, 25s. All glass is cut and packed in own warehouses. Quality of glass and careful packing guaranteed. Special quotations given for large quantities. Have cash estimate from me before ordering elsewhere. PUTTY, prepared especially for Greenhouse work: best, 7s. per cwt.; 2nds, 6s. 6d. per cwt.; packages, 6d. per cwt. PAINT, quality guaranteed: 7 lb., 3s.; 14 lb., 5s. 6d.; 28 lb., 10s.; 56 lb., 18s.; per cwt. 34s. Glass, Special Line, 1250 200ft. boxes, best 21-oz., 9 by 7, 16s. per box, to clear.

MANURES, PEATS, SAND, FERTILISERS, ETC.

1 lb. tins Fertiliser, 4d.	£0 3 6 per dozen.
1 lb. tins Sunshade, 6d.	" 0 5 0 "
Special offer to Nurserymen and the Trade:—144 tins Fertiliser and 144 tins Sunshade	3 0 0
Cocoa-nut Fibre Refuse	0 0 8 per sack.
Silver Sand, coarse or fine (2 cwt.)	0 2 3 "
Best Orchid Peat	0 3 0 "
" Rhododendron Peat	0 1 6 "
" Brown Fibrous Peat	0 1 6 "
" General Peat...	0 1 6 "
" Loose Peat	0 1 6 "
" Surrey Loam	0 1 6 "
General Potting Compost	0 1 3 "
Fern Compost	0 1 3 "
Bulb Compost	0 1 3 "
Leaf Soil, well decayed	0 1 6 "
Pure Wood Charcoal	0 2 6 "
Best Peruvian Guano	0 0 6 per tin.
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Fertiliser for Farming and Market Gardening (in 2 cwt. sacks)	0 10 0 per sack.
Worm Destroyer	0 0 6 per tin.
Insecticide	0 0 6 "
Tobacco Paper, 6d. per lb.	2 5 0 per cwt.
Wonderful New Mushroom Spawn	0 2 6 per bush.

All sacks and bags free. Send for List, post free.

HORTICULTURAL TIMBER.

WELL-SEASONED RED and YELLOW DEAL.

SASHBARS, 1½ in., 3s.; 2 in., 3s. 9d.; 2½ in., 5s.; 3 in., 6s. 6d. per 100 ft. run.

MATCH BOARDS, ½, 5s. 6d. per square; 1 in., 9s. 6d. per square.

FLOOR BOARDS, 1 in., 9s. per square.

FEATHER EDGE BOARDS, ½ by 6, 6s. 6d. per square. DEALS, 3 by 11, Yellow, 4d.; 3 by 9, 3½d.; 3 by 7, 2d.; 2½ by 7, 1½d.; 2 by 7, 1¼d.; 2 by 6, 1d.

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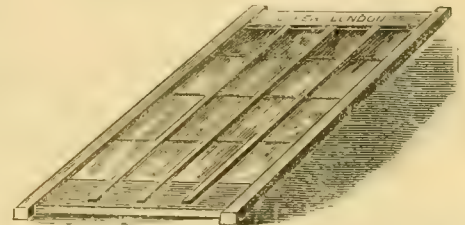
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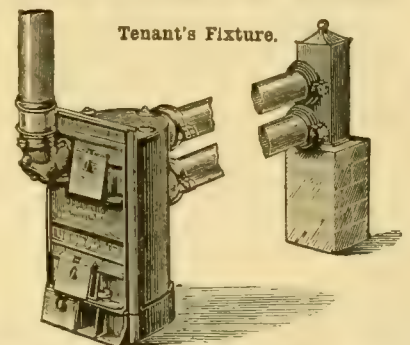


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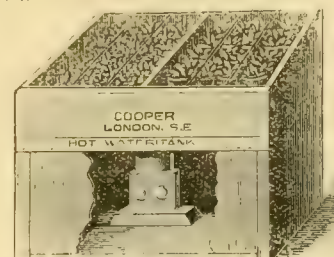
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No. 2	heats House 12 by 8ft.	consumes 1½ pt. of oil in 10 hrs., £1 16s.; extra for gas 3s.
No. 3	heats House 15 by 10ft.	consumes 2 pt. of oil in 10 hrs., £2 12s.; extra for gas 5s.
No. 4	heats House 20 by 10ft.	consumes 2 pt. of oil in 10 hrs., £2 16s.; extra for gas 6s.
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Four First Class Certificates, awarded at the International Horticultural Exhibition, July, 1892.
Three Awards of Merit, by the Royal Hort. Soc., London, July, 1892.
First Prize for Collection of Begonias, Royal Bot. Soc., April 26, 1893.
Silver Medal for Collection of Begonias, Royal Bot. Soc., April 26, 1893.

Special Award of the Highest Merit, by the Glasgow and West of Scotland Horticultural Society, September, 1892.
First Prize, for Single Begonias, Crystal Palace, May 11, 1893.
First Prize, for Double Begonias, Crystal Palace, May 11, 1893.
Extra Prize, for Group of Begonias, Crystal Palace, May 11, 1893.
Silver-gilt Banksian Medal, Temple Show, May 25, 1893.
FIRST PRIZE, Gardening and Forestry Exhibition, July 1, 1893.
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 30, 1893.

J. B. GUILLOT AND HIS ROSES.

THE kindly sympathetic notice of this good and successful rosarian, from the pen of Mr. W. Paul, which appeared in your issue of September 16, seems to mark the present time as suitable to draw attention to the debt which all rosarians owe him for the numerous beautiful varieties he has added to our gardens, and it is a somewhat remarkable fact that in the year of his death two of these Roses have been exhibited in a character which they have, perhaps, never shown before. Horace Vernet among hybrid perpetuals, and Madame Cusin amongst Teas at the great Show of the National Rose Society, having obtained Silver Medals for the best Rose in the nursery and amateur classes.

It is now many years since I first made the acquaintance of Guillot; his aged father was then alive, so that we used to call him young Guillot, how many years may be judged from the fact that it was before he had sent out La France, which I saw then in his garden, and of which he was justly proud, so proud that he would not part with it on any consideration, even for a sum which to a Frenchman seemed temptation itself. There are some of his Roses which have appeared and gone out of cultivation, but I think fewer than those of any other raiser, for he was always chary as to those he sent out, and it was seldom indeed that he made mistakes, and his gardens in the Chemin des Pins may well be regarded as classic ground by all lovers of the Rose. The following may be regarded as the cream of his contributions to our catalogue for the garden:—

HYBRID PERPETUALS.

Horace Vernet.—This magnificent Rose, which in some seasons (as in the present) has appeared so often in such excellent form, combines all those qualities which make a flower valuable, whether for the exhibitor or the simple lover of Roses. Its beautifully imbricated form and brilliant crimson colour with dark shadings, make it always acceptable. Unfortunately, it has one drawback, it is a bad grower, and is apt to break the heart of a young amateur; he has gathered a fine bloom from it, and naturally looks forward to a better supply next season, but the plant dwindles, and if it does not die outright, presents a miserable appearance. When a Rose is described as best on maidens, it affords a pretty strong evidence on the weakness of its constitution, and that the young amateur had better leave it alone.

La France.—This Rose has had a curious history, I do not believe that Guillot himself knew what its parentage was; he believed that it was of a mixed race, but for a great number of years it was numbered amongst the hybrid perpetuals, both in French and English catalogues, but upon the advent of some Roses which

were called hybrid Teas, and which were the result of a cross between hybrid perpetuals and Teas, La France suddenly changed its place, and is now numbered amongst hybrid Teas. So, that where a prize is offered for hybrid perpetuals alone, it cannot be exhibited; where, however, the prize is for a certain number of varieties without distinction of class, it is admissible, as it is also in that new and perplexing class which the National Rose Society has established—hybrid Teas. M. Guillot was quite right in forecasting the popularity of this Rose, for its profuse blooming and delicious fragrance have made it an universal favourite. In one instance, however, he has been wrong: he expected it to be the parent of a new race, but as yet not a single seedling from it has appeared; we have had sports from it in Augustine Guinoisseau and Duchess of Albany, the former a white, and the latter a rosy-pink sport. It may be that this season, so favourable for the production of the seed-vessels, may change this condition of things.

TEAS.

Catherine Mermet.—This lovely Rose requires but little description, its exquisite shape and fresh colour are alike welcome in the garden and in the exhibition stand; it is one of those Roses, too, which is inclined to sport, and in The Bride which comes to us from America, we have a most formidable rival to the mother flower.

Waban, which is a dark sport, is not yet sufficiently known, but if it attains the character which has been given to it by some growers, is likely to be a valuable addition to our exhibition flowers.

Comtesse de Nadaillac.—If he had raised no other Rose than this, he would have been entitled to the gratitude of all rosarians. It is impossible to describe its colour, which is a combination of peach, apricot, and coppery-rose, or to exaggerate its beauty. It is, in my estimation, the *crème de la crème* of Tea Roses; who has ever stood before a stand of it as exhibited by Mr. Geo. Prince but has acknowledged that for refinement and delicacy of tint it has no rival. With some persons it is a delicate grower, and does best on a half-standard; it amply repays the protection of a wall, and two plants of it which I have so placed always gratify me with blooms of deep colour, and I have seen in some places shoots as thick as one's finger, from plants in the open.

Etoile de Lyon.—A vigorous grower, and a large and full flower—so much so that it requires a warm season for it to open properly; this year, therefore, has well suited it. It has also the bad property of becoming cleft (that is, with two centres instead of one), which, of course, detracts from its beauty; however, it is so fine when it does come right that it will not do to dispense with it.

Madame Cusin.—Never, perhaps, since this flower was sent out in 1881, has it been seen in such perfection as when exhibited by the Rev. A. Foster Melliar at the National Rose Society's metropolitan exhibition this year; in size, form, and freshness of colour, I do not think it has ever been equalled, and it required but little discrimination to decide that it was the best Tea in the show. Indeed, some were inclined to say it was the best Tea Rose ever exhibited; this is a very wide expression of praise, and I do not think I can quite endorse it, when I remember some of the grand Nadaillacs exhibited by Mr. Prince—but, without question, it was a splendid flower.

Madame de Watteville.—A very beautiful Rose, but I do not think it can be called a very hardy one. I know that in many places it suffered severely during the winters of 1891-92. The colour is very exquisite, creamy-white, with rose on each of the petals. When caught in its proper form, it is like Marie Van Houtte, most exquisite, but lacks the constitution of that fine flower.

Madame Hoste.—One of the newest of the raiser's additions to this class, and this year has fully estab-

lished its merits; it has been everywhere exhibited in good form, and has more than once obtained the Silver Medal for the best Rose. At one time it was thought to be too thin for exhibition, but this year has proved that was fallacious. It is certainly better for disbudding, and of all autumn-blooming Teas it is certainly one of the freest; and this season, which has been so favourable for autumn flowers, has seen it produced in great quantities.

Madame Hippolyte Jamin.—I do not consider this by any means equal to others of Guillot's raising. It is very full, and is inclined in wet seasons to get gummed together; but in dry seasons, especially in the autumn, it is a useful flower. It is very vigorous in growth, and a good constitution.

Madame Margottin.—This flower, which was at one time much sought after, is, I fancy, declining in favour, for certainly one does not see it so frequently on the exhibition table; its difficulty in opening may perhaps account for this, and as there are other flowers of the same colour which have not this defect, it is probable that ere long it will be numbered amongst the "has beens."

Ernest Metz.—One of the latest of Guillot's seedlings, seems likely to uphold his character as a seedling raiser. The colour is a bright salmony-rose, globular in shape, but some doubts have been expressed as to its constancy. For three years special prizes have been offered for it at the National; in two of those it was not competed for, and in the present year but two stands were shown. However, like most new Roses, it has probably been overworked, and this defect of uncertainty may be obviated in future seasons.

Gloire Lyonnaise.—About nine or ten years ago, considerable sensation was excited in the Rose world by the news that Guillot was about to send out a yellow hybrid perpetual. Visions floated before their eyes of some Charles Lefebvre with the golden-yellow of *Maréchal Niel*; but alas! they were doomed to disappointment, for *Gloire Lyonnaise* is but a hybrid Tea, with the very faintest *souçon* of yellow in it; it is not an exhibition Rose, but an excellent one for the garden, and has been rightly placed in the catalogue of the National Rose Society amongst hybrid Teas suitable for garden purposes.

Such are my views of Guillot's flowers, and I rather fancy they will be in accord with most rosarians'. *Wild Rose.*

RAINFALL AND DRAINAGE AT ROTHAMSTED.

ALMOST from the commencement of the agricultural experiments at Rothamsted, Hertfordshire—that is, for a period of more than forty years, the rainfall has been measured in a gauge of one-thousandth of an acre area. Three drain-gauges also of one-thousandth of an acre each, for the determination of the quantity and chemical composition of the water percolating respectively through 20 inches, 40 inches, and 60 inches depth of soil (with its subsoil in natural state of consolidation) were constructed in the year 1870.

The nitrogen existing as nitric acid, sometimes in other forms, and also some other constituents, are, and for some time past have been, determined periodically in the Rothamsted laboratory, in both the rain and the various drainage waters. The memoranda for the fiftieth year of the experiments, which have recently been issued under an entirely new and greatly improved form, give us much valuable information, not previously published, upon the above subject.

The rainfall at Rothamsted during fifteen harvest years, 1877-8 to 1891-2, has varied from a minimum of 21.36 inches to a maximum of 41.05 inches; the average for the total harvest year being 29.81 inches.

The distribution of rainfall, taken in four monthly periods, has been, from September 1 to December 31, 11.22 inches; from January 1 to April 30, 7.82 inches; and from May 1 to August 31, 10.77 inches.

The annual drainage during the same fifteen harvest years, from the drain-gauge of 60 inches deep of heavy loam with clay subsoil, and uncropped,

has ranged from a minimum of 6.50 inches to 24.38 inches, equal to a yearly average of 14.83 inches.

The evaporation from the bare soil averaged 4.54 inches from September to December, 2.74 inches from January to April, and 7.70 inches from May to August. When rain-water falls upon a soil it dissolves some of the ingredients which the soil contains, and these dissolved matters finally appear to a greater or less extent in the drainage-water. With reference to the large amounts of loss of plant-food, which the Rothamsted investigations show, it is stated by Lawes and Gilbert, that probably not more than an average of about 5 lb. of nitrogen would be contributed annually per acre from the atmosphere in rain and the minor deposits, exclusive of any condensation by the soil. Moreover, the soil of the drain-gauges has been unmanured since 1868, but being exposed to the access of air from below as well as from above, the oxidation of the nitrogenous matters within the soil may be more active than in similar soil in its natural condition. Also, the soil has been without any vegetation to arrest the nitric acid formed.

Under these conditions we find the quantity of nitrogen as nitrates annually removed from the soil by the drainage-water, during fifteen harvest years, 1877-8 to 1891-2, has varied from a minimum of 20.19 lb. to a maximum of 60.94 lb. per acre, equal to a loss of 129 lb. and 389 lb. respectively of ordinary nitrate of soda per acre. The average loss for the total period of fifteen years being 34.71 lb., equal to 222 lb. of nitrate soda per acre. The distribution of this loss was 109 lb. from September to December, 66 lb. from January to April, and 47 lb. from May to August.

These facts show that the quantity of nitrates removed from the soil in the autumn drainage-waters is greater than at any other period of the year, the drainage-waters being most concentrated at this season, and the drainage also usually abundant. This excess during autumn is found to be most marked in the drainage from the shallowest soil. The effect of a heavy and continuous rain in removing exceptionally large quantities of nitrates from the soil is strikingly shown by the results obtained in October of 1891. In this month 6.76 inches of rain fell at Rothamsted, and the quantity of nitrogen as nitrates in the drainage-water from the 20-inch gauge amounted to 13.28 lb. per acre, equal to a loss of nearly 85 lb. of ordinary nitrate of soda per acre. For the reasons already given, the loss of nitrates by drainage may be considerably less in an ordinary agricultural fallow than in the Rothamsted drain-gauge experiments, yet the loss must clearly be a very serious one whenever the season is wet.

Bare fallow, therefore, can only be thoroughly successful in a dry climate. Under such circumstances, the active production of nitrates which takes place in a fallow will doubtless greatly increase the fertility of the soil for the succeeding crop. *J. J. Willis, Harpenden.*

CIGARETTE SMOKING IN PERSIA.

THE British Consul, reporting on the trade of Rish, under the head of Tobacco, says:—"It is a noteworthy fact that the introduction of this plant into the northern provinces of Persia, has had the effect of introducing the general practice of cigarette-smoking into the country. This practice has, indeed, become so general, that even the lowest peasant now goes about with a cigarette-case and cigarette-paper, and makes his own 'smokes.' Until quite recent years, only kalians or hubble-bubbles, and chibouks or long wooden pipes, with red-clay bowls, were used, the former generally by the higher classes, and the latter by the peasantry, labourers, and mule-drivers, in fact, people constantly on the move, and requiring a more portable apparatus. The chibouk has now been, to a very great extent, replaced by cigarettes, the tobacco for this purpose being cheaper than the Shiraz tambekee, which is required for kalian and chibouk."

CASIMIROA EDULIS.

We give in our present issue an illustration of this little-known fruit, which has ripened in the garden of Cavalier Hanbury, of La Mortola, near Ventimiglia. The fruit is similar in form to that of *Diospyros Kaki*, but of a yellow colour, measuring 5 centimètres across. This is, we believe, the first time that the fruit has been produced in the open air in Europe, but in 1877 (October 13) we had the

to produce injurious effects would be much larger than anyone is likely to be able to avail himself of. The tree is a native of N. W. Mexico.

THE SEED TRADE.

THE FOREIGN GRASS AND CLOVER-SEED CROPS.—It would appear that in the seed-growing districts

pecurus pratensis (Meadow Foxtail) is satisfactory, and the quality of the seed good, but prices are advancing. The sweet-scented Vernal-grass (*Anthoxanthum*) show a small crop, and prices are certain to be high. The Brome-grasses (*Bromus*) have yielded much better than was at one time expected. Crested Dog's-tail (*Cynosurus cristatus*) is being delivered in small quantities, and prices are higher than last season. The German and French



FIG. 63.—CASIMIROA EDULIS.

Ripe fruit from the Garden of Cav. T. Hanbury, La Mortola. The sections show the fruit cut through vertically and transversely; one seed is also shown in section.

opportunity of figuring the fruit as it was ripened in a tropical house in the garden of Mr. Mitchell Henry, at Kylemore, Galway. Mr. Henry's gardener considered it the best tropical fruit with which he was acquainted. The best account of the tree is given in Seemann's *Botany of the Herald*, an extract from which was given in our columns at the time above mentioned. Though the fruit is edible, it is said to promote sleep, and the seeds are said to be poisonous. We imagine, however, from its Rutaceous affinities, that the quantity of fruit or seed required

of Darmstadt the abnormal drought has been as severely felt as in England, which has operated to prevent the full development of all grass and Clover crops; some have yielded very sparingly, and others scarcely a crop at all. Of *Agrostis*, the crop has failed entirely in Germany; in the United States it is a medium one, and as consumers will be dependent upon this for a supply, prices are sure to rule high. *Aira flexuosa* and *A. caespitosa* (Hair-grasses), are in very small quantities, and will probably be required for sowing. The crop of Alo-

Crops of Rough Cocksfoot Grass (*Dactylis glomerata*) are not now much prized in the market, and the main supply is derived elsewhere. America has a small yield, discoloured and impure, and New Zealand will have to furnish the bulk of what can be obtained; the reports from there, however, are not particularly encouraging, and a considerable portion of the yield has been destroyed by fire. Prices are therefore advancing. The Fescue Grasses suffered a good deal during the winter, and the yield is only about one-fourth of the usual crop, and high prices

prevail in their case. The fine-leaved Sheep's Fescue (*F. ovina tenuifolia*) was not only seriously damaged by the drought; but in some cases burned out, and very high prices rule. The Meadow Fescue is the smallest crop registered for several years, and as America also has harvested only about one-third of an average crop, seeds are certain to be very dear. *Holcus lanatus* (Meadow Soft Grass) is only one-quarter of an average crop, but very fine quality. Timothy (*Phleum pratense*) is, as far as the American yield is concerned, a satisfactory crop, both as to quantity and quality; the German crop has not yet been realised. Both the Wood and the Smooth Meadow Grasses (*Poa nemoralis* and *P. pratensis*) show quite small crops. The Rough Meadow Grass (*P. trivialis*) is a very good crop indeed; the colour and purity of the seed excellent. The Canary Grass (*Phalaris arundinacea*) has yielded scarcely any crop this year.

While it is a little early to report fully upon the Clover crops, but so far as information has come to hand, the crop of Sainfoin in France is said to be an entire failure, while the yield is good in Moravia and Hungary. Trefoil appears everywhere to have failed. Fine samples of white Clover have come in from Bohemia and Moravia, but no positive knowledge as to the probable extent of the crops. Of Alsike Clover, the German produce is insignificant, but reports from America are favourable. The crop of *Trifolium incarnatum* in Italy being better than was expected, prices are beginning to decline. In reference to red Clover, it may be said that in July and the beginning of August the prospect of the yield in the United States was very favourable, and prices have become slightly reduced. The yield in both Bohemia and Hungary, at one time appearing to be small, has greatly improved, and Alsace, the Palatinate, and other Rhenish districts, promise, contrary to former expectations, a pretty fair yield. There is an improvement in the prospects of the yield of Lucerne.

ELECTRIC ILLUMINATION AND VEGETATION.

At a recent meeting of the Physical Society of Geneva, a paper was read by Professor R. Chodat on the "Action of Electric Light on Vegetation." At the commencement, the Professor said that several observers had noticed the beneficial effect atmospheric electricity had on vegetation. Nollet declared that electricity favourably influences the germination of seeds. Many thought researches on this subject a waste of time, but the results obtained by patient investigation were too important to be ignored.

To find out whether germination was really quicker in plants under the influence of electricity, the Professor made the following experiment:—A certain number of Bean seeds were placed in water until the roots became visible. Fourteen seeds in all were used; they were divided into two lots, each of these being identically the same as regards weight, size, and appearance. Each lot was placed in a tub containing sawdust, and each was regularly watered, while the conditions of heat and light for each were identical. One of the tubs was then placed in communication with a Holtz machine, and was electrified, the first day for 40 minutes, the second for 2½ hours, the third day 3½ hours, the fifth day for 4 hours, and the following days for 3 hours, up to the eleventh day. On the fourth day the leaves began to appear in the electrified tub, while no sign of a leaf was apparent in the other. On the fifth day the difference was still more marked, for the leaves and stems began to take an upright position, though no activity was manifest in the second tub. On the seventh day the non-electrified seeds began to put forth buds. This experiment confirms the opinion which attributes to electricity some action in forcing the germination of the seed, and in quickening its development.

A second series of experiments was conducted to ascertain the influence of electricity on the Oxalis. Some specimens of this plant were placed in con-

nection with the electrical machine, while some others were placed away from it. When the former lot had been electrified, they were covered with a wooden box, which completely shut out the light. The second lot was covered in like manner. At the end of twenty minutes the two pots were examined; the electrified Oxalis had kept their normal position, while the other plants were in a drooping condition. The same effect has been tried on this plant at the end of the day. When twilight came on, one pot was electrified, while the other was not. Soon the difference became apparent, for the plants in the first pot remained awake till long after the other had closed its buds. It is an interesting fact that the sensitive plant is not affected by these electrical influences.

This, then, is the substance of the Professor's interesting paper, which should attract the attention of all those interested in the subject of the application of electricity to the vegetable kingdom. H. C. F.

REARING OF CITRUS AND DECIDUOUS TREES FROM SEED.

(Continued from p. 151.)

THE OLIVE.—The propagation of the Olive from seeds is perhaps the most difficult, for various reasons. The pits [seeds] are quite hard, and sometimes require two years after sowing to germinate. In Italy, the growers soak the pits in a potash solution for two or three days, and it is said that when thus treated they germinate the same year in which they are sown. The practice in California is to reproduce from cuttings, and no particular attention has been paid to raising the plants from seed. It is claimed by French and Italian authors that raising the plants from seed is the most natural system, and the one producing the most healthy and robust plants; but they admit that trees grown in this way require more time to bear fruit than those propagated from cuttings. Trees grown from seed seldom produce fruit in less than eight years, and furthermore, they must be budded or grafted, and they must be at least four or five years old before this operation can be performed.

The majority of the pits of the Mission Olive do not contain kernels, therefore it is advisable to use those from any other variety having kernels. It is not necessary that the Olive (from which the pits are taken) be one of those possessing high qualities for pickles or oil, but it is important that the tree be of a thrifty sort. The fruits of the Redding Picholine contain perfect kernels, but the tree being a poor grower, it is not advisable to use this seed, as they may produce plants of a still smaller habit. The seeds having been freed from the pulp, are washed in water—containing some lye or ashes—to free them of the oil adhering to them; they are then washed in clear water, and after drying in the shade are mixed with sand and put into boxes, to be kept till the following spring and then planted. The sowing is done in February or March. The use of lye is necessary to render the shell of the pit a little less compact, in order that they may be penetrated by moisture. The lye roughens the shell, and thus gives access to humidity.

As Olive seeds do not all germinate the first year of sowing, it is advisable not to destroy the seed-bed until the end of the third year. The pits often continue to germinate in certain quantities for over two years.

The pits may be advantageously split, not by using a hammer, but always an iron vice. The longer part of the pit is placed between the jaws of the vice, and by closing tightly the screw, the shell is split. It is not necessary to take out the kernel; on the contrary, it is better to leave it in the cracked shell.

The seeds are planted in March in ordinary seed-boxes, with the bottoms perforated to admit of good drainage. The box is then filled with fine sandy loam to within 3 inches of the top, then half an inch of sand, and on top of this the kernels are spread, and covered with 2 inches of sand.

The boxes should be kept moist, and shaded for awhile. This method obviates the necessity of soaking the pits in lye, to deprive them of their oily coverings, and a person can easily obtain some 600 or more kernels in a day. The plants are left to grow two years in the seed-beds or boxes; they can then be transplanted in the nursery, and when large enough can be budded or grafted.

ORANGE.

The Orange is very easily propagated from seed. For this purpose, windfalls, "culls," &c., are used, but should be thoroughly ripe. The fruit is put into barrels to rot, and the seed is washed out. A coarse sieve is used, the decayed pulp passing through the wire, leaving only the seed in the sieve. The seed should not be allowed to get dry after being taken from the fruit, and as soon as possible after being separated from the pulp should either be sown, or mixed with sand and kept in boxes in readiness for planting. The seed can be sown in boxes or in seed-beds, which should be well prepared with fine soil or mould. It is planted thickly and broadcast, and covered with fine earth from 1 to 2 inches. The best time to plant Orange seed is in March and April. If planted before March they have to remain in the damp cold ground till the time of germination, and many decay. Orange seeds do not germinate until spring; it is better, therefore, to plant the seed when the ground becomes warm, and all danger of frosts is over. The seed-beds should be kept moist, but not too wet. The season following, the plants are transplanted in the nursery. The plants are taken up and assorted into sizes; the larger ones are planted, and the small and slender ones are set in shallow boxes, and kept another year—they being small, quite slender, and very delicate, are scorched by the sun when planted in the open ground. The plants are set in the rows 12 to 18 inches apart, and the rows 6 feet apart; this gives ample room for cultivation, and for balling the trees when digging them, when the time for transplanting to orchard comes. Planting close in the nursery tends to make slender trees. After the plants have grown a year in the nursery they may be trimmed, provided they have made good growth, say, in February, and left to be budded.

PEACH.

Peach-pits are perhaps the easiest to germinate, and almost any person can make a success in raising seedlings by observing a few of the most important rules applied to their propagation. The best seed, or pits, are from seedling trees, or, as they are termed, "natural fruit." The practice in California is to buy the pits from driers and canneries, collected from all sorts and sources. The result is, that a very large amount of pits is required, as only about one-third (or even less) germinate. The cause of this is, that pits from such fruit are generally defective, and many of the varieties sought for by the drier and canneries are subject to "splitting" at the pit, which do not germinate, the germ rotting after the pits are planted. There are many varieties of California seedlings having perfect seeds, but as the driers and canneries do not separate them, the grower must take his chances in obtaining good seeds from such sources.

Pits from seedlings, or natural fruit, are always the best; they are not subject to splitting at the pit, and nearly all germinate, and the plants become the most thrifty stocks. It is contended, and justly so, that the longevity of the tree is dependent in a great measure upon the healthy condition of the seed.

The seed of seedlings, or natural fruit, is more vigorous, and most certain to germinate, and there can be no doubt that the trees will live longer when grown under such conditions. The union of the two halves, or valves, of the pits of seedling fruit is very close and tenacious, while in pits of budded fruit it is often slight and imperfect. The kernels of pits from natural fruit are generally quite hard, close, and nutty, while in those of budded fruit they are often defective in form, and the two halves frequently separate in handling. The author is not aware of any orchard where trees of natural fruit are maintained

for seed, and as the cultivation of the Peach, principally of fine sorts, has been so much extended, natural fruit is not easily obtained.

As the growers will have to produce most of their stocks in the future, it would not be amiss for them to plant seedling trees, and maintain them for the specific purpose of producing seed. The pits should not be allowed to dry after being taken from the fruit; they should immediately be put in sand, or layered in the ground, to prevent the germ from drying. Often pits are planted that have become dry, and do not germinate the year they are planted, but will sprout the season following, if allowed to remain in the ground undisturbed. Great care should also be observed that the pits are not put in large piles after being taken from the fruit, but they should be spread out, to allow the moisture among them to disappear. Often they are put in large piles, and left in those piles for several days, during which time fermentation of the acid from the fruit takes place, and the germ of the kernel destroyed.

There are several methods in use for layering the seed. The most common one is to layer the pits in a well-prepared seed-bed in the autumn. The place selected for the seed-bed should be in soil free from standing water during winter, as the seed is to remain until spring, and a superabundance of moisture tends to destroy their germinating power. The earth is spaded away for a depth of 6 to 8 inches, and the pits spread indiscriminately about 4 to 6 inches thick, and then the earth is spread on top, covering them for 4 to 6 inches. They are allowed to remain there until early spring. In some places they begin to germinate very early, and later in others.

Another method is by spreading the seed thickly about 4 to 6 inches deep, and then spading in about 6 inches deep. This completely mixes the seed, and it is covered in the soil. In either method the seed must remain in the ground until spring, when the shells are so far loosened that, in handling, they separate from the kernel. The kernels are at that time swollen, and many will be found sprouted. They are then ready to be planted in the nursery, and care is required in their handling, as carelessness will break the tender roots of those sprouted. The planting of the seed in permanent nursery rows in the autumn is also practised, but is not recommended, as the seed does not come up evenly, and prevents the ground from being worked after rains, &c. *J. J. Willis, Harpenden.*

(To be continued.)

A TRAVELLER'S NOTES.

(Continued from p. 299.)

TOKYO, August 27, 1892.—The chief florists' flower to be seen at present in Tokyo is the *Convolvulus*. With the Morning Glory, Japanese specialists have done much, being rewarded not only by obtaining the most distinct and varied tints, but also by producing forms of foliage different to any I have seen. Of leaves, I have made a collection. The variety in the form of the leaf is as great as in the colours of the flowers, and there is certainly a wider difference between the various forms and distortions of the former than between the various tints and shades of the latter. The pronounced colours, leaving for a moment the innumerable intermediate tints and shades apart, are rich and good, though they are not so many as might be expected. Rich violet, a glossy carmine, a good clear dark blue, white, and pink, are well-fixed colours, present in every collection; between these are every conceivable tint, from a dirty, repulsive-looking brown, to lilac, dull shot, brick-red, and sulphur. Spotted and mottled varieties are common, many are also edged with white, but striped kinds are almost unknown; I saw but one or two, and these I doubt being constant.

Leaving my quarters at 3.30 a.m. on the 19th inst., two sturdy men rolled me through the dark and deserted streets of Tokyo to Iriya, in the district of Shibuya. I sighed as I entered that district—rows of nurseries I had never entered nor heard of, notwithstanding the many dozens I had toiled through in the various suburbs of this great city.

Soon after 4 a.m. I alighted, and found myself in a narrow street, with high split Bamboo fences on

either side. As these were some 9 feet high, and it was still dark, the view was confined.

At 4.15 a nursery was opened. I entered, and drank straw-coloured water, a compound the Japanese affectionately call tea, and waited for the sun to rise. The household began to bestir itself—that is, its various members picked themselves up from the floor, rolled their quilts up, took down a couple of walls (composed of sliding screens), opening the entire house to the garden, came outside, dipped a hand in a tin receptacle containing about a pint of water, passed it carefully over the face, used coarse salt as a dentifrice, put themselves on the top of wooden clogs, bowed low and with dignity to the foreigner (who was a fairly cheap sight), and were ready for the day's work. Soon after 4 a.m., the sun began to rise and the folded buds of the *Convolvuli* to open. In an hour all the plants, placed for the night on the ground, were arranged, their pots sunk in porcelain jars of various designs, on wooden stages in a low shed. Some remaining over were so stood in blocks to form winding paths, and carefully shaded even at that early hour, for by 9 to 10 a.m., even with these precautions all are passed. As rapidly as the sun rose so rapidly did the flowers open. Visitors began to enter the nursery and exhibited much interest in the plants, many of the Japanese being "grands amateurs" of the *Convolvulus*.

The plants thus referred to were some 2 to 2½ feet high, trained round fine stiff straws such as we train our greenhouse creepers; they bore from one to eleven open flowers each, three, five, and seven being the averages, in price such plants varied from 4 to 8 sen.

A few large plants from 4 to 6 feet high were very fine. The single varieties are most common, though the double, to my mind less beautiful and beyond question less showy, are apparently more highly prized. In the latter there is considerably less variety, added to which the cup, unable to contain the large petaloid stamens frequently splits on one side, the delicate contour and symmetry of the flower being naturally destroyed.

I visited many nurseries, all side by side, streets of nurseries, a district of *Convolvulus*. All are much the same in every respect.

Besides the nurseries are enclosures containing groups of life-size figures with *Convolvulus* trained over them. These represent legends or historical events, the figures having the hair dressed, and the clothing (a framework covered with moss), cut in ancient fashion. The foreigner has the privilege of paying 2 sen. to enter here, though by the general giggle which invariably prevailed on my depositing the modest copper, I am convinced the Japs paid but one.

These little scenes are pretty, and carefully designed; the open *Convolvulus* flowers covering a naked sword, creeping up clothing, or arranged in a woman's hair, are very effective.

In one enclosure I literally lost myself in a large maze of split Bamboo some 8 feet high, covered by trailing *Convolvulus* in great variety.

A somewhat powerful scent of an artificial fertiliser pervaded all the nurseries. Neat glass bottles with labels and instructions in Chinese characters, on small stands contained the mixture, which was evidently freely applied. *James H. Veitch.*

(To be continued.)

HYBRIDISATION: ITS BENEFITS AND RESULTS TO ORNAMENTAL HORTICULTURE.*

(Concluded from p. 362.)

It has been generally accepted as an axiom that species with irregular flowers cross more readily than those with regular blossoms, and a superficial review of garden forms seems to confirm the opinion. But if we stand back, and allow Nature to speak for us here, she will utter a word of caution. Such genera as *Anemone*, *Ranunculus*, *Aquilegia*, *Dianthus*, *Hypericum*, *Vitis*, *Rosa*, *Geum*, *Rubus*, *Epilobium*, *Rumex*, *Salix*, *Narcissus*, and *Carex*, claim the large share of wild or natural hybrids. How, then, has the popular fancy originated? Simply, we believe, because irregular flowers always have a charm for cultivators that is only equalled by that of the finest regular species. Nature, we say, works most easily on regular forms, and this fact should be kept clearly in view for the future. During the past quarter-century irregular ones have been the favourites, the *Begonias* only being to a degree an exception. We

* Presented at the St. Louis Convention of the Society of American Florists by Dr. J. M. Macfarlane, Lansdowne, Pa.

do not wonder that it has been so, for irregular shape and showy or varied colouring usually go hand in hand, while the halo of light that Darwin and his successors have shed round their structural relations makes everyone desire to imitate the insect or humming bird, even though they do not claim the nectar for their trouble. We say, then, that among our showy regular flowers is a neglected field waiting to be cultivated.

No question probably in the whole range of our subject has been so debated, or had so many theories tacked on to it, as that which deals with the relations and resemblances of a hybrid to its parents. Though careful scientific students like Kölreuter, Gärtner, Naudin, Wichura, and Darwin favoured the view that hybrids are averagely intermediate between the parents, their eyes were open to the fact that the appearance of erratic and divergent forms occasionally seemed to weaken their position. Among florists the aim appeared often to be the obtaining of marvels rather than improvements, and so the many evenly-balanced crosses were less noticed than the divergent ones. Our gardening journals for decades presented articles in which the prepotency of the male parent was warmly supported by some—and we should judge by the majority, while that of the female was as keenly held by others. From extended observations that the writer has made, alike on living plants and on their minute tissues, he adheres to the view that an average hybrid is nearly intermediate between its parents. But it is to be remembered that, if individuals of the same species are built up of unstable and easily-decomposed chemical compounds, such will probably be truer of a hybrid, which may well be regarded as an attempt to make two diverse things balance as one. We need not be surprised, then, that so many freaks appear, some of which vibrate toward one parent, some toward the other.

Many of you may be inclined now to ask, "What remains to be done by the florist?" To that I answer, "Nearly everything," and I am persuaded this correctly expresses the true position of affairs to-day. My reasons for giving the answer are: First, that many of the finest-flowering plants are not yet in cultivation. Take, for example, the exotic field that lies most conveniently to ourselves, I mean central America, from New Mexico to the Argentine Republic. Though we are already indebted to that vast region for many of our best stove and greenhouse plants, its resources have scarcely been touched, except in the matter of Orchids. The same is true also of central Africa and Asia, of New Guinea, and many of the Pacific islands. Second, if we take as a criterion the work done among a few species during the last twenty years, the answer is a correct one. Third, if we consider the limited facilities, and the many hindrances, that have hitherto existed in conducting pollination experiments, the wonder is that so much has been done. The hybridiser has frequently to accept as parents not what he will but what he must. He may wish to cross two species from whose descendants he hopes for great things, but he has only one parent in flower. He hunts up his gardening friends to see if they can supply pollen of the other, or of some suitable parent. Happy is he if his search is successful.

In speaking as I have done of exotic plants, do not suppose that I discourage the culture of our native plants. Far too little attention has been given to them. But what, it may be asked, are the groups that deserve attention? We have a wide field to choose from, but I can only indicate a few. Some of our native and exotic *Polygalas* have a habit, floral structure, and colour, that entirely commend them. The St. John's Worts, or *Hypericums*, are now becoming favourites on rockwork and in herbaceous borders, and though natural hybrids have now and again been recorded, the pretty *H. Moserianum* × is an artificial one of recent date that all speak well of. Others should be forthcoming. It is surprising that so few of the *Malvaceæ* have hitherto been worked. Our native Swamp Mallow (*Hibiscus moscheutos*) is a noble

plant, and if crossed by a dwarf species, something very distinct might be gotten. Hibiscus, Abutilon, and Malva are all deserving of attention.

Pelargonium has hitherto ruled supreme among Geraniaceæ, but why is it that the genus *Oxalis*, cultivated for more than a century and including nearly two hundred and fifty species, has yielded only a few sports and still fewer hybrids? We venture to predict that were crossing and selection practiced here, the *Oxalis* would again become the favourites they once were. Equally true is it of *Impatiens*. Some fine species are now common, and, though annual, their rapid growth and wealth of blossom, puts them alongside the *Petunias* that have had so much favour shown them.

It has always seemed to the writer remarkable that the Pea order should have furnished so few crosses even under cultivation. Neglect may be the simple explanation. Already we have the gorgeous hybrids of *Brownea*, but the whole group is practically untouched. Skill and care will be needed in manipulating them. As already indicated, Nature shows us that the Rose order is an inviting one, but though fine hybrids of *Rosa*, *Geum*, and *Potentilla* are in cultivation, many herbaceous, shrubby and tree types remain to be taken in hand.

I should like to linger for a little over the *Onagraceæ*. The successes wrought on the continent with *Fuchsia* from the southern hemisphere should meet with a response from Americans in the species of *Ceanothus*, a genus that includes nearly a century of species, mostly western American. Such lovely evening Primroses as *C. Whitneyi*, *C. marginata*, and *C. cæspitosa* might have their rather short-lived flowers prolonged, their habit improved and their scent accentuated by union with *C. speciosa*. Or some of these again might be combined with the large yellow-flowered species. In aiming at such crosses our florists should not think only of the short twilight prevalent over many of the States, but of the longer one enjoyed in England and other European countries where these handsome plants are eagerly welcomed.

If any order deserves to be called American and *par excellence* St. Louisian, that is the *Cactaceæ*. The ease with which they can be crossed, and the small care needed in their cultivation, are most commendable qualities. If we may judge from past experience, the order lends itself well to the hybridizer, as is proved by the union not merely of *Cereus* and *Phyllocactus*, but of these again with *Epiphyllum*.

We spoke of central America as a source of supplies, but the wealth of such Rubiaceous genera as *Plumiera* would alone furnish material for extended work. The remarks made regarding the Pea order equally apply to the still larger group of the *Daisies* and *Sunflowers*. Many wild hybrids of the *Hawkweeds* and *Thistles* are known, but garden hybrids are rare. Yet see how much success has come to the Erfurt strains of *Zinnia*, and to the now time-honoured *Dahlia*. These are finger-posts to the florist in the truest sense. Did time permit, the *Heaths*, the *Milkweeds*, and many others might be noted, but one group cannot be passed over. All who have seen a well-grown specimen of *Bignonia venusta* clambering over some Florida home, or wreathing the roof girders of a hothouse further North, have stopped to admire. It and its allies are choice climbers. Blending of such hardy species as *B. capreolata* and *B. grandiflora* with other yellows and reds, also of *B. speciosa*, *B. purpurea*, and the lovely Mascarene *B. Telfairiæ*, would be noble work in itself.

Among *Monocotyledons* the *Orchids*, *Cannas*, *Hedychiums* and *Amaryllis* have been so prolific in blending, that we may safely take them as an index for all, and as a verification of my position that however much has been done the serious work and best fruits are yet before us.

In conclusion, let me suggest to some enterprising florist an idea that has often occurred to me. All leading commercial governments of the world are

now wisely establishing stations for rearing, propagating, and distributing economic and other plants. Would it not repay the efforts of private firms to do likewise? Mexico and central South America are rich fields that are daily becoming more accessible. Such a forward step might mark the commencement of fresh triumphs in the floral world.

THE ROSERY.

ROSE TURNER'S CRIMSON RAMBLER.

THE publication of a coloured representation of Mr. Charles Turner's new Polyantha Rose, affords an opportunity to call attention to the remarkable growth plants have made during this summer. When looking over a plantation of it, a few days ago, in the Langley Nursery, one could not but be struck with the free growth it displayed in the form of long sturdy shoots, just as a climber should do. But the characteristics of the foliage are so marked, that it appears to look more like a species than one of the Polyantha group, though its large and bold clusters of flowers follow the Polyantha type. As a summer-blooming Rose it is almost unrivalled, but unlike the varieties of the Polyantha section, it does not bloom in the autumn. It has all the appearance of an Evergreen variety, and scarcely a plant showed loss of leaves, while many of the hybrid perpetuals were nearly or quite leafless. Its proper method of treatment will probably be, cutting away the old wood as soon as it ceases to produce flowers, leaving the young wood unpruned to supply blossoms. Judging from the present appearance of the plants, it is a good hot weather Rose. Mr. Harry Turner states that it does best on its own roots or on the *Manetti*. Certificated by the Royal Horticultural Society about four years ago under the name of *The Engineer*, when shown by a nurseryman in Lincolnshire, its value appears to have escaped the notice of some of our Rose nurserymen until it came into the possession of Mr. C. Turner, who is distributing in the coming autumn. As a pillar Rose it will scarcely leave anything to be desired. Of its extreme hardihood there can be no doubt. *R. D.*

FLORISTS' FLOWERS.

TREATMENT OF CHRYSANTHEMUMS AT THE PRESENT SEASON.

A VERY few weeks from the present will witness the crowning point of the grower's labours in the expansion of the blossoms, but whether success will be as complete as could be desired, is a matter that time only can decide. The term autumn treatment applies from the time when the plants are housed, and it embraces most important details in the matter of culture, because errors made then may render abortive a whole season's labours. Let us first deal with plants grown for large blooms—that is, those which under the orthodox method are allowed to develop three blooms apiece. It is generally admitted that this method enables all the points which any variety may possess to be observed and judged according to the present standard of excellence, better than any other. These points of the standard of excellence are as follows:—Dealing with the more important Japanese section first, it may be said that bloom of large size without coarseness, with breadth of floret according to the peculiarity of each, depth and solidity of the whole bloom, and, lastly, colour. In no other manner of growing these plants is colour brought out so clearly as when large blooms are grown. In some varieties wide differences are shown in colour as compared with the same variety when grown for quantity of bloom, that the plants are scarcely recognisable as being of the same variety.

As a rule, the colour of the flowers on bush plants is lighter than that of flowers on other kinds of plants. With regard to incurved blooms the points of excellence are more numerous than in Japanese, there being not only size, depth, solidity, breadth of

petal, form, freshness, and colour peculiar to the Rose, but a finish also. Tyros in *Chrysanthemum* culture have to master all these various characteristics of a good bloom; and a bloom that is wanting in any of them cannot be considered worthy when judged, either in competition, or otherwise.

If the treatment of the plant up to the present moment has been right, there should be no difficulty in dovetailing, as it were, the autumn treatment into that to be afforded the plants during the summer. Placing the plants under glass protection should be performed forthwith, as frost may be expected, the slight showers of hail that fell lately being a pretty sure forerunner of cold weather. It is venturing too much to allow the plants to remain out-of-doors after the first sign of colour in the florets is noticed, as development cannot be retarded, and allowing the plants to be rained on, or exposed to heavy dew, is a sure cause of damping of the florets at a later date. Even in the case of plants whose buds were formed late, they are less safe than those whose buds are of the size of a large Hazel-nut, the former being soft, and consequently less able than those to withstand frost, and the plants should have some kind of temporary protection, such as is afforded by tiffany, &c. Before plants are taken indoors, the foliage should be examined for mildew, particularly the lower side of the leaves. The best remedy for mildew which I know of, is syringing the plants with a mixture made as follows, and thoroughly wetting every part with it:—Place 2 lb. of sulphur and 2 lb. of lime, that which has not been slaked, in ten quarts of water, and boil for twenty minutes, let it cool, and when settled, decant it. For syringing purposes, use two wine-glassfuls of the mixture to four gallons of clean cold water (soft, if possible), either laying the plants on their sides, or using a sprayer on the syringe.

The arranging of the plants in the house is a matter that will depend upon circumstances. No position suits them better than a vinery or Peach-house, from which the fruit is gathered, and the leaves of the permanent occupants have begun to drop. A span-roofed greenhouse is another capital place for them, but it is seldom that a house of this kind can be wholly set apart for them. A long sloping bank of the plants is the best in such a position, both for observation, convenience of watering, cleaning, &c., and the welfare of the plants. If exhibiting is the chief point to consider, it is wise to place the Japanese varieties in a house by themselves, so that more fireheat can be given them during the time the blooms are developing, as then the flowers are improved, the colours are brighter, and the florets come out cleaner and more regularly than is the case if no fire-heat is employed. In all cases place the plants near the light, and do not shade them from it by other plants, as the colours are then brought out more fully, and the flower-stems not drawn up weakly. The strength of the flower-stem may be taken as a good indication of what the flowers will be. For the first ten days or thereabouts after the plants are housed, those which do not show colour should be syringed daily at about 2 P.M. This treatment is rendered necessary by the sudden change the plants have to endure from the moistness of the night air outside to the dry atmosphere in the house. This syringing should, however, only be done in fine weather, and it acts as a stimulant to growth and flower development. Directly the florets commence to unfold, syringing should cease. Abundance of air should be afforded night and day, but diminishing the night supply as the blooms begin to open. In damp or dull weather the heating apparatus should be made warm, which will dissipate moisture. It is by allowing the air to become too cold during the night that the petals are rendered damp, and blooms are spoilt by strong sunlight if no shade be given. It is wise to lightly shade the blooms during the hottest part of the day, not only as a preventive against damping, but scalding, which is really worse than damping, as it sometimes destroys blooms in an undeveloped state. Continue to afford various kinds of manure to the plants, and depending

for a short time only upon any one kind. Some growers say that the stimulation of growth should cease when colour is first manifested in the bloom of any plant, but in my opinion the plants have to bear the greatest strain at that period, and need liberal support until the blooms are three parts expanded, when manuring should cease. Sulphate of ammonia is a capital stimulant, especially to late plants, if it be used with care. Half an ounce to one gallon of water, and increasing the quantity to three-quarters of an ounce, hastens the development of the plants.

As the flowers approach full development, watering the plants should be performed in the morning, so that the house may become dry before nightfall. Should mildew appear, dust affected parts with flowers-of-sulphur. Earwigs will be troublesome when blossoms are opening, nibbling the succulent petals by night, and should be trapped with pieces of Bean-stalks cut to 1 foot or 2 feet lengths, thrust in among the foliage, and into which the earwigs creep during the day, out of which they may be blown into scalding water, or otherwise destroyed. *E. Molyneux.*

CHRYSANTHEMUMS IN THE CONSERVATORY.

The style of arrangement in home decorations must, to a large extent, be regulated according to the formation of the house. In hardly two cases would it be possible to adopt the same methods, with the same effect as a resultant. The pernicious evil of over-crowding is oftentimes to be seen, the plants being positively stood pot upon pot in some cases. This ought not to be; it gives, for a time, a huge blaze of colour, it is true, but the mass of plants, being so dense, tends greatly to hasten the decay of the flowers when once any such symptoms are apparent, this being the case much sooner than it should be. It is easy to see how this is brought about; the mere fact of overcrowding causes the foliage to fade before its time, facilitated frequently by the presence of mildew, which would, in a measure, be held in check if the plants were not so thickly arranged, so as to exclude light and air. Furthermore, for want of air, any moisture settling upon the plants is not so easily dispelled, whilst the mass of soil must throw off a considerable amount of moisture. The waterings from time to time cause the ground upon which the plants are standing to be far too damp. These circumstances all occurring at this, the dullest season of the year, make the case even worse than it would be at other times. Some may think that it does not materially matter about the decay of the foliage, but losing this essential part of the plant militates against the proper development of the flowers. Another most important point is that of being able eventually to secure good cuttings. This cannot be done when the plants are stood so closely together, the result being obvious enough. Extremely tall plants are not nearly so useful in a general way for home use as those of medium height; what are termed "cut-backs" being in this respect much better, the flowers being brought more within the range of vision; plants 9 and 10 feet high are not in any sense desirable. There is now a mania for large or exhibition blooms; these, in their way, are all very well, but a few more of them on each plant, and not quite so many plants, will, for home uses, be found preferable. It is not the largest blooms which keep the best, particularly in such a foggy period as that which we are now likely to experience. If the number of blooms were about doubled, the utility and effect for home use would be further enhanced. Such plants as these could be stood much further apart, and yet make a capital display as a group.

For home use, also, more attention should be given to dwarfier plants of all sections, but more particularly those of the Japanese, which are not disposed to grow extra tall, and the Pompon section also. I have grown the Japanese thus, and noted their utility; a case in point to bear out the effect produced by these was given in the beautiful finish to the group shown by Messrs. Reid and Bornemann at one of the Crystal Palace Shows last season. This group was a pattern of what an exhibi-

tion group should be; too much crowded, it is true, for home uses, but exemplifying what decorative plants should be like. The dwarf plants in this instance were on the average not more than 21 inches in height; this kind of plant by striking late is to be had easily enough. In the conservatory, a central group where it is possible to arrange in that manner is very effective. Another good plan is to break up the plants into distinct colours or varieties, this I think will often create more interest in them, whereas a few plants stood thus are easily to be got at for any purpose. By intermixing a few of the hardier foliage plants with the Chrysanthemums, these being either tall ones or dwarf, the effect is further enhanced.

Tall Palms of comparatively slender growth, tall Cordylines, plants of *Grevillea robusta* on single stems, *Eulalia japonica* variegata, and *Jacaranda mimosaefolia*, would all do for intermixing, whilst around the outer margin by the use of dwarf foliage plants, no pots need be an eyesore. The too free use of sticks ought also to be guarded against when used in numbers, painted ones are bad enough, but white ones much more so—yet these latter are often seen. Another great advantage in arranging the plants in small groups is to be found in the interchange where necessary, early or mid-season kinds being taken out without so much labour, to make room for the later ones. In any case, it is not desirable to mix together early and late kinds. Decisive colours, that are always attractive, should be grown more largely than some others. For instance, *Avalanche* as a white, *Sunflower* as a yellow, *Val d'Andorre* as a red, *Madame de Levin* as a purplish-rose, and that new and promising variety of the same style of growth as *Avalanche*, viz., *Col. W. B. Smith*, of old gold-yellow colour. Others could be named, but these are quoted as being essential colours. The single varieties, as they become better known will, I am fully persuaded, play an important part in home arrangements. I noted last season what attraction they caused where shown in good condition. Trained plants, as so understood in exhibitions, only exhibit in home use so much time wasted in the work of training, which might in all probability have been much better expended in more direct cultural detail. *H.*

NURSERY NOTES.

FRUIT TREES AT LANGLEY.

ABOUT a mile and a half from Slough is the Langley fruit tree nursery and seed trial grounds of Messrs. Jas. Veitch & Sons, Chelsea. The ground was bought some ten or twelve years ago, and was used during the first few years almost exclusively as a trial ground for seeds; but a portion was reserved for the growth of fruit trees, and this has been yearly increased, until now they are grown in quantity, and perhaps it is the most important item in the nursery, the area of which is about 60 acres. A walk amongst the trees of different ages suffices to prove that a happy spot has been selected, and one that is well adapted to meet the requirements of the Apple, Pear, Plum, and Cherry. These four kinds are those most grown here; the Peaches and other such fruits are kept at Southfields, Fulham, as heretofore, where another collection of trees of Apple, Pear, Plum, &c., is likewise cultivated for sale. No district has had less water during this exceptionally dry season than the neighbourhood of Slough, and even the showers that were pretty general, and which intervened between what will be known as the first and second droughts, were denied this locality, Messrs. Veitch still giving March as the date when the last rain fell which was of any importance. Fortunately, the soil is of good stiff and fairly retentive character, and the result is not so disastrous as it would have been on a poorer soil. The only effect we could notice when visiting the place a few days ago was that the growth made during the year has been rather less than usual, but the trees are clean and healthy in appearance, and the wood thoroughly

well ripened and bearing finely-developed buds. Perhaps this unusual ripening of the wood will more than compensate for the lack in headway made this year. In fact, the trees here are affected by the season much as we have seen them in many situations, but they differ from some in that they have not been so infested with thrips and spider, which have been very troublesome in some gardens. Budding was completed about a fortnight before we were there, on first-rate looking stocks. About 7000 or 8000 Apples are put on the Paradise each season; the batch worked last year are in good condition, there are but few failures, but the length of growth is not normal. Those on the Crab have felt the drought in a less degree, and a batch of one-year-old pyramids from maidens cut down last winter look capital. All shapes in Apples and Pears are grown, from 7 feet standards to the horizontal cordon. The half-standard is a useful tree, and finds favour particularly with market growers who plant Currant and Gooseberry bushes between the orchard trees. Pears that will not succeed well on the Quince are doubly worked. A variety that is known to be a good one for the purpose is worked on to the Quince, and then the variety such as *Marie Louise*, and many others that require this treatment are worked on to the scion, and are thus after all on the Quince roots. They will succeed treated thus, although they dislike direct transference to the Quince. Cherries succeed with but little trouble, the district being one very suitable to them. All varieties and forms of training are cultivated, and the trained trees could not possibly present a better appearance than they do.

Plums also do well, and the whole of the fruits shown by the firm at the meetings of the Royal Horticultural Society and other exhibitions are grown here; and this applies also to the Apples, Pears, &c. In a long border round the land are about three hundred and fifty varieties of Apples in rows, containing three of each sort; and Cherries are kept to two of a variety, Plums to three of a variety. This is the trial-border, and from these trees is picked all the exhibition fruit, and from them are taken all the grafts, except in those cases where an exceptional number is required. Cherries and Plums were, of course, all gathered, and Apples and Pears also from the trees in the quarters, but there were many of the later kinds still hanging on the trees in the trial-border.

One of the first to be noticed was the old Northern Greening, which was in very fine condition, and exceptionally high-coloured for this variety. Reinette Thoin is the name of a variety that came from France two years ago, and is now fruiting for the first time; it may prove a good one, and is much like Northern Spy in appearance. Sandringham grows a perfect shape, is of good constitution, and is a first-class late Apple; its quality is such that it may be used for kitchen and table. There were some fair samples on some trees that had been moved in the spring. Lane's Prince Albert and Brownlee's Russet, two thoroughly good varieties, are still on the trees; the latter variety is a good grower, and bears very freely. Barnack Beauty was in very good condition, and the variety—a very pretty one—can be recommended as an exceptionally late keeper. Harvey's Wiltshire Defiance, Alfriston, Baumann's Red Winter Reinette, and King of Tomkin's County, were all deserving of notice. Belle du Havre is a good culinary Apple, that colours exceptionally high, and carries a thick bloom. Another highly-coloured one is Winter Colman, and it is of good size. A good heavy culinary Apple will be found in Watson's Dampling. A very large fruit is Roundway Magnum Bonum, an old variety, but yet one of the best dessert fruits, and should not be allowed to drop from any collection. Other really good Apples which were noticed are Scarlet Nonpareil, Herefordshire Pearmain, Northend Pippin, Sturmer Pippin, Warder's Pippin, Striped Beaufin or Beefing, and Bismarck—the latter a wonderful grower, exceptionally free-bearer, and good in every respect.

Of Pears the best were gathered, and we took notes

of but few. However, Beurré Clairgeau was in capital condition—always a handsome fruit. Gooseberries and Raspberries are well done at Langley, and the bushes are in capital condition.

THE PRODUCE OF ESSENTIAL OILS.

THE essential oil-yielding plants both in England and in France have had a rough time of it this year, owing to the long-continued drought in both countries. It is well-known that Mitcham Lavender and peppermint oils take the first place in the markets of the world; and the current price for good Mitcham Lavender oil is at the present time 70s. per pound. Very little oil it seems has been distilled this year, owing, in the first place, to the scanty nature of the crop, and in the second to the high prices the freshly-gathered plant realised in Covent Garden market. Peppermint oil also is a small crop, so far as the Mitcham produce is concerned; and the present quotation is 34s. per pound. Besides affecting the yield for the present season, it is found that the long drought has seriously affected the prospects for next year, as many of the young plants have been killed. It is reported also that the yield of Chamomile oil in the Mitcham district has been extremely scanty, there being only one field in which the flowers were even moderately good, and that field was protected by hedges from the sun. In the south of France the peppermint harvest was barely up to the average.

"The newly-distilled essential oils of Alpine flowers, Lavender, Spike, Thyme, &c., produced on the itinerant stills, are just beginning to arrive from the hills. Every year when these flowers attain maturity, a whole army of distillers, either working on their own account, or sent by one of the large perfumery firms, invades the Alps as far as the Piedmontese valleys to distill these Alpine oils, which are afterwards brought into commerce through Grasse and other districts, and of which the consumption is growing larger every year, partly it is said, because French Lavender and Spike are gradually superseding the Ceylon citronella oil in the soap industry.

"During the last few years Algeria, however, has commenced to enter into competition with the French Alps as a producer of these oils, and this year the Algerian output appears to be particularly large."

On the subject of the otto of Rose crop in Bulgaria, which has been generally reported as a partial failure, the *Chemist and Druggist*, upon whose authority the preceding notes are based, says, "There is no shadow of ground for assuming that the output of otto has been such that there is any justification whatever for the great advance in price which was sprung suddenly upon the trade a few weeks ago by a Constantinople firm, followed by other dealers." But that the unexpected rise is simply the result of a kind of combination, in which some principal foreign firms have taken the lead.

"A singular story is said to be current in Bulgaria, with regard to the adulteration of otto of Rose this season. Some years ago the importation of Palmarosa or Turkish Geranium oil, the favoured adulterant of the otto, was prohibited under stringent penalties. A few weeks ago a large consignment of so-called petroleum, addressed to a well-known Bulgarian firm of distillers, excited the suspicion of a Customs official, who, unfortunately for himself, forgot the good old maxim, that too much zeal is always misplaced. The consignment had already passed the frontier unchallenged—nay, unopened—but the official insisted upon overhauling it, when it turned out that the petroleum barrels contained nothing but Palmarosa oil. At this moment the unfortunate official was overtaken by his superior officer, who sharply reproved him for meddling with things he did not understand, had the barrels closed again, and sent off straightway in landaus to the distillery. The affair, unfortunately, got abroad, and it is now added that the superior officer had

received an intimation from a powerful government official, who also happens to be a partner in the otto of Rose factory, to which the 'petroleum' was consigned, that this shipment was expected to be passed through the frontier-post without any inconvenient inspection. The head man had dutifully done the part expected of him, but the underling was not let into the secret. He is not likely to be promoted now for some time."

This shows how things are managed in high places.

COLUTEA ARBORESCENS.

WHAT a capital shrub this one is for London gardens, if it be provided with a fair amount of good mould, and is not hemmed in and shaded with trees. Its pea-shaped yellow flowers appear in June, July, and August, and are succeeded by semi-transparent, bladder-like seed-pods, hence its popular name—Bladder Senna. It gets straggly when aged, but bears cutting in, breaking into profuse new growth the same year, if the operation be performed in the winter; and then the shrub needs to have much of the weaker shoots thinned out in May and June. The peduncles usually carry six flowers.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES.—Late Grapes which have to be cut from the Vines and kept in bottles of water till April or May should be thoroughly ripe about this time, otherwise the flavour will depart in great measure, and the fruit will shrivel after bottling, and long before the time when the fruit will come on to the table. It is the previous year's preparation which enables Grapes to be kept in good condition so late. I had Lady Downes' Seedling this year as late as August. To ripen Grapes at this season, fire-heat, with abundance of air on night and day are necessary, and some means should be taken to throw rain off the borders—this accelerating the ripening. Muscats which are not ripe should be freely exposed to light, and plenty of warmth allowed in the pipes. If any berries are stoneless or shanking, they should be removed. As soon as it is ascertained that the fruit is really ripe, the fire-heat should be reduced in degree gradually, till a minimum of 50° to 55° at night can safely be maintained; then keep the vinery as dry as possible, only using fire-heat to expel moisture, and keep an even temperature till the leaves fall, removing all those that fall without delay.

PEACHES AND NECTARINES.—Late fruits, such as Golden Eagle Peaches and Victoria Nectarines, should be assisted with fire-heat to ripen them; on standard bushes such sorts are slow to ripen in cool houses, especially in northern parts, a damp cold atmosphere renders the fruit insipid, and fit only for culinary purposes. Early trees may now require attention by partially removing the leaves from ripe shoots, but where the trees are not matured, some assistance with fire-heat, and air to mature the wood should be given. If the foliage clings lightly to the wood it should not be forced off; but large watery leaves may be cut in two (a practice I have adopted with success for many years on over-gross foliage), to allow sun and air to have full power on the buds. Trees which fruited early may be pruned, leaving young shoots to take the place of the old, and if systematic disbudding is resorted to, there will be but little pruning required, but an even succession of bearing-wood must be maintained, which should not be closer to each other than 3 to 6 inches, and they are better at the latter distance. No snags or dead-wood should be seen in a tree after it is pruned. Peaches grown as bushes are sometimes used for early fruiting, and should be well thinned out, retaining short, firm shoots and natural spurs. I do not follow the practice of painting our Peach trees with adhesive mixtures, but thoroughly wash the bark with Gishurst Compound-soap, cleaning all the wood-work, the glass, and the hot-water pipes with soft-soap and water; the soil is then shovelled from

the surface of borders, and is replaced with good loam mixed with bonemeal or Thomson's Vine Manure at the rate of a quart to each wheel-barrowful of the soil; and a fumigation with Tobacco-paper finishes the preparation for forcing. The structure remains open, dry and cool till December, when slow forcing is begun. The evils from cramming early Peach-houses with Chrysanthemums and other plants are often too apparent by bud-dropping and early appearance of black or green aphids.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

STOVE PLANTS.—Allamanda Hendersonii, Bignonia Chamberlainii, Bougainvilleas, Clerodendron splendens, Combretum purpureum, Dipladenia insignis, Hoya carnosa, Hexacentris mysorensis, Ipomoea Horsfieldi, Jasminum Sambac, Pergularia odoratissima, Stephanotis floribunda, Thunbergia grandiflora, and plants of similar climbing habit of growth, planted out in borders or in large pots, should now be well pruned, and the shoots thinned out, thus affording light and air to plants which may be growing underneath them. The remaining shoots and the stems and leaves should also be freed from insects. After pruning keep the plants rather dry at the roots so as not to afford any encouragement to grow during the winter. Pergularia odoratissima is a sweet-scented plant that has been very beautiful this autumn, and the best method to pursue with it is to cut the shoots or stems down to the ground in November, leaving only a few eyes above the roots, and keep it rather dry at the root till the spring, then with heat and water afforded, it will grow as fast as a Runner Bean, and produce large clusters of the most delicious scented flowers. Specimen plants in pots of Allamandas, Bougainvilleas, Clerodendrons, and other deciduous plants should gradually be brought to a state of rest by withholding water to a greater or lesser degree, and affording plenty of air to ripen the shoots, after which they may be placed in a cool stove or intermediate-house till required for starting in the spring. Ixoras, Crotons, and Palms should be kept free from scale and other insects, and receive careful watering and daily syringing; they are plants which must not be allowed to get dry at the roots. Gardenias and Eucharis amazonica, where flowers in long succession are required, should have a liberal application of a good plant-food, and be grown in a warm, moist temperature.

GLOXINIAS, GLORIOSAS, CALADIUMS, and early-flowering Gesneras should be stowed away to a cool part of the stove as soon as the foliage is withered or decayed. Shading should now be removed from roofs of glass-houses, and the temperature kept lower as daylight shortens; for the present, 65° to 70° by night, and 75° to 80° by day will suffice. Syringe the inmates twice daily during bright weather, and give air whenever it is safe to do so, especially avoiding codling at this season; and let each plant have as much space and light as can be afforded, to maintain a stiff sturdy growth.

HERBACEOUS CALCEOLARIAS sown last month should be pricked out into small 60-pots as soon as they are big enough to handle, and be kept in the shade under glass on the north side of a wall.

SEEDLING CYCLAMENS sown last month should be pricked out as soon as large enough, placing them afterwards on a shelf near the roof-glass in a warm greenhouse, affording a little shade from bright sunshine. Those in ferneries coming into flower will be the better for being placed on a low table or shelf in a house where they can be seen to advantage, and their requirements carefully attended to. A temperature of about 50° by night, and 55° to 60° by day, will suit them. The plants are much benefited by fertilising moss being placed over the crocks in the pots.

FUCHSIAS.—Specimen and decorative Fuchsias are best placed out-of-doors in a sheltered place for a few weeks at this season, so that the wood may get matured, a few degrees of frost not hurting them. About the end of the month of October they may be taken indoors, and stowed away in sheds for the winter.

TUBEROUS BEGONIAS in pots that have not done flowering, if the space they occupy is required for winter plants, should be placed in a dry, warm house to complete their growth, but they will afford blooms for cutting for some time longer. A late vinery

suits them when the mature stage is reached. Afterwards they may be shaken out, and placed in boxes in a dry shed, from which the frost is excluded.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

SEEDLING ORCHIDS.—Cypripediums that were potted in thumbs and other very small sizes in the spring, and which have grown with vigour, will be benefited by being repotted into larger pots. Seedling *Cattleyas* or *Lælias* do much better if kept growing, these small plants not requiring the rest afforded established or older plants. The same remarks apply to *Zygopetalum* and *Thunia* seedlings, and such plants should be kept in a growing state until they can without injury be placed at rest. Seedling *Dendrobiums*, on the other hand, are very different, as these will now be furnishing their new pseudobulbs, which must be carefully ripened before the plants are removed to cooler quarters for a short period, and even then it is not safe to dry them, as may safely be done with established plants; they should have instead a short rest in a cooler temperature, and less water afforded. These *Dendrobies* will then start with growth strongly at the new year. Seedlings raised from seed sown during the last three or four months will scarcely have grown sufficiently to warrant their being removed to cooler places, but they may be kept in the warm-house until the very smallest node is quite finished; even then, during the winter much care must be taken, or they soon perish.

LÆLIAS.—*Lælia purpurata*, L. p. *Russelliana*, L. p. *Bryana*, L. *tenebrosa*, L. *grandis*, L. *xanthina*, should be grown at the warmest part of the *Cattleya*-house, the 5° to 10° more warmth suiting them exactly. I make it a practice of arranging all the *Lælias* which make new growth during the winter months near together, so that they may receive more humidity and more water at the roots, than the other plants. All of these above-named *Lælias* are growing freely, and the new growths are pushing new roots from the base, so that any check from lack of water would cause a shortening of the growth. Keep a sharp look-out in the evening for cockroaches and woodlice, which are fond of the thick fleshy roots of these species. *Lælia Perrinii* just pushing up their flower-spikes should lack water until the flowering is past, and only then may gradually drying-off begin, and this should not be so severe as to cause shrivelling.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

APPLES AND PEARS: ROOT-PRUNING.—To ensure fruitfulness in vigorous young trees of Apples and Pears, which are annually pruned, root-pruning may be requisite, and the earlier this is performed the greater will be the chance of obtaining a crop of fruit from them next season, as the check thus received will cause the imperfectly-formed bloom-buds to become more prominent, and develop into such blooms as will be more likely to set fruit. It must not, however, be expected that the best results will be seen the first season after this operation. The check given to the trees by preventing them making so much gross growth, induces the formation of bloom-buds, and when once a good set of fruit is obtained, trees can be kept in a fruitful state by allowing them to bear crops according to their condition, vigorous or otherwise. From the late discussion in the *Gardeners' Chronicle*, it was evident to me that anyone advocating root-pruning ought to describe fully the manner of performing the work, and so prevent the possibility of anyone receiving the impression that all trees which have not begun to bear should be thus treated. I am now advocating this treatment for trees which, from want of space or otherwise, are annually pruned to keep them within certain limits, which, in some gardens of limited area, include standard as well as bush, pyramid, espalier, and trained trees, and which pruning encourages the making of wood, which must be counteracted by root-pruning. Orchard standards, after the foundation is formed, should not receive further pruning, and although many of the shy-bearing sorts, such as *Blenheim Pippin*, &c., may not begin to bear for a few years, I would not root-prune such. In every orchard a proportion of such free-bearing sorts as *Frogmore Prolific*, *Stirling Castle*, *Winter Hawthornden*, *Lane's Prince Albert*, *Northern Greening*, *Kerry Pippin*, &c., should be planted,

which may be depended upon to come early into bearing. The root-pruning of standard trees too, would increase the difficulty of keeping such trees in the perpendicular.

METHOD OF ROOT-PRUNING, ETC.—Trees which may have been planted eight or ten years, and have grown to large size, should be root-pruned on one side only now, completing the work next season. Take out a trench at about 6 feet from the stem; should the trees be growing on free stocks, the trench must be wide enough to allow tunnelling underneath, as far as the stem of the tree, to make sure that no tap-root is missed. Prune back all the roots to 4 feet from the stem, making clean cuts, which will the more readily heal over. For younger trees, the work may be performed at one operation, and pruned back to 3 feet from the stems, being particular, as in the older trees, that no tap-roots are missed. Trees on the Quince and Paradise stocks do not root so deeply as when on the Pear and Crab stocks; but it is advisable to go deep enough to be satisfied that no roots are missed. Where the trees are growing in old gardens, and near where fruit trees may have previously grown, a portion of the soil should be replaced with fresh loam, a supply of which should be in readiness, as before advised. For trees on the Pear or Crab stocks, place the new soil nearer the subsoil than in the case of the Quince or Paradise stocks, which root nearer the surface.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

GENERAL WORK.—The work of the kitchen garden at this season of the year, if not so exacting as at other seasons, needs the exercise of judgment and forethought, as the success of another season depends to a great extent on what is now done. Falling leaves give much trouble, and the seeds of weeds germinate freely, so that there will be much to do for some weeks to come in getting rid of these and keeping the garden in a tidy condition. On all favourable occasions the hoe should be at work amongst growing crops, especially small plants, for an hour or two of sunshine will do much in killing small weeds. Weeds should never be allowed to accumulate and choke small plants. By keeping the ground clean, it will absorb and retain warmth, so that any late crops will make more progress. Manure, too, should be wheeled on to vacant ground before the soil gets too wet, as such work can then be more easily performed.

LETTUCE.—Continue to plant out seedlings for winter use, and it will not now be necessary to allow quite so much space between the plants. If planted in rows at 1 foot apart, and in such a manner that temporary protection can be placed over the plants, do not allow the plants to become too large before transplanting them. It is now too late to sow Lettuce-seeds, except in a frame, and this is hardly worth the while, as plants can be easily raised in heat.

ENDIVE.—Continue to transplant these as the plants become large enough on to a light dry position, where they will be less affected by frost. Blanch such as are required for use, taking care not to have too many ready at one time, as they soon decay after blanching.

PARSLEY must not be forgotten, for the sooner it is planted where it may stand the winter the better will it be. It is usually in February and March that this useful herb runs short, so that, planted with a view of being reserved till then, must be kept as hardy as possible till frost sets in, when protection with spare lights should be afforded.

POTATOS that are still in the ground should be lifted without delay.

VEGETABLE-HOUSE.—Where such places exist, independent of a Mushroom-house, for forcing Rhubarb, Seakale, and for blanching Chicory, *Dandelion*, and the like, it should be got ready for use. It would be well if all large establishments had some such place, so as not to be obliged to open the door of the Mushroom-house in which the blanching is done, so often. A Mushroom-house should be divided into two parts, the outer one being used for preparing vegetables for the kitchen, and forming a sort of passage to the other, which would prevent the ingress of cold winds when the door was opened. A Mushroom-house should be provided with close-fitting windows and shutters.

MUSHROOM-HOUSE.—Fresh material for beds should now be got ready to replace those that are exhausted. As sun-heat declines, great care will be needed in preparing the material for fresh beds. There is not the fear at this season of the manure getting too dry before being used, which existed in the height of summer, but a too great heat in the bed after it is made up must be guarded against, as this sometimes causes a too dry and spongy condition of the materials, which are therefore of little value for producing Mushrooms.

THE FLOWER GARDEN.

By T. H. CRASP.

The sudden low temperature of the past few days has told more or less on the appearance of the flower garden, and with the tree leaves falling at this early date, much work will be entailed in sweeping them up. Lawns will be much improved by a dressing of soot and loamy soil (free from weed-seeds) in equal quantities, sprinkled over bare places; but if bad places are large and many, it will be advisable to wait till the spring, and then lightly dig or scratch the surface with a rake, and sow a mixture of the best lawn-grass, covering it very lightly with rich loamy soil, patting it with a piece of board, or rolling it.

BEDDING PLANTS.—These, where struck in the open ground, should now be taken up, and potted or boxed; in all cases using a poorish sandy loam and sufficient drainage materials, especially if the plants are to be kept in pits and other places where a low temperature prevails in the winter. Continue to pot in dry weather layers of *Carnations*, *Picotees*, and *Pinks*. Be careful not to allow soil to get into the axils of the leaves of these plants, it proving detrimental to the plants during the winter.

BULBS.—All the early varieties of Tulip, *Narcissus*, &c., will soon be commencing to grow in store, and if kept out of the ground much longer they will be greatly injured. When it is impossible to plant them where they are to bloom owing to the summer occupants still being in possession of the beds, it is a good plan to place them on an inch or two of light sandy soil, and cover them several inches deep with Cocoa-nut fibre or half-decayed leaf-mould. In this the bulbs will make roots, and as soon as the beds are ready they may be planted with all the soil that will adhere to the roots.

VIOLETS.—The Violet plants which were prepared for framework should now be taken up with good balls of earth, and planted in the frames forthwith, so that they may have time to get established before winter. Plant them in rows in light fairly-good soil within 6 inches of the glass, and which soil should be put on a hard, porous bottom that will not sink lower. Let no row of plants come under the bearings of the lights; and before planting them, cut off every side-shoot. Having finished the planting, afford the plants a thorough watering, and should the weather be bright, shade them for a few days, admitting but little air; afterwards expose them fully in fine weather, airing freely at all times, when there is no actual frost.

HERBACEOUS BORDERS are still bright with *Anemone japonica*, *Michaelmas Daisies*, *Liliums*, a few *Campanulas*, perennial *Sunflowers*, *Chrysanthemums*, *Liatris*, *Erigeron*, *Pentstemons*, &c., and the tidy keeping of these should receive attention. Pansy cuttings recently put in should be looked over, and decayed foliage removed. More cuttings may still be put in, as there is ample time for them to root and form plants by the spring. In the case of choice varieties of Pansy, it is a good plan to lift some of them carefully, and pot them in a rich light compost. They can be wintered in a cold frame in a dry, sheltered situation, if plunged to the rims in coal-ashes, and well-ventilated when the weather is mild. Dahlias requiring new labels should now be provided with them before frost destroys the blooms. This also applies to seedlings of desirable or marked character. Any offsets of *Auriculas* which may not have been ready earlier in the season, may now be removed, planting them carefully round the rim of a cutting-pot, and placing the pots in a situation free from all drip. Most evergreens may be moved or transplanted with safety at this season, and their propagation may be easily effected by layers or cuttings. New Ivy or Box-edgings may now be made.

EDITORIAL NOTICES.

ILLUSTRATIONS.—Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are particularly solicited; but the Editor cannot be responsible for loss or injury.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

FRIDAY, OCT. 6—Dundee Horticultural Society.

SALES.

MONDAY,	OCT. 2	Bulbs, at Protheroe & Morris' Rooms.
		Plants, at Protheroe & Morris' Rooms.
TUESDAY,	OCT. 3	Orchids, at Protheroe & Morris' Rooms.
		Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	OCT. 4	Unreserved Sale of well-grown Nursery Stock at the Windlesham Nurseries, Bagshot, by order of Mr. E. Mason, by Protheroe & Morris (two days).
		Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	OCT. 5	Mr. W. Horne's Great Fruit Tree Sale at Perry Hill, Chiffe, near Rochester, by Protheroe & Morris.
		Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	OCT. 6	Plants, at Protheroe & Morris' Rooms.
		Special Trade Sale of beautifully grown Nursery Stock at the Wood Lane and Arboretum Nurseries, Isleworth, by order of Messrs. C. Lee & Son, by Protheroe & Morris.
SATURDAY,	OCT. 7	Orchids, at Protheroe & Morris' Rooms.
		Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—53°.9.

MR. IGGULDEN'S paper on the *The Eucharis*, "Culture of the Eucharis," read at the meeting of the Royal Horticultural Society on Tuesday last, is one that will be read with interest when it comes to be printed in the *Journal of the Royal Horticultural Society*. With most of his cultural details there will be a general agreement. The Eucharis is not a bulb which, judging from its native habitat and its structure, should be dried off, and the excessive forcing to which it is subjected is certainly calculated to depress the plant, and render it more subject to the attacks of parasites, whether insects or fungi; whilst pure water, meaning, as Prof. CHESHIRE pointed out, only oxygenated water, and water of the temperature of the air of the house, are requisites. Mr. IGGULDEN'S remarks on the method of potting and the after-treatment were very judicious, and the leading requirements of the plant shown to be a sufficiency of moisture, a sufficiently-high temperature and shade, as might be inferred from the structure and appearance of the plant, and a knowledge of the climatal conditions under which it grows.

As to the oft-mooted question as to whether the mite is the cause or the consequence of the disease, opinions are still divided, though the majority of gardeners, we believe, are under the impression that perfectly-sound bulbs are not attacked. It is, indeed, true that a sound bulb if attacked may not greatly suffer, its strength

being sufficiently great to enable it to withstand the effects of the pest, and it is equally true that a weakly bulb will fall a prey to the mite or to the fungus much more readily than a healthy one should do. At the same time, we are perfectly convinced that the mite attacks healthy as well as degenerate bulbs. It is not generally known that the same mite attacks other bulbs, such as Roman Hyacinths and Narcissus. When, therefore, it gains access to a new and more succulent food-material, in a congenial temperature, it is no wonder it thrives and waxes fat. By and by, perhaps, it will get more accustomed to its new conditions, and the plant more accustomed to its attacks, a process facilitated by the gardener in eliminating the affected bulbs, and thus selecting the strongest.

At any rate, from our present knowledge and experience, we think it most likely that our successors will hear less of the bulb-mite than their predecessors did, and one way of securing this desirable end will be to keep the Eucharis bulb quite separate from any other bulbs of any kind.

The mite is not the only enemy to which the Eucharis and like bulbs are subject. The small red soft spots on the bulbs are often, if not always, associated with a kind of fungus, allied to the yeast fungus, and acting in the same way. This was pointed out in our columns some years since by Mr. GROVES, but whether it has any relation or not to the attacks of mites we do not know. It is quite possible that the two might co-operate in the enfeeblement of the bulb.

An end
to unlawful
Enclosure.

UNDER this title the *Times* of the 23rd inst. has a long article which will be read by all except land-grabbers with great joy and satisfaction. The "statute of MERTON," under the provisions of which encroachments were (legally) considered justifiable, under certain conditions, is no longer to be accepted as beyond appeal. In future no enclosure shall be made under its provisions without the sanction of the Board of Agriculture, and that sanction must be given on the ground of public not of private benefit. For a general enclosure, an Act of Parliament confirming a provisional order of the Board of Agriculture is necessary, but the enclosure of small plots and strips may be sanctioned by the Board of Agriculture alone, but only, as we have before said, on the condition that positive benefit will accrue to the public.

Notice of application to the Board of Agriculture for leave to enclose must be advertised in a local paper three months previously, and the Board will consider any objection made to it. "The inhabitants of a district will have themselves to blame," says the *Times*, "if they do not in future prevent the nibbling away of their common lands." The encroachment on commons and the appropriation of road-side strips, like the stopping of footpaths, are questions in which the general public is interested. It is to be feared that if the local residents were alone to be consulted, they would not sufficiently appreciate the nature of the loss they would sustain, or would be too apathetic and devoid of sufficient independence to protest against it. Notice given in the local papers may, therefore, not be sufficient to call attention to the proposal to make undesirable enclosures. It is unfortunate, too, from this point of view, that the presidency of the Board of Agriculture should be a political office. Let us trust, however, that the Board will take the broadest and justest view of the cases submitted to it.

It has taken twenty-eight years of costly

litigation and parliamentary struggle to secure this reform. Let us hope its value and permanence may prove commensurate with the pains exerted to secure it. It is to Lord THRING and the Commons Preservation Society that we owe the Act of Parliament which received the Royal assent on the 22nd inst.

MEEHAN'S *Monthly* for September gives a representation of a silver tablet presented to Professor

MEEHAN by the inhabitants of Philadelphia, in grateful acknowledgment of his services in establishing small parks in the several sections of the city for the health and enjoyment of the citizens. Professor MEEHAN has recognised one of the greatest needs of our cities. When, some years since, we instituted inquiries for the purpose, we found that most of our larger, and, indeed, smaller towns were now provided with parks and recreation grounds on the outskirts, or at a short distance from, the towns. Of even greater sanitary importance is the establishment of numerous small areas (the larger the better!), dispersed through the crowded portions of our towns. An encircling girdle of parks and commons, broad, tree-lined boulevards, and a multitude of small open spaces appropriately planted and amply provided with seats, would do much to avert the progress of disease, and to fortify the inhabitants against its attacks should it unhappily occur, and under all circumstances would tend to make them happier, and therefore better citizens. There is, now-a-days, too great a tendency to let such things be undertaken by the State, the County Council, the local board, or the vestry, rather than by individual effort. Of course, the entire task is often too great for individual enterprise, but we would suggest that there is ample scope for the useful activity of private citizens. For instance, whilst we might appropriately look to the governing bodies to provide the land, lay it out fittingly, and secure its general upkeep out of the public rates, the duty of providing luxuries, such as floral decorations, ornamental fountains, statuary, or music should be furnished by the voluntary contributions of the people. Space, grass, trees, and fresh air are the primary requisites. Ornamentation, though very far from unimportant, is a secondary consideration. Professor MEEHAN has devoted years of energy and judgment to carrying out the desire of the founder of his adopted city, WILLIAM PENN, "That it may be a green country-town and always wholesome." It is to be feared that these conditions cannot now be fulfilled in their entirety in any large town, but that is all the more reason why as much as possible should be done in this direction. What Professor MEEHAN has done for Philadelphia is being accomplished for London so far as its means permit by the society over which Lord MEATH presides, whilst all credit must be given to the County Council and its predecessor, the Metropolitan Board of Works, for their successful attempts in securing large open spaces for the comfort and enjoyment of the people. Not longer ago than the middle of the century, it was asserted that trees would not grow in London, that any attempt to beautify the squares and provide recreation grounds was futile. Now, with a population enormously increased, and an area vastly greater, we find London a much more pleasant city to live in than it was then, whilst its sanitary condition is superior to that of any other city of its class in the world; and the still requisite task of sweetening, purifying, and decorating may be described as colossal.



CAMELIA IN HER MAJESTY'S PARK AT OSBORNE, ISLE OF WIGHT.

CAMELLIA IN THE OPEN AIR AT OSBORNE.—The photograph from which our supplementary illustration was taken, was executed at the request of H.R.H. the Duke of CONNAUGHT, and represents one of the Camellias in the grounds at Osborne. It was, as we learn from Mr. COOLING, planted in 1847, and is now 6 feet high, and 48 feet in circumference. Some years since, HER MAJESTY ordered a canvas tent to be erected over the shrub when in bloom to protect the flowers from rain and frost. Its appearance in spring is very beautiful.

NATIONAL CHRYSANTHEMUM SOCIETY.—The next meeting of the General Committee will take place at Anderton's Hotel, Fleet Street, E.C., on Monday evening, October 9, at seven o'clock. On the termination of the ordinary business of the committee, Mr. CHARLES E. PEARSON, of the Chilwell Nurseries, Notts, will read a paper on "How to Improve our Chrysanthemum Shows;" and discussion will be invited.

THE "ORCHIDÉENNE" AT BRUSSELS.—Sir TREVOR LAWRENCE, Bart., has been elected President by this Society.

THE GARDENERS' ORPHAN FUND.—A large representative committee of gardeners of Kingston, Surbiton, and district, has been formed to promote a grand concert in aid of the Orphan Fund. It will take place at the Surbiton Assembly Rooms, on October 25, and Mr. W. FUEZE, of Roselands, Teddington, the treasurer to the committee, has kindly undertaken to arrange the programme, which it is hoped will be of great excellence; a strong effort is being made and with considerable success, to secure a strong body of local patrons. Mr. A. DEAN, Richmond Road, Kingston, is the Hon. Secretary.

TESTIMONIAL TO MR. MANNING.—An influential committee has been formed for the presentation to Mr. MANNING on his retirement from Messrs. VEITCH, of some "slight testimony in recognition of his courtesy and invariable kindness to the fraternity." Mr. WYTHES of Syon House Gardens, Brentford, is the Treasurer, and Mr. JAMES HUDSON of Gunnersbury House Gardens, Acton, is the Secretary.

LECTURER ON HORTICULTURE.—A Cheshire correspondent writes: Mr. W. NIELD, formerly head gardener at Wythenshaw Hall, in that county, which post he has held for seventeen years, having resigned it, has been selected by the Cheshire County Council as Lecturer on Horticulture. He is an enthusiastic and successful gardener.

THE HORTICULTURAL COLLEGE, SWANLEY, KENT.—The Experiments Committee of the Kent County Council held a meeting at the Horticultural College on Thursday, September 21, to investigate the Strawberry plantations of English and North-American varieties. The next meeting is fixed for Thursday, October 5, when Professor F. CHESHIRE is to give a lecture on "Root-pruning of Fruit Trees."

A FAREWELL DINNER TO A BANK MANAGER.—It will doubtless be of interest to many country readers of the *Gardeners' Chronicle* to be made acquainted with the fact that on the occasion of the retirement of Mr. EZRA LIVERMORE from the management of the Covent Garden branch of the London and County Bank, a number of Covent Garden salesmen gave a dinner at Simpson's in commemoration of the event. Mr. LIVERMORE has been more than forty years in the service of the banking company, twenty of which have been passed at the Covent Garden branch, and his name, at the least, must be known to many of those doing business with market men. There were present at the dinner, Mr. COLEMAN in the chair, Mr. G. MUNROE vice-chair, Messrs. Hewett, G. C. Bond, Grake, H. Foord, T. Jay, E. Jacob, Stonewall Jackson, E. Coleman, J. Rouse, G. H. Walker, E. W. Cuthill, and C. Liddiard.

A FINE VARIETY OF TOMATO.—Two splendid bunches of Tomatos were sent for our inspection by Messrs. JOHN COBBAN & SON, Market Place, Rother-

ham. The fruit is massive, without ribs, very solid, well flavoured, and with but few seeds. Of its productiveness there can be no doubt. It was raised by the senders from a cross between Ham Green Favourite and Perfection, and it is said to excel both in the weight of fruit produced.

CONIFERS.—A systematic review of the genera of this order, by Dr. MASTERS, is given in the part of the *Journal of the Linnean Society*, published in August last.

M. ROMAIN DE SMET, a nurseryman of Ghent, well known to many on this side of the water, has lately been awarded by the French Government the Cross of the Order of the "Mérite Agricole."

THE KINGSTON AND SURBITON GARDENERS ASSOCIATION.—The following is the programme of lectures and discussions for the present autumn session. On October 3, "An Evening with the Begonia," Mr. JAS. MARTIN (Reading); October 17, discussion, "Is it desirable to have a Summer Show in Kingston and Surbiton?"—Opener, Mr. HAWKES; October 31, "Cliveias," by Mr. H. W. PITCHER; November 14, Discussion, "Forced Winter Flowers"—Opener, Mr. YEARSLEY; November 28, "Poinsettias," by Mr. J. MARTIN; December 12, "A Chat about Chrysanthemums," by Mr. H. J. JONES (Lewisham). The members meet on alternate Tuesday evenings at 7.30.

DAFFODILS.—These hardy bulbs are just now being planted again in immense quantities. Those who plant for permanence, no doubt find it difficult to understand the action of the great growers in lifting and replanting their immense stocks every year; but apart from the necessities of the dry bulb trade, which is still in Daffodils very extensive, the roots seem all the better for the lifting, drying, sorting, and replanting into fresh soil. At Mr. J. WALKER'S Ham Farm, Richmond, the ground is well prepared for the bulbs by manuring after early Peas, Potatos, or other crops, deeply ploughed, harrowed, and rolled, to make it fairly firm. Then furrows are run out with a plough some 4 inches deep, the selected bulbs planted thickly in these furrows, which are about 10 inches apart, the throwing out of the next furrow covering up the preceding one. In the sheds, large numbers of small boxes are being filled with picked bulbs for forcing, this method alone absorbing tens of thousands of bulbs very quickly.

CHRYSANTHEMUMS.—An interesting example of the effect of sub-rooting of these plants when in pots, into enriched soil, as compared with the moderate growth of plants that have no such aid, may be seen at Mr. WALKER'S Ham Farm. Owing to the very large number of plants to be dealt with, and the pressure of work elsewhere at the time of final potting, the plants were stood out upon levelled ground that had been previously used for Seakale beds and alleys. Now that roots have gone through into the rich soil of the beds, the plants have very robust growth, and dark large leafage. With the plants standing on the alleys, the growth has been very moderate. None have had any top-feeding. It will now be interesting to see how far the stronger plants, when removed from their rich feeding ground, will be better in bloom than the others that have had no such assistance.

FLORAL DISPUTE AT HAWICK.—We have received from Mr. JOHN WOOD, Manager of the Hardy Plant Club, Woodville, Kirkstall, Leeds, the following letter:—"Owing to a communication I have received, I conceive it quite possible that your report of this case might be to my prejudice. I beg to say that I am not the JOHN WOOD referred to in the case, and in no way have any connection with it."

PERENNIAL LUPINS AS A BARRIER AGAINST FOREST FIRES.—According to a correspondent in *Moller's Deutsche Gärtner Zeitung* for September 25, the perennial species of Lupin, planted in suitable breadths, form a capital barrier against the spread

of fires in woods and forests. The plants succeed in almost any kind of soil, and require but little light and sun, and push constantly forth until the autumn new leaves, by which the spread of the flames is completely hemmed. The plants are likewise recommended for planting to improve the appearance of a landscape according to the ideas of PRINZ PUCKLER MUSKA, much as we should use Broom or Furze, except that the colours blue and white of the flowers lend a beauty to the plant that is absent in the latter, and when seen in great masses they have a magnificent effect.

SALE OF ORCHIDS AT HAM GREEN, CLIFTON.—We have before us the catalogue of Orchids and general effects belonging to the estate of the deceased W. H. MILES, Esq., which were sold by auction by Messrs. ALEXANDER, DANIEL, SELF & Co., on Monday, September 25. Especial attention was drawn by the auctioneers to an uncommonly large specimen of *Phalenopsis amabilis*, with fifteen healthy leaves and three flower-spikes.

FURCRAEA FIBRE.—Mr. C. A. BARBER, the Superintendent of Agriculture, has issued a report on the plantations of *Furcraea* (would not *Fourcroya* be the preferable spelling?) in Antigua. Mr. BARBER considers the experiments to be so successful as to warrant further extension. The plant grown in Antigua is *Furcraea gigantea* var. *Willemetiana*.

THE BOTANICAL EXCHANGE CLUB.—Mr. G. CLARIDGE DUCE, High Street, Oxford, has issued this report for 1892, which is very satisfactory as showing that the systematic study of our wild plants has still attractions for many in spite of the "laboratory" botany which now monopolises the time of the teachers and students. Among the notes we find one on a very interesting hybrid between *Senecio vulgaris* and *S. squalidus*, and appropriately named *S. Baxteri* X. It should be remembered that *S. squalidus* transplanted from the dry oolite walls of Oxford to other soils, such as the moist clay of Middlesex, assumes a very different appearance. We cannot, however, say it approximates to *S. vulgaris*. The history of *Linaria repens* X *vulgaris* as given by Mr. DUCE is also very interesting to those interested in the question of hybridisation, and the possibility of the genesis of a new race in consequence. The microscope will sometimes show the composite character of hybrids in a manner that cannot be disputed. *Quercus fœmina* of Miller it seems is a name which antedates the now generally-used *sessiliflora*. We think this is a case where the rigid application of the law of priority would be a calamity, although Miller's name should, of course, be always cited as a synonym.

A COSMOPOLITAN HORTICULTURAL SOCIETY.—Immediately following the Congress on Horticulture at Chicago, a movement was instituted to organise a general horticultural society to promote correspondence, the exchange of plants, seeds, books, and other articles, and the extension of fellowship among the horticulturists of the world. The organisation of this body was practically completed at a meeting held in Mr. SAMUELS' office on August 25. The scheme provides for three officers-at-large, president, first vice-president, and secretary-treasurer. Each country is entitled to a vice-president and secretary-treasurer. The three general officers, together with the secretary-treasurer of the country in which the president resides, constitute a committee on by-laws, and also on finance, while all the officers constitute an executive committee. The membership of the society consists of horticultural societies, which pay an annual fee of five dollars, and of individuals, who pay an initial fee of two dollars, and a subsequent annual fee of one dollar. Only the three general officers are yet determined; these are P. J. BERCKMANS, Georgia, President; HENRI L. DE VILMORIN, Paris, First Vice-President; GEORGE NICHOLSON, Kew, England, Secretary-Treasurer. It is expected that one-third of all moneys collected in each country is to be retained in that country for the expenses of its own branch of the work, the remainder going into the hands of the secretary-treasurer. *Garden and Forest*.

"A COMPANION FOR THE QUEENSLAND STUDENT OF PLANT LIFE."—This is a handy little book, comprising elementary notions on the morphology and classification of plants, and a glossary of botanic terms. In addition, the characters of a few specially selected natural orders and genera are given, suitable for the student preparing for examination. Of course, these illustrations are taken from the Queensland Flora, but the general principles are applicable in all countries. The author is Mr. F. M. BAILEY, the Colonial Botanist of the colony whose experience affords a sufficient guarantee of the accuracy and value of the little treatise.

A GIANTIC SUNFLOWER.—Mr. EMMETT, gardener to Mr. WILLIAM HANCOCK, Wiveliscombe, has this season, says the *Devon and Exeter Daily Gazette*, grown some very fine specimens of SUTTON'S Giant Sunflower, one of which measured 12 feet in height and 9 inches girth around the stem; the flower was 20 inches in diameter. Many spring flowers are now again bursting into bloom, and a second crop of Strawberries is no rare occurrence, also Peas from the same haulm.

GRASS SEEDS FOR THE ROYAL PARKS, LONDON.—The contract for the year, to supply all the natural grasses required for sowing in the London Parks, has been again entrusted to Messrs. LITTLE & BALLANTYNE, the well-known firm of seedsmen and nurserymen, Carlisle.

MANURES.—When some years ago we caused analyses of some of the more-widely advertised manures to be made, and published the results, the general impression obtained was that most of the substances offered were good and efficient manures if properly used, and the only thing to be said against them was on the score of price, which was often excessive. There is always the danger of applying manures when they are not really wanted, of using a manure which, however suitable for one plant or crop, is of no service to another, or of using it at an improper season. There is a great objection also to the use of a manure of which the general nature is not made known. It is not necessary that the exact details of composition should be published, but the character of the manure offered should be made known. Messrs. H. & E. ALBERT fulfil these conditions, by publicly stating that their concentrated manure for horticultural purposes contains 14 per cent. of phosphoric acid, 12 per cent. of nitrogen, and 20 per cent. of potash. Such an announcement, which can readily be verified by any analytical chemist, would at once give confidence to a gardener conversant with the general principles of plant nutrition. It is hardly the season to make experiments now, but we may suggest that Messrs. ALBERT send specimens to Chiswick to be tried there in the usual way.

HORTICULTURAL SHOWS.—Reports have reached us of exhibitions at Glynde, Kelvedon, Bocking, and Witham.

NOTTINGHAM HORTICULTURAL SOCIETY.—An exhibition was held at the Arboretum on the 19th inst., in honour of the visit of the British Association to the town. A very large display was secured, and the exhibition was one of the finest ever held in the Arboretum.

TECHNICAL EDUCATION IN HORTICULTURE.—The Dundee Technical Institute classes in "The Principles and Practice of Horticulture," were resumed for the session on the 18th inst., when Mr. DAVID STORRIE, the lecturer for the advanced course, addressed prospective students. In the course of the lecture, Mr. STORRIE pointed out certain erroneous impressions which practical men often entertained with respect to theory, and subsequently dealt with some interesting facts in vegetable physiology.

SECOND CROP OF FRUIT.—The season is prolific of cases of fruits coming a second time on bushes and plants. Mr. COOP, gardener at Hensell, Hawkhurst, sends us some excellent red

currants, of which he says he has twelve standard bushes carrying a full crop; also LAXTON'S Noble Strawberry, small but good.

EFFECTS OF THE SEASON.—As one effect of this extraordinarily sunny season, says the *Daily News*, Laburnum and wild Roses are in bloom again in some parts of the country. A dinner-table was decorated last week with Laburnum from a tree in the garden. In one instance a Cherry-tree, with some of the fruit still hanging on the branches, shows one side bearing fresh blossoms, which, if the warm weather continues, may develop into fruit, though it can hardly ripen at this time of the year.

CONIFERS.—One of the most complete catalogues we have seen, is that which has been lately republished from the *Bulletin* of the Royal Tuscan Society of Horticulture, by AVV. GIUSEPPE GAETA. It comprises a list of the species and varieties cultivated in the author's experimental plantations at Moncioni. The catalogue is based upon the *Genera Plantarum* of Bentham and Hooker, and the *Handbuch* of Beissner. Altogether, 400 species and varieties are enumerated. The list has evidently been carefully compiled, it is rich in the names of garden varieties, and it has a good index. It is interesting to note the approximately simultaneous publication of catalogues of Conifers in Germany (Beissner), Denmark (Hansen), Italy (Gaeta), and Great Britain (Report of Conifer Conference), and satisfactory to note the near approach to uniformity in matters of nomenclature that exists.

DOUBLE ACHIMENES.—A correspondent sends us a flower of an Achimenes, in which the calyx and corolla were in their usual condition, and within the corolla were a number of free-stalked and coloured petals. No doubt these represented stamens, but the flower was in so advanced a stage of disintegration that we could not satisfactorily determine the number or the relative position of these supernumerary petals. The stigma was three-lobed. We do not remember to have seen a double Achimenes before. If the variation could be fixed, a race of double Achimenes would doubtless find admirers.

SINGLE CACTUS DAHLIAS.—Messrs. DOBBIE & Co., of Rothessay, send us a box of a new race of single Dahlias of the Cactus type, having relatively large, flat, starry flowers, very varied in colour. The ray florets are spreading, not overlapping, but with rather wide intervals between them, relatively narrow and obtuse at the apex. In colour they vary from white to yellow, various shades of lilac, red, crimson, and reddish-brown. Among the named varieties, Guy Mannering has whitish rays, yellow at the base, flushed with pale violet at the margins; Meg Merrilies is a clear yellow self; Ivanhoe has rosy lilac rays, with a crimson blotch at the base; Robert Burns has narrow rather pointed rays, of a rich reddish-purple; Highland Mary has bold oblong rounded rays, of a rich reddish-orange colour. Most of the seedlings are unnamed; from the samples sent, many of them seem quite equal to the named varieties.

VAN HOUTTE.—We learn from a communication to the *Journal des Orchidées* that on October 1 the VAN HOUTTE family will cease to have any connection with the celebrated firm which bears their name. It is difficult to think of Ghent without associating it with the name of VAN HOUTTE. The services rendered to horticulture in the importation, dissemination, and publication of new plants, in the furtherance of horticultural education, and in the raising of hybrids and improvement of cultural methods generally, are so great that the name and the firm will always hold a very high place in the annals of horticulture.

AWARDS AT THE WORLD'S FAIR, CHICAGO, SEPT. 22.—The following awards to British and colonial exhibitors have been made by the committee of the Floriculture Section: British.—Messrs. Laing & Sons, [Chinese] Primroses; Messrs. Carter & Co., [Chinese] Primroses, Cyclamen, and other flowers; Messrs. Kelway & Sons, [Chinese] Pri-

moses (model crimson); Messrs. Cannell & Sons, Primroses, &c.; Messrs. Waterer & Sons, collections of Pæonies and Phloxes; Messrs. Dickson & Sons, collections of Azalea mollis and Rhododendrons; Miss Margaret Dickson, collection of Roses. New South Wales.—The New South Wales Commission, photographs of a botanical garden, collection of Tree-Ferns, and various Ferns. Cape Colony.—Mrs. Ogilvie, floral church decoration; Government of Cape Colony, leaf specimens of everlasting flowers. The awards to foreign exhibitors are as follows: Germany forty-six, France twelve, Holland six, Austria one, and Italy one. *Reuter telegram in "Times."*

PUBLICATIONS RECEIVED.—NEWTON, *Dictionary of Birds*, part 2 (A. & C. BLACK).—*Kew Bulletin*, September.

BOOK NOTICE.

ORCHIDS OF SOUTH AFRICA.*

FOLLOWING his *Orchids of the Cape Peninsula*, which proved such a boon to the botanist and student of the flora of South Africa, and especially to the cultivator of Cape terrestrial Orchids, which now find favour in gardens, Mr. Harry Bolus, F.L.S., in his *Figures, with Descriptions of Extra-Tropical South African Orchids*, gives to the world a valuable work, the outcome of years of study and research, and one which has evidently been made a labour of love.

The plan of the work, of which this is the first issue, is that each of the species should be thoroughly dealt with, and coloured and analytical drawings given, a method which, as the author in the preface states, is the only satisfactory one with the majority of the subjects described. But, notwithstanding the presence of the illustrations, the descriptions in the letter-press, both in Latin and English, are given even to the most minute details, and the affinities and habitats of the species, and other interesting information, are appended.

Fifty coloured or partly-coloured (except four) plates are given, and they are remarkable for the careful drawing and depicting of what some might regard as minor features, but which are of the highest importance in giving a faithful representation of the plant. The colouring, too, is good, and not exaggerated. The subjects illustrated and described comprise *Diaea*, 13 species; *Satyrium*, 6; *Habenaria*, 3; *Bulbophyllum*, 1; *Angracum*, 5; *Corycium*, 3; *Brownleea*, 4; *Disperis*, 1; *Eulophia*, 2; *Holothrix*, 3; *Liparis*, 2; *Pachites*, 1; *Platyplepis*, 1; *Pogonia*, 1; *Pterygodium*, 3; and *Schizochilus*, 1. Of these nine are new species, viz., *Angracum caffrum*, A. *Mandæ*, *Habenaria Galpini*, *Satyrium Guthriei*, S. *ocellatum*, *Pachites Bodkini*, *Diaea sabulosa*, D. *conferta*, and *Brownleea Galpinii*. Turning to the figures of the plants, we observe that some of the plants illustrated are in cultivation, although probably owing to our want of a proper knowledge of them—a want which it is one of the provinces of the present work to supply—it may be said of some of them, as it has been said of the members of the genus *homo*, "They are here to-day and gone to-morrow." *Liparis Bowkeri*, t. 2, and *Bulbophyllum Sandersoni*, t. 3, we have seen in flower lately; so also *Angracum sacciferum*, t. 10, *Habenaria Dregeana*, t. 15, H. *tetrapetala*, t. 16, *Satyrium maculatum*, t. 19, and *Diaea tripetaloides*, of which a new yellow form is illustrated at t. 30. *Diaea sagittalis* has also flowered in gardens frequently of late, and has far more beauty than the illustration conveys; t. 37 gives a fine picture of the blue *Diaea*, D. *graminifolia*, about which Mr. Bolus gives some particulars of its habitat, in the hope of its being able to assist in the cultivation of this desirable plant. Most of the grassy-leaved *Diaes* have proved unsatisfactory under cultivation, as they merely grow, but very rarely flower. D. *lacera* (figured in the *Orchid*

* *Icones Orchidearum Austro-Africanarum Extra-Tropicalium; or Figures, with Descriptions of Extra-Tropical South African Orchids*, by Harry Bolus, F.L.S. Vol. I., Part I. (London, William Wesley & Son, 28, Essex Street, Strand.)

album as *D. graminifolia*) has been the freest to bloom, and during one season we heard of its having bloomed in several gardens. Plate 38 illustrates the orange-scarlet *Disa ferruginea*, and t. 39 the similarly-coloured, but totally different in structure, *D. porrecta*, a very useful arrangement for comparison, as the names are confused in gardens. On t. 35, *Disa elegans*, Rehb. f., an illustration of a beetle found on it is given, with the following interesting remarks:—"Upon one of the flowers was found a beetle, *Peritrichia* sp., as my friend, M. Peringuey, informs me, belonging to a group of well-known fertilisers, and which had a pollinium attached to its thorax. This being only the second instance of an insect actually carrying Orchid pollen which I have seen during many years' study of Cape Orchids, I have thought it desirable to figure it with the plant."

The work is of great value to the botanist, and should be of great interest to gardeners, the plants which are treated of being those that are finding gradually the place in gardens that they deserve to occupy, and affording ample returns for the care bestowed upon them. For example, *Disa racemosa* and *D. tripetaloides* are now found to be very easily cultivated, and they have produced home-raised hybrids of fine quality—take, for instance, *Disa* × *Veitchii* and *D.* × *kewensis*—and doubtless the day is not far distant when other handsome species of the genus will be equally at home with us. The *Satyria*s, too, thrive remarkably well in cool sunny frames with some cultivators; but those who make greenhouse plants of them have but little success. For whatever purpose, however, the work under notice is obtained, we are sure that all who get this first part will eagerly look forward for its successors, which we sincerely trust its talented author will have leisure to elaborate.

PLANT NOTES.

AGERATUM BIJOU DE LYON.

This is by far the best white *Ageratum* that I am acquainted with—dwarf, compact, and free-growing up to the flowering period, after which, owing to its being such a profuse flowerer, that it is somewhat difficult to obtain cuttings for increase in August and September, that I find it advisable to pot-up a few of the plants every autumn to propagate from. Beds filled with this plant are veritable sheets of white, the individual flowers being large, and borne on shoots of uniform height. *Bijou de Lyon* is a capital companion in the flower garden for the *Tom Thumb Ageratum*, the latter being identical in every respect excepting the colour of the flower, which is deep mauve. *H. W. Ward.*

EDENHALL, PENRITH.

This place is the scene of the tradition upon which is based the German ballad of "Umland," translated into English poetry by Longfellow, known as "The Luck of Edenhall." The "fairy fountain" is upon the lawn, surrounded by old Box trees, and still gives a supply of bright, clear water from the red sandstone rock. The enamelled glass vessel, "The Luck," is preserved as a heirloom in the hall.

The present hall is a modern structure of picturesque appearance, and becoming rapidly covered by various creepers. There is a large well-wooded park containing many fine deciduous trees, particularly Beech. The soil is mainly derived from the decay of the Penrith red sandstone, which comes to the surface in places. The most striking feature in the flower garden is the originality displayed in the planting of the flower-beds. Large beds of *Lobelia cardinalis* occupy prominent positions, the deep bronze of the foliage and bright scarlet flowers form a pretty contrast to the beds of pink Carnations. Two well-assorted masses on the terrace are made up of *Eucalyptus*, *Ricinus*, and *Nicotiana*, the terrace front having a high border containing pale Sun-flowers, *Dahlia*, *Cochineal*, *Heliotrope*, and the variegated *Polemonium*.

The glass-houses contain some fine Vines and Peaches, and also good specimen Palms and climbing plants; but the most noticeable feature here is the excellent lot of small *Crotons*, *Dracenas*, *Caladiums*, *Aralias*, &c., just large enough for table decorations. They are all propagated in the Cucumber and Melon pits, and look as well and strong as any nurseryman's collection, with this advantage, that when the houses are once free from such guests as mealy-bug and scale, there is less risk of their re-introduction when most of the plants are propagated on the place. Plants when two years old are just a nice convenient size for table decoration.

The growth of vegetables and fruit is here brought to a high state of perfection, neatness and cleanliness being the order of the day. *F. V. D.*

SYMMES' VEGETABLE COVER.

Our figure represents a Canadian invention which has recently been sent to the Imperial Institute as a means of introducing it into this country. That figured is about 12 inches high and 15 inches wide at the bottom, and it may prove useful for placing over Cauliflowers and Broccoli, or, indeed,

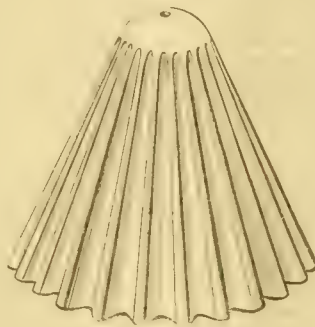


FIG 64.—PLANT COVER.

any vegetable that requires temporary shelter from rain, wind, frost, or even sun. A much larger size, measuring about 3 feet at bottom, is used principally for protecting hay and corn from wind and rain after it is put up into "cocks" until such time as it is harvested. Both articles are made from a kind of wood pulp, which is afterwards twice saturated with a solution which renders them waterproof. They are very light, and are easily moved from one place to another. Anyone visiting the Institute may see both kinds in the Canadian section, when Mr. Watson the Curator will be pleased to give any particulars.

THE OLD HALL.

Here is the neat and compact garden of C. B. Powell, Esq., at Southborough, Tunbridge Wells, the raiser of that best and most ornate of hardy bulbous plants, *Crinum Powellii*. The garden contains more variety and more well-grown plants than many places of much greater extent, and while garden plants are being grown up to their best, a considerable amount of attention is given to improving the quality of many of them by cross fertilisation and experimental culture; and much success has attended the efforts put forth in that direction. Lilies are well and extensively grown; and among them the beautiful hybrid *L. Dal-hansoni* (*Martagon dalmaticum* × *Hansoni*), raised here, originally described in the *Gardeners' Chronicle*, and figured in *Garden*, Sept. 16, is certainly a great acquisition, and one which gives a reward for a considerable amount of trouble. Like most other home-raised plants too, it is a more robust grower than either of its parents, and has well-filled the bed devoted to it.

Hybridising the various species and varieties of *Gladiolus* is very extensively carried out, and with some remarkable results worth recording. *G. Saundersi* is a great favourite both for seed bearing and for crossing into other kinds; and among the other kinds the varieties of *G. Lemoinei* are

almost exclusively used, as they give the best results and the greatest variety. One reason why *G. Saundersi* is used for one of the parents, is that the progeny bear flowers which open well and hold up their heads and display themselves, and do not curve downwards as do most other crosses. The first lot we examined were a beautiful strain still occupying the four-light box in which the seed had been sown in the end of March, and, managed as they are by Mr. Powell, the *Gladioli* commence to flower about twenty weeks after the seeds are sown. The method adopted to bring about this quick blooming is to make up a hot-bed in March, and cover it with as many frames as it is intended to fill. When the heat of the bed is nearly spent, at the end of March, a little soil is placed in the frames, and the seeds are thinly sown. In due time they come up, and are never disturbed until their flowering is over, when the best ones are marked, and stored away for planting in the open ground for the next season. After having examined the beauties of those in flower in the frames, which are rich in brilliant scarlet and in purple colours, we went to the plantation beside the orchard, and there found many beds which had some very fine things in bloom, but owing to the extraordinarily dry and hot season—which was doubly injurious on this light sandy soil, they were neither up to their usual quality nor had lasted in flower half so long as they had in previous years. Among other bulbs, *Watsonia iridifolia* O'Brienii, one of the finest of white Irids, is finely in bloom, and attempts are being made to cross it with some of the hybrids of *Gladiolus Saundersii*.

Begonias, too, have for years been worked on by Mr. Powell, and the quality of the strain, both double and single, is very fine; but the most striking seemed to be a dwarf, floriferous, crimson-flowered variety, a seedling of *B. Daviesii*, which is here used as an edging to the beds of other flowers, and for which it is well adapted. In the *Begonia* garden, the fine pyramidal *Yew* in the centre serves admirably to combine the various beds arranged around in one design.

In the elevated beds which border the winding walks, hardy herbaceous perennials are chiefly used, among them being planted bulbous plants for flowering at various seasons. In some places the edging was of hardy *Cyclamen*, which have grown to an immense size, and produce a great display of flowers. *Colchicum byzantinum* and the larger *C. speciosum*, too, were making a fine show, and the *Gaillardias*, *Lilies*, *Campanulas*, *Montbretias*, *Celsia cretica*, *Heleniums*, *Menziesias*, scarlet *Lobelia*, perennial *Helianthus*, and other hardy flowers were making the best show they could in the face of the continued drought. Near the house was a beautiful screen of *Tropæolum speciosum*, which is such a charming plant when it thrives in that manner, but such a miserable object when it does not take to the place where it is planted.

THE ORCHIDS.

If there are any favourites here, where all plants are loved, the Orchids claim first place with both Mr. Powell, and his clever gardener, Mr. Dupont, who not only grows his plants well, but arranges them very effectively. The summer-flowering *Cattleyas* and *Odontoglossum vexillarium* had evidently made a good show, and the occupants of all the houses were in capital condition; indeed, much in advance of what they were when we last paid them a visit. The *Masdevallias* are still in the cold frame, where they will remain until frost comes. *Bletia hyacinthina* and some few other species were also outdoors, and the plants in the well-ventilated houses were being kept as cool as possible. In one house, in which were also some very finely-created *Gymnogramma Parsoni* and *G. Wetenhalliana*, *Odontoglossum grande* was flowering well, and so also *Dendrobium Draconis*, *Oncidium Jonesianum*, *O. Cebolleta*, *O. varicosum*, several very fine *Odontoglossum Harryanum*, *Peristeria elata*, with two spikes; many *Cattleya labiata* in bud, *Lælia cinnabarina*, with immense growths; *Miltonia spectabilis*, *Lælia pumila*, *Mormodes luxatum*, and various *Cypripediums*. In the next house the

Lycastes and *Barkerias* were thriving, the latter sending up spikes freely; and *Oncidium Janeiriense*, *O. tigrinum*, *Maxillaria venusta*, *Miltonia Clowesii*, had fine spikes; and various other species were in bloom. Here the *Pleiones*, suspended near the glass, make grand bulbs, and flower very satisfactorily.

In the warm lean-to house the *Calanthes* are well-grown; *Dendrobium Phalaenopsis* var. *Schroderiana* and *D. Dearei* have put on good growths, the latter being of extraordinary vigour, and the *Angraecums* and other warm-house Orchids seem to like the presence of the *Fittonias*, *Panicum*, *Tydas*, &c., grown or planted on the staging. Of the last-named *Tydas*, "Robert le diable" is a great beauty, with its scarlet flowers spotted with black.

In the fernery some very strong *Dendrobium Wardianum*, *D. crassinode*, &c., are resting; and in the other houses are many interesting bulbs and other plants not generally met with; indeed, every department of the garden is most interesting.

Of Apples and Pears there have been fair crops, Cob-nuts and Filberts a heavy crop, and fruits generally have been satisfactory, although many things in the kitchen garden have been the reverse. Among good crops we noted some rows of American Wonder Pea which was sowed on July 23, and which were bearing well in the first week in September.

HOME CORRESPONDENCE.

CHRYSOGONUM VIRGINIANUM.—This "child of gold" has not yet become as popular as its pretentious generic name might lead us to expect. I can say, however, that no one who has not seen it before ever passes it in my garden without asking for a piece. It wants a moist, rich, open soil, and a rather shady situation, as most prairie plants do. If these are given to it, it flowers from May to November, the flowers becoming larger and more plentiful as autumn advances, without the plant becoming taller, as each flower-stem, 6 or 9 inches high is thrown up from the base. It makes a better show, in a small shady bed that yellow *Calceolarias* ever did, and gives less trouble. As for the name, Asa Gray says that Linnaeus derived it from two Greek words, meaning "gold knee," and that he cannot see the application. Of course he cannot, because *Chrysogonum* is a good classical Greek word, meaning "born of gold," and was applied by Dioscorides to some plant, but certainly not to the subject of this note. But centuries before the time of Dioscorides the word was used by the Greek poets as an attribute of the kings of Persia, who claimed descent from Persens, the "son of a shower of gold," according to a fable of which all school-boys know both the circumstances and the moral. *C. Wolley Dod, Edge Hill, Malpas.*

THE ACORN CROP.—As the gardening journals preserve a record of the fruit crops each season, it may be interesting to record the extraordinary acorn crop already ripe in this neighbourhood. For size, abundance, and earliness of acorns the only year in which I can recollect anything like this was 1868; but in all these particulars the present season surpasses it. This year many branches have been broken by their weight, falling on quite calm days, and on many of the trees nearly all the acorns have burst their shells. On all the trees the lower branches are weighed down so that the cattle can reach them, and they feed on the leaves and fruits, not without dangerous consequences. One of my cottagers lost a cow last week from astringent effects of the Oak leaves. I enclose a few acorns from a large limb which fell yesterday across the road near my house. The acorns here generally set late and are of small size. Pheasants and wood-pigeons will find these a good mouthful. They weigh forty to a pound. *C. W. Dod, Edge Hill, Malpas.*

CHRYSANTHEMUMS.—Were I desirous of obtaining that form of immortality which is associated with floral names, I should prefer the incurred to the Japanese section of *Chrysanthemums*. Looking over the lists of selected twenty-four incurred, and the same of Japanese flowers, published in the Royal Horticultural Society's *Journal* after the *Chrysanthemum* Conference of 1889, I find that of the best of the former there has been since little change in popularity. Violet Tomlin would now stand much higher than twenty-third, and Miss A.

M. Haggas higher than twenty-seventh. Also there would probably be admitted into the select twenty-four M. R. Babuant, after last season's experience, and perhaps Robert Cannell; still the changes in popularity of the incurred section are few. On the other hand, how many of the eighty-five growers who voted in 1889 for the best twenty-four Japanese, would now put Madame C. Audigier at the head of the list? and of the leading twenty-four, would include other than perhaps E. Molyneux, which has yet a year or two longer to run—Avalanche, Sunflower, Elaine, J. Delaux, and Madame Laing? Of these, perhaps the most enduring are Sunflower and Avalanche. But what of all the rest? Mons. Bernard, Stanstead White, and Etoile de Lyon have all moved up appreciably since the list was prepared, but the far larger number will rarely be seen on showboards again. Viviani Morel, J. Stanborough, Dibben, Col. W. Smith, W. Tricker, W. H. Lincoln, W. Seward, Beauty of Exmouth, W. K. Woodcock, G. C. Schwabe, Florence Davis, White Louis Boehmer—these are but few of the best of to-day, and to be thrust aside for others a year or two hence. Such is floral nomenclature immortality. *A. D.*

RETARDED GROWTH IN TREES.—Referring to the note on the subject of retarded growth by your correspondent, Mr. H. D. Hearn, at p. 340, I have some experience of this peculiarity in trees after removal. A large tree of Pear Comte de Lamy was removed, and it was affected in exactly the same manner as that described by Mr. Hearn, but this same tree has annually borne a full crop of fruit ever since. Two years since, I moved an American Hickory tree, 6 feet high, this also remained dormant for a whole season. This spring it commenced to grow, and has now several shoots 1 foot long, and appears to be none the worse for its rest. *E. M.*

RETARDED GROWTH IN PEAR TREES.—It is not an unusual thing for a Pear or Apple tree to lay dormant the first year after planting or transplanting (see H. D. Hearn in the *Gardeners' Chronicle* for September 16). "H. D. H." appears to trace the cause of retarded growth to a matter that has been much discussed of late in these columns, viz., root-pruning. Now, my difficulty in our chalky soil is to start root-action, and not check it by the measures laid down by some of your contributors. My practice is to dig deeply outside a certain radius that is determined by the size of the tree, and chop off with a spade all tap roots met with, which, do what I will, persist, if left alone, in descending into the subsoil. By this operation, I leave the large body of roots undisturbed. The stock used for our Pears is the Wilding Pear, the soil at Glyndebourne being much too dry for the Pear on the Quince stock. *W.*

RANGEMORE, BURTON-ON-TRENT.—Upon a recent visit to the gardens of Rangemore, Burton-on-Trent, the seat of Lord Burton, there was to be seen one of the finest houses of Muscat of Alexandria Grape—probably one of the best in the country this season. The Vines are very old, but every year Mr. Bennett succeeds in obtaining a wonderful crop of grand bunches and large berries. All kinds of fruit is grown at Rangemore for private consumption, and under no circumstances is it ever exhibited, so that these grand bunches of Muscats will not be seen upon any exhibition table; if, however, this could be arranged, there is no doubt of the position they would take. Other varieties of Grapes are well grown, and those specially worthy of mention are Black Hamburg, Gros Colmar, Madresfield Court, and the two new varieties recently put in commerce, viz., Appley Towers and Lady Hutt; these last two being fruited here for the first time this season, and are what the distributors describe them as being, that is, first-class exhibition Grapes—good in every way. In other houses there were observed a fine collection of Orchids in very robust health, and especially the *Cattleyas*, which were a grand lot; *Odontoglossums*, *Calanthes*, *Vandas*, and many other favourite genera. Rose growing is a specialty here, and at the present time a large houseful of thriving young Tea Roses in capital condition are being specially cultivated or early forcing purposes. Other houses contain quantities of *Bouvardias*, *Cyclamens*, and winter-flowering plants of all kinds in fine condition. Carnations of the *Souvenir de la Malmaison* varieties are grown in very large numbers, the plants being large, and quite free from the disease so prevalent among these plants. A good collection of winter-flowering Carnations is grown, such as Winter Cheer, Miss Jolliffe Improved, Sir Henry Calcroft, &c. In spite of the very dry season, the grounds

are in perfect condition, although, of course, the amount of labour involved in watering such large areas has been very heavy. *H. J. C.*

POTTING UP BEDDING PLANTS FOR STOCK.—A sufficient number of any bedding plants of which the desired quantity of cuttings could not be obtained a few weeks ago, should be potted up forthwith for furnishing cuttings in the spring. Such, for instance, as varieties of *Verbena*, *Lobelia pumila magnifica*, *Ageratums* *Bijou* de Lyon and *Tom Thumb*. The plants should be taken up with a little soil attached to the roots, the latter being shortened back before being potted in well-drained $4\frac{1}{2}$ pots, and cutting off the flower-stems at the same time. A suitable compost consists of about three parts light loam and one of leaf-mould, free from worms, with a small quantity of sand added. Stand the plants in a frame or pit near to the glass, after affording water to settle the soil; keep close, and shade from sunshine until the roots have taken to the soil, after which, shading should be discontinued, and more and more air afforded by day for the next two or three months, to prevent growth being made before the early part of January. Care, however, should be taken to prevent the plants suffering from damp, or excessive dryness of the soil about the roots. *H. W. W.*

PREMATURE FLOWERING OF APPLE TREES.—The peculiar weather experienced this year is making fruit trees behave in a most extraordinary manner. I have twenty-five trees of Irish Peach growing in an open field, which carried a full crop of fruit that was gathered in July, and at the present time the bulk of these trees are freely flowering, nearly every leading shoot having a truss of bloom on it. I do not remember an occurrence like this before, although a tree here and there will blossom a month, or even two, out of the proper season, but the circumstance is not general. It will most likely interfere somewhat with the bloom of next season. *E. M.*

EARLY-BEARING OF A STIRLING CASTLE APPLE.—The following may be of interest to intending planters of fruit trees:—On the 4th inst. there were gathered here, from a small bush of Stirling Castle, planted two years ago, fifty Apples, weighing 24 lb. 15½ oz., six of them weighing 4 lb. 1 oz. *Neil Sinclair, The Gardens, Park Hall, Salop.*

A SECOND CROP OF STRAWBERRIES.—Quite a nice second crop of Strawberries has been gathered from plants that were forced last spring, and planted out afterwards in an open sunny spot. The variety *Vicomtesse Héricart du Thury*, is one of the best for affording a second crop of fruit, as it also is in point of flavour. To-day, September 18, I saw some ladies in a railway carriage enjoying some really fine Strawberries; where they came from I know not, but the fact remains, that second crops are more general this season than some persons may suppose. *E. M.*

CHIONODOXA ALLENI.—The time having come round again when bulb growers will be giving their attention to this family, perhaps those who have flowered the above-mentioned variety will afford readers of the *Gardeners' Chronicle* their opinion as to its qualities. In autumn 1891, I received bulbs from the discoverer, and these flowered last spring. Some of the flowers were certainly finer than *C. Lucilia*, but I am waiting another season's blooming before giving my opinion. Amongst my lot has appeared a pale blue-flowered variety, very pretty; but whether it may be perpetuated I shall be able to tell better next season. *Pioneer.*

CATTELEYA GASKELLIANA.—In answer to enquiries by "W. W. & Sons," our Orchid correspondent, Mr. W. Holmes, writes as follows: "The treatment is that adopted by Orchid cultivators for *C. Mossia* and *C. Mendeli*. The best advice I can give him to get his plants to flower is to turn them clean out of their pots, and wash the roots quite clean. Perhaps the plants were potted when purchased, and turned out of one pot into another, with all the old soil potting material about them. In potting *Cattleyas* it is a mistake to put fresh materials around the ball without disturbing the old, as by so doing the pseudobulbs will soon turn black, and then die. As to present treatment, our plants receive no more water than is really required to keep them from shrivelling, and, having plenty of roots on the outside of pots, the moisture in the houses keeps them healthy. I would advise W. W. & Sons to put the plants in teak baskets, hanging these close to the roof. *C. Gaskelliana* likes a temperature somewhat

warmer than *C. Mossiae* or *C. Mendeli*, but this cannot be the cause of the failure of the plant after the hot summer we have had; the plants should be quite dormant at this season, and no doubt would have been had they been healthy, and flowered at the proper time. If the plants have started into growth again, place them at the warmer end of the house, and encourage quick growth, then withhold water until the spring, when they will start into growth at the proper season. Our plants are dust dry, and have plenty of roots. *Odontoglossum nebulosum* should flower with the new growths, but the plants differ in habit of flowering to *O. citrosimum*. In *O. c.* the spikes appear nearly as soon as the new growth, but in *O. nebulosum* the new growth is partly made, or should be made, before the flower-spike appears. These should now be starting growth, and by the month of March or April the flower-spikes will be seen. *Odontoglossum nebulosum* should be grown in good peat and sphagnum moss, and when established, it should be afforded a plentiful supply of water. The temperature during the next six months should be 55° to 60°. Sometimes yellow thrips trouble this plant in a young state. If instructions on p. 11, July 1, 1893, be followed with regard to *C. Gaskelliana*, they will find the plants to grow and flower at the proper season. On January 14, 1893, p. 44, *Odontoglossum nebulosum* is mentioned, and recommended to be grown in the *O.*-Miltonia-house, where it does well, and makes fine pseudobulbs and flowers."

THE JARGONELLE PEAR.—With reference to the letter on Jargonelle Pears inserted in your paper on September 23, I remember when a boy at school in the weald of Sussex, a Jargonelle Pear-tree grew in the vicarage garden near a pond, the soil being a very stiff clay. I am not sure whether it bore much fruit, as the garden was forbidden ground. But your readers who have never read Smiles's work *The Huguenots in England and Ireland*, may like to know that those persecuted but industrious people were the first to introduce the Jargonelle Pear-tree into Portarlington, specimens of which still flourished there in 1876 in vigorous old ages. The planter was an ensign who fought at the Boyne. The immigrants also successfully introduced the "espalier." *John Colebrooke.*

MADRESFIELD COURT GRAPE RIPENING OUT-OF-DOORS.—It may prove interesting to readers of the *Gardeners' Chronicle* to learn that a Vine of Madresfield Court has ripened a good crop of Grapes out-of-doors this year, the bunches and berries being of fair size, and beautifully-coloured. The Vine in question was planted three years ago, together with a Vine of the Royal Muscadine, against the south side of the chapel tower of Longford Castle. A hole large enough to hold about 3 bushels of a compost consisting of about four parts sound loam and one of old lime-rubble was made in the concrete underneath the flagged space at the base of the wall, a hole having been cut in one of the flags for the stem of the Vines. I need hardly say that the Vine had been afforded plenty of water at the roots during the past and two previous summers. The Vine is free from mildew, and is otherwise in good condition. There are still (September 25) several nice-sized bunches of well-coloured Grapes of excellent flavour on the Vine. This Vine bore several bunches of Grapes last year, but they did not finish up anything like so well as this tropical season. Royal Muscadine has also ripened a good crop of Grapes on the same wall, but there is nothing remarkable in this fact, seeing that it is the recognised and most likely variety of Vine to ripen its fruit out-of-doors in ordinary summers. *H. W. Ward.*

ASH-SHOOTS BARKED BY HORNETS.—I send for your inspection a few sections of this year's growth of some young Ash trees that have been barked by hornets, which I thought as somewhat unusual and worthy of notice. The hornets are followed by wasps, blue-bottle flies, and butterflies, all of them appearing to derive some sort of nutriment from the already barked shoots. The trees have been planted three years, and their average height is 7 feet. The damage is chiefly confined to a small area, where growth is vigorous. As many as four hornets have been found at work together on one shoot. *William Low, Euston Garden, Thetford.*

FICUS ELASTICA.—A small plant of the above, about 4 feet high, is bearing fruit at this place. During the time that I served under Mr. Ellam, gardener, Bordorgan, Anglesea, it was nothing unusual

to have plants of *F. Parcelli* in fruit, but I never remember seeing *F. elastica* in fruit before. *C. Watkins, Glyndebourne, Lewes.* [We have occasionally seen it, and it has been figured in our volumes. Ed.]

FRUIT NOTES.

PLUM BELLE DE LOUVAIN.—This is a culinary variety of Plum which receives less attention from cultivators than its merits deserve. Coming into use early in the month of August, its fine appearance renders it a far more remunerative fruit at that time than the finest Denyer's Victoria. The fruit is almost double the size of that favourite Plum, while the flavour is quite good for a kitchen Plum. It succeeds admirably in the open, especially in soil that is inclined to be sandy. *E. M.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 26.—The show on Tuesday last at the Drill Hall, James Street, Westminster, was a good one. Large exhibits of Dahlias and other seasonable flowers, a few Orchids, and a good collection of fruits and vegetables, formed together an exhibition above the average, besides which there were several novelties in plants and in Orchids.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. H. Herbst, R. Dean, G. Stevens, C. F. Bause, C. J. Salter, J. D. Pawle, C. Jefferies, E. Mawley, H. Cannell, H. H. D'Ombain, H. B. Williams, C. Noble, and P. Barr.

Messrs. J. Cheal & Sons, Crawley, contributed a large collection of cut Dahlia blooms, representing each section. Crawley Gem is a very bright Cactus variety, rather small, but exceedingly bright. A large new variety is Duchess of York. It has good form, and the colour is a reddish-buff, the young petals are quilled, and although the petals are not so tapered as they might be, it is a good flower. Beauty of Eynsford, Sir Francis Montefiore, Kaiserin, Delicata, and many others of the well-known Cactus sorts were shown, besides a good display of show, single and Pompon varieties (Silver Flora Medal).

Another very fine lot was from Messrs. Keynes, Williams & Co., Salisbury, and they were well put up in the shape of pyramids and in boxes. A seedling show variety called Duchess of York, a good flower of rose and bronze, obtained an Award of Merit. The same distinction was given to Grand Duke Alexis, a large double decorative white—the petals are very broad and folded; and also to a Pompon named Ceres, and another called Sovereign. The collection contained many of the best varieties in each section, Bertha Mawley, a lovely violet-crimson flower, being in very good form; also the beautiful Lady Penzance, one of the best yellows ever sent out (Silver Flora Medal).

Messrs. H. Cannell & Sons, Swanley, had a group of Begonia flowers in sprays. A single one, called Fashion, is a good bronzy-yellow, and was well shown; a few double varieties were also shown (Silver Banksian Medal).

From Messrs. Pitcher & Manda, The United States Nursery, Hextable, Swanley, Kent, came a plant of *Datura cornucopia* (Horn of Plenty). It has a double flower, about 5 inches or more across the top of corolla. The exterior of corolla and petals are lilac, and the interior white, except so far as it is influenced by the lilac showing through, which has a tendency to make it appear heliotrope. The plant seems to be free-flowering and dwarf, and dense in habit (First-class Certificate).

Mr. Anthony Waterer, Knap Hill Nursery, near Woking, had some plants of *Cedrus atlantica glauca*, *Andromeda japonica*, and *Picea pungens glauca*. Both the Conifers were decidedly glaucous, and quite distinct from the types (Silver Flora Medal).

G. P. Harris, Esq., Scad's Hill House, Orpington, Kent, showed four seedling Dahlias of the show section. Cherub, a bronzy yellow variety, obtained an Award of Merit.

Mr. R. Owen, Castle Hill Nursery, Maidenhead, contributed bloom of *Chrysanthemum Vigilant* and *Canna Comtesse O. de L'Estole*, but no award fell to either of these. A few plants of *Fuchsia triphylla carminata alba* were from Mr. H. J. Jones, Ryecroft Nursery, but the variety is no improvement upon the type.

A stand of excellent new Dahlias, show and fancy, was shown by Mr. C. Turner, Slough, those receiving Awards of Merit being Mrs. Morgan, a fine show variety of tender purplish-pink, and creamy-white centre, florets tipped with purple; it resembles the older Maud Fellowes. Another was Norma, of an orange tint, with bold well-formed florets, a grand flower (Award of Merit); lastly, Octavia, a sulphur-yellow bloom with carmine tips (Award of Merit). Very nice blooms were Penelope, light purple with tips of a darker shade; and Esmond, a rich crimson. Edith Turner is a rich crimson Cactus variety, that received an Award of Merit. Five diverse lots of Pompon Dahlias came from this exhibitor; Miranda, a sulphur-yellow tipped with purple; and Captain Boyton, a very dark purple, almost black, received Awards of Merit.

Some excellent *Gladiolus* were shown by a new exhibitor, Mr. J. C. Fordy, Warkworth, Northumberland. For two dozen of fine large spikes, finely developed, not alone for a place so far north, but for any part of the country, he received a 1st prize. Numbers of the spikes were from 15 to 18 inches in length, especially fine being Atlas, Corinne, Formosa, and Dalila.

Messrs. John Laing & Son, Forest Hill, S.E., showed a group of stove plants, Cannas in bloom, &c. Of *Crotons* shown the more novel and striking in colouring were Miss Lucienne Linden, a plain leaf, 8 inches long, yellow and green; C. Marquise de Guadaira, a plain pointed leaf, green, crimson, and yellow, leaf-stalk and stem of bright red; C. Princess of Waldeck, pretty leaf of yellow and green; C. Mr. Bause, and C. Challenger. Another good plant was *Alcacia Chantrieri*, resembling A. Sanderiana, but having a less divided leaf, the general colour being much like that fine variety (An Award of Merit).

Mention may be made of *Urceolina pendula*, *Nicotiana colosea variegata*, a plant with white and green leaves, which has the merit of coming true from seed; *Guzmania tricolor*, a spike 1 foot high, with scarlet bracts and white blossoms; the beautiful *Tillandsia Lindeni*, in spathe, but without open blossom; *Vriesia psittacina*, *Caraguata cardinalis*, &c.

Mr. A. Rawlings, of the Dahlia Nursery, Romford, showed six dozen of show and fancy Dahlias, excellent examples of well-known varieties (Silver Banksian Medal).

Mr. T. Ware, Hale Farm Nurseries, Tottenham, N., showed stands of Pompon, Cactus, and single Dahlias. Cactus Dahlia Mrs. A. Peart and Pompon Florence Woolward received Awards of Merit; the former is white, and the latter sulphur-yellow, with crimson-tipped florets.

An unusually fine exhibit came from Mr. B. Ladhams, The Shirley Nursery, Southampton; it consisted of hardy perennials of species and varieties not often seen—at least, in such fine condition—at London shows. Mention should be made of the following:—*Coreopsis monstrosa*, a flower wholly rich yellow; *Helenium pumilum*, *Helianthus multiflorus* major, *Astrantia carniolica*, white and pink, a little less colour than in A. Biebersteinii; *Lychnis vespertina*, white; *Bupthalmum salicifolium*, yellow; *Erigeron macranthum*, *Gaillardia picta*, *Helenium autumnale grandiflorum*, *Dracopcephalum speciosum*, purplish-rose; *Liatris pycnostachia*, with spikes 2 feet long, of rich purple flowers; *Erigeron philadelphicus*, E. *speciosum superbum*, with lilac-coloured flowers; *Saponaria caucasica*, rose-coloured; *Tritoma MacOwani*, *Funkia grandiflora*, *Pentstemon*, *Belladonna Lily*, *Helianthus orgyalis*, yellow rays and a brown disc; a beautiful full-flowered new perpetual-flowered Pink, Ernest Ladhams, generally of the colour of Anne Boleyn Pink, but larger and fuller; Perfect Pink Lizzie Duval, rosy-purple and full; *Heliopsis scabra* major, of a distinct type in its larger flowers, which have a width of 3 inches—the height to which it grows is 4 feet (Award of Merit). For the whole group, a Silver Flora Medal was awarded.

Mr. A. Waterer, Knap Hill, Woking, had a stand of their new *Spirea* Anthony Waterer.

Messrs. J. Veitch & Sons, Chelsea, showed a large basketful of plants of *Amasonia punicea*, the blooms well shown up by some plants of *Phrynium variegatum* mixed amongst them; *Aglaonema rotundum*, a plant bearing a certain resemblance to a *Dieffenbachia*, but dwarfer than any of those, and with shining leaves of two shades of green, and leathery consistency (First-class Certificate). *Veronica hybrida Purple Queen*, came from the same exhibitors; it is a fairly hardy, bushy, dwarf plant, very floriferous, flowers dark blue, and leaves 1 inch long, by $\frac{3}{4}$ inch in width (Award of Merit). They showed a *Nepenthes mixta*, with six pitchers, of a reddish

colour, and 7 or 8 inches deep, the wings are bristly, the margin of the orifice deep crimson, striated, and shining; operculum green, strewn over with minute dark spots (First-class Certificate). A plant of *Anthurium Londinense* came from Messrs. B. S. Williams and Sons, Holloway, it carried one spathe. Messrs. Hugh Low & Co., Clapton, showed the distinct and showy *Lilium nepalense*.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. J. O'Brien (Sec.), Dr. M. T. Masters, Rev. E. Handley, T. B. Haywood, Sydney Courtauld, J. Douglas, E. Hill, C. Pilcher, and T. W. Bond.

There was a more than usually interesting show of Orchids, but by far the most novel and beautiful exhibit was a plant of *Cypripedium Charlesworthii*, Rolfe (First-class Certificate), an entirely new species, imported by Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, and exhibited by them for the first time, the exhibit coming in for a very great amount of attention and admiration. The plant in growth somewhat resembled *C. Spicerianum*, and the flowers, which are borne on scapes about 3 inches in height, are unlike any other known species. The beautiful flat upper sepal is $2\frac{1}{2}$ inches wide, broadly orbicular, white, tinged and veined over its surface with light rosy-purple, the apex alone showing a white marbling. The lower sepals are about 1 inch broad, greenish-white. The petals, which resemble those of *C. insigne*, are plain-edged, over $1\frac{1}{2}$ inch long, yellowish tinged with brown; the lip also somewhat resembles that of the *Sylhet* form of *C. insigne*, and is similar in colour to the petals. The staminode is very singular, resembling pure white porcelain, the protuberance in the centre being conical in form, and not a simple spur, as in *C. insigne*. It is an extraordinary and beautiful species. Messrs. Charlesworth & Co. also exhibited in a small group *Cypripedium Spicerianum*, *C. x Euryandrum*, *C. insigne Wallacei*, *C. tonsum*, *C. x Morganii*, *Lælia tenebrosa*, *Vanda cœrulea*, *V. Sanderiana*, &c. (Vote of Thanks).

Messrs. F. Sander & Co., St. Albans, exhibited a select group of Orchids, in which were *Calanthe cuculigoides*, a rare yellow-flowered species; *Dendrobium Fairfaxii*, *Aërides Rohanianum*, *Cœlogyne ocellata maxima*, some fine *Oncidium Jonesianum*, *Cattleya aurea* in variety, *Oncidium cornigerum*, *O. bracteatum*, *O. trulliferum*, *Catasetum purum*, varieties of *Dendrobium Phalaenopsis Schroderianum*, the pretty *Lælio-Cattleya porphyrites*, with light rose-coloured flowers, the front and tips of the side-lobes of the lip being purple. The firm likewise showed a singular-looking hybrid, *Lælia x Sanderæ* (*xanthinum* ♀, *Dormaniana* ♂), whose single flower partook much of the characteristics of *L. xanthinum*, the sepals greenish-yellow, lip white, with a flat dark rose-coloured front lobe (Vote of Thanks).

A group of Orchids was shown by Messrs. Hugh Low & Co., consisting of *Cypripedium bellatulum*, *C. x Harrisianum*, *C. tonsum*, *C. x marmorophyllum*, *C. x Seegerianum*, *C. x picturatum*, *C. x Brayanum*, and the singular *Phalaenopsis violacea bellina* (nearly white flowers), *Cattleya maxima*, *Vanda cœrulea*, &c. (Vote of Thanks).

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), again showed the pretty *Cattleya x Parthenia*, the singular *Cattleya bicolor cœrulea*, with a slaty-blue front to the lip; a good form of *Cattleya Alexandræ*, and *Cypripedium Anthurium superbum*.

From Messrs. W. L. Lewis & Co., Chase Side, Southgate, came two hybrid *Cattleyas*, each of which was obtained by crossing *C. Harrisoniæ* with *C. gigas Sanderiana*. That named *C. x Johnsoniana* had flowers resembling those of a small *C. Schroderæ*, and with but a small amount of colour in the lip; the other named *C. x Ashtoniana* was of the same form as the former, but the front of the lip was of a rich velvety-crimson colour. This firm also sent a neat form of *Cattleya Loddigesii* named *C. L. Pugetiana*.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr., Mr. W. Stevens), sent spikes of several varieties of *Cattleya Alexandræ*, the best which have yet been shown, one variety with a metallic-bronzy hue over the segments, being especially distinct (Vote of Thanks).

W. E. Brymer, Esq., Ilington House, Dorchester, sent a fine spike of *Cattleya Brymeriana*, which received a First-class Certificate in May, 1889.

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., in *Lælio-Cattleya x Blesensis* (*C. Loddigesii* ♀, *L. pumila*

Dayana ♂), showed a very pretty, free-growing, profuse-flowering and interesting hybrid. The plant has the stature and free growth of *C. Loddigesii*, but with brighter green leaves. The flowers, which are larger than those of *C. Loddigesii*, are produced in threes and fours, the sepals and petals rosy-lilac, and the crimped front and edges of the side lobes of the lip rich dark purple (Award of Merit).

Messrs. B. S. Williams & Son also showed *Cypripidium x Cythera* and *C. x Amandum*. Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Howes), showed a well-flowered plant of the singular *Catasetum Gnomus* (Botanical Certificate). Messrs. Pitcher & Manda, United States Nurseries, Hextable, Swanley, Kent, showed *Cypripedium x radiosum*, Short Hills var.

Mr. P. McArthur, The London Nurseries, Maida Vale, staged a small group of Orchids, among which were *Vanda Sanderiana* and *V. S. pallida*, a fine variety of *Cattleya Loddigesii*, two fine plants of *Cœlogyne Massangeana*, some good *Odontoglossum crispum*, *Oncidium Jonesianum*, and hybrid *Cypripediums* (Vote of Thanks).

E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr., Mr. H. Holbrook), showed four distinct varieties of *Dendrobium Phalaenopsis Schroderianum*, that named "Ashworthia" being almost pure white; *D. P. S.* var. *Beatrice Ashworth* was a charming variety, with several spikes, the sepals pure white, the petals tinged with rose, and the lip white and crimson. The plant was well grown, and a Cultural Commendation was awarded.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), showed the fine *Lælia elegans*, Ingram's var., of the "Turneri" section, and on which the late Professor Reichenbach commented in the pages of the *Gardeners' Chronicle* as being a distinct variety of the old importation. The flower is of the largest of its class; the petals broader and more flat than other varieties, but the chief feature is the large and long front lobe of the lip, which is of a glowing crimson colour (Award of Merit). Mr. Jas. O'Brien, Harrow-on-the-Hill, showed *Satyrium membranaceum*, and *S. eriocarpum* very strongly grown; and the pretty light blue and spotted *Brownleea cœrulea*, which is figured in Bolus' new work on African Orchids (Botanical Certificate).

Fruit Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. J. Lee, G. Bunyard, G. Goldsmith, G. Taber, J. T. Saltmarsh, W. Warren, J. Wright, A. Dean, A. H. Pearson, J. A. Laing, G. H. Sage, G. Reynolds, W. Iggulden, G. Wythes, J. Hudson, W. Balderson, J. Smith, R. Hogg, W. Wilks, Harrison Weir, H. J. Pearson, and J. Cheal.

Mr. Owen Thomas, The Royal Gardens, Windsor, sent eighteen capital fruits of Pine-apple, some of the Smooth Cayennes weighing as much as 9 lb.; also a few fruits of *Cydonia japonica*, sometimes used for preserving (Silver-gilt Knightian Medal).

The Earl of Cork and Orrery, Marston House, Frome, Somerset (gr., Mr. W. Iggulden), exhibited a collection of Pears, the weight of some of them being affixed to the dish. Five fruits of *Beurré Clairgeau*, for instance, weighed 4 lb. 12 oz. The heaviest fruit of *Beurré Rance* was 13½ oz. Five fruits of *Pitmaston Duchess* were 5 lb. 15 oz. (not exceptional), the same number of fruits of *Van Mons. Léon Leclerc* being 4 lb. 6 oz. *Duchesse d'Angoulême* was not extra large, five fruits weighing 4 lb. 2 oz., whilst *General Todleben* was 5 lb. The heaviest fruit of *Glou Morceau* weighed 14½ oz. (Silver Knightian Medal). The same exhibitor had a dish of excellent *Doyenné du Comice* Pear, which was awarded a Bronze Banksian Medal.

From the Dowager Lady Freake, Fulwell Park, Twickenham (gr., Mr. A. H. Rickwood), came a collection of Apples and Pears in seventy dishes (Silver Banksian Medal).

Messrs. H. Cannell & Sons, Swanley, staged an excellent collection of vegetables, including almost all kinds now in season. Onions were nice clean samples of *Ailsa Craig*, *Cannell's Globe*, *Anglo-Spanish*, *Improved Wroxton*, *Rousham Park Hero*, and *Somersetshire Hero*. There were nice young Cabbages, *Leeks*, *Marrows*, *Savoy*, *Red Cabbage*, *Autumn Giant Cauliflower*, *Carrots*, *Cannell's Intermediate*, *Cannell's Improved Shorthorn*, and *Cannell's Improved Nantes*, *Beet*, *Turnips*, *Parsnips*, *Salsafy*, *Beans* (*Runner* and *French*), *Tomatoes*, *Peas*, *Artichokes*, *Stachys tuberifera*, and *Shallots* were also included. A few Brussels Sprouts were very early and in capital condition, having Sprouts ready for the table on stems at least 2 feet high. Mr. Cannell

obtains early Sprouts by sowing part of the crop in the autumn, and his seed for next season's plants is already sown. This system he very strongly recommends, as being the means of securing Sprouts ready for table in September. Also a collection of Potatoes of good size and quality, although a little rough-looking, perhaps from the fact of them having been grown in flinty soil; also about forty dishes of Apples (Silver Knightian Medal).

The Messrs. de Rothschild, Gunnersbury Park, Acton, W. (gr., Mr. Reynolds), contributed twenty fruits of Melons, all very fine well-grown fruits, mostly seedlings. Three of the finest were from a cross between *Triumph* and *Hero of Lockinge*; the largest of these fruits weights 10 lb. 2 oz. (Silver Banksian Medal).

From J. Nix, Esq., Tilgate Manor, Crawley (gr., Mr. Dibben), came a collection of Pears in about thirty dishes (Silver Banksian Medal).

Sir E. Loder, Leonardslee, Horsham (gr., Mr. Goldsmith), showed a dish of Pomegranates (Vote of Thanks). Mr. Jno. Chinnery, The Gardens, Downton Castle, Ludlow, had a fine collection of fruit. His Apples, *Mère de Ménage*, *King of the Pippins*, *Cox's Orange Pippin*, *Ribston Pippin*, *Alexander*, and his Pear *Marie Louise* were very good, also half-a-dozen dishes of Plums, and a collection of Onions (Silver Banksian Medal).

W. H. Evans, Esq., Forde Abbey, Chard, Somerset (gr., Mr. John Crook), sent some Apples and Plums; his *King of the Pippins*, *Cellini Pippin*, *Cox's Orange Pippin*, and *Striped Beefing* were large and good. The only award granted by the committee on this occasion was to an American variety of Apple called *Wealthy*, and exhibited by Mr. Molyneux, Swanmore Park Gardens, Bishop's Waltham; it is of good size, well-coloured, and soft flesh, suitable for table, but strictly speaking a culinary Apple (Award of Merit).

Seedling Melons were from Jas. Lye, Esq., Cliff Hall, Market Lavington, Wilts, and from Sir Jno. H. H. Amory, Knightshayes Court, Tiverton, Devon (gr., Mr. Grigor).

GARDENING AND FORESTRY EXHIBITION.

SEPTEMBER 27, 28 and 29. — The last of the special exhibitions was opened on Tuesday last. The schedule was devoted entirely to fruit and vegetables, and the show was the best that has been held here during the season. The competition was wonderfully keen, and in Pears and Apples especially the judges had very difficult work. The competitive exhibits completely filled the usual tent, and there was a great quantity of non-competitive produce in the main building.

Open Classes.—In the first class for twenty-four kinds of dessert Apples, Messrs. Geo. Bunyard & Co., The Old Nurseries, Maidstone, were 1st, with very fine fruit of capital colour, *Cox's Pomona*, *Worcester Pearmain*, *Blenheim Orange*, and *Swedish Reinette*, were the prettiest dishes. The 2nd place was taken by Mr. H. Berwick, Sidmouth Nurseries, North Devon, who included good dishes of *Blenheim Orange*, *Wealthy*, and *Jefferson*; Mr. Jno. Scott, The Royal Nurseries, Merriott, Somersetshire, was 3rd.

Messrs. Bunyard & Co., were again adjudged 1st for a collection of culinary Apples, in forty-eight dishes (distinct). The best of this collection, which was of first-rate merit, were *Cox's Pomona*, *Lane's Prince Albert*, *Newton Wonder*, *Tyler's Kernel*, *King of Tomkins County*, *Gascoigne's Seedling*, and *Striped Beefing*. Mr. Geo. Woodward, Barham Court Gardens, Maidstone, was an excellent and close 2nd; his *Peagood's Nonsuch*, *Cox's Pomona*, *Gascoigne's Scarlet*, *Brabant Bellefleur*, *Mère de Ménage*, *Alexandra*, and *Queen Caroline* were splendid. Mr. John Scott was 3rd.

For twelve dishes of dessert Apples, Messrs. Bunyard & Co. led with very beautiful fruits, especially noticeable were *Swedish Reinette* and *King of the Pippins*; Mr. Geo. Woodward again was 2nd.

In the culinary class for same number of dishes the positions were reversed, Mr. Geo. Woodward being 1st and Messrs. Bunyard & Co. 2nd; Mr. H. Berwick was 3rd. The whole of the fruit was fine.

The next class was one for a table of hardy fruits, 12 feet by 6 feet, arranged for effect. Messrs. T. F. Rivers & Son, Sawbridgeworth, who were awarded a 1st prize, staged a remarkably attractive collection. The table was laden by every variety of fruit that could be had at this season from the garden, and of the best quality. The background was composed of

a group of Bijou Apple trees covered with the lovely fruits, looking almost as if they had been placed on, so regular did they appear.

Mr. Geo. Woodward secured 1st place for twenty-four dishes of Pears (distinct), and amongst a grand lot the following were the best:—General Toddleben, Pitmaston Duchess, Louise Bonne of Jersey, Durandean, and Beurré Hardy; Mr. G. Goldsmith, gr. to Sir E. G. Loder, Bart., Leonardslee, Horsham, was 2nd; and Mr. W. Iggulden, gr. to the Earl of Cork, Marston House, Frome, Somerset, was 3rd.

Mr. A. Offer, Handcross Park Gardens, Crawley, was 1st, for twelve dishes; his best were Souvenir du Congrès, Doyenné Boussoch, and Doyenné du Comice. Mr. R. Smith, Presdales Gardens, Ware, Wilts, was a good 2nd.

Messrs. Geo. Bunyard & Co. secured 1st for twelve dishes of Apples and Pears, grown in an orchard-house, with a thorough good collection; Messrs. T. F. Rivers & Son, Sawbridgeworth, were 2nd, also showing well; the Apples in this exhibit were wonderful, but the Pears were rather weak.

Mr. George Woodward was 1st for three dishes of dessert Apples, showing Cox's Orange Pippin, Washington, and Ribston Pippin, the last-named being quite a perfect dish; Mr. Jas. Hall, Croscombe, Wells, Somerset, was 2nd; and the English Fruit and Rose Co., Hereford, 3rd, out of a great number of entries.

In the similar class for culinary Apples, the 1st place was taken by Mr. J. Nicholson, gr. to J. W. Melles, Esq., Sewardstone Lodge, Chingford, the best dish being Peasgood's Nonsuch; Mr. W. Cotterill, gr. to Captain Harcourt Rose, Oxon Heath, Tonbridge, was 2nd. For three dishes of Peaches, Mr. Woodward was 1st, with fine Palmerston, Sea Eagle, and Nectarine; Messrs. T. F. Rivers & Son were 2nd; and Mr. A. Offer 3rd. For one dish, Mr. W. Fairweather, gr. to J. A. Millen, Esq., Bifrons Park, Canterbury, was 1st, and Mr. Woodward 2nd. Messrs. T. F. Rivers & Son were 1st for six dishes of Plums; and in the class for two dishes, Mr. C. J. Waite, gr. to Colonel W. P. Talbot, Glenhurst, Esher, was 1st; Mr. R. Smith followed.

Amateurs.—Mr. Geo. Woodward led in the class for twenty-four dishes of Apples, including eight dessert and sixteen culinary varieties, showing much the same quality as he had in the open classes. Mr. G. Goldsmith 2nd, and Mr. Geo. Chambers, Beech Farm, Mereworth, Maidstone, 3rd.

For twelve dishes of Apples, four of dessert, and twelve culinary, the 1st place was to Mr. S. H. Goodwin, Smartwell, Kent. They were a beautiful lot, and well coloured, Peasgood's Nonsuch, Worcester Pearmain and Cox's Pomona especially so. Mr. J. Austin T. Killick, Weaving, Maidstone, was 2nd; and Mr. Goldsmith 3rd. For six dishes of dessert Apples Mr. Geo. Chambers, Beech Farm, Maidstone, was 1st, and Mr. R. Potter, gr. to Sir M. Collet, Bart., St. Clare, Kemsing, Sevenoaks, 2nd.

In a similar class for culinary, Mr. W. Minifie, Beatlands, Sidmouth, Devon, was 1st; and Mr. Geo. Chambers, 2nd.

Mr. Goldsmith led for twelve dishes of Pears, Pitmaston Duchess, and Marie Louise d'Uccle being very fine in this stand; 2nd, Mr. W. Allan, gr. to Lord Suffield, Gunton Park, Norwich; 3rd, Mr. Geo. Woodward.

For six dishes, Mr. W. Wiles, gr. to Mrs. Phillips, Unsted Park, Godalming, was 1st; and Mr. Dean, gr. to G. L. Gower, Esq., Titsey Place, Lumpsfield, 2nd.

For two dishes of Plums, Mr. Goldsmith was 1st; and Mr. Jas. Friend, gr. to Hon. P. C. Glynn, Rooknest Gardens, Godstone, 2nd.

Vegetables.—These were well shown. Mr. Thos. Wilkins, gr. to Lady Theodora Guest, Hensbridge, near Blandford, who was 1st, staged a first-class collection in every respect; Mr. C. J. Waite, was 2nd. The remaining three classes were for Tomatoes, one for a collection of not more than twelve dishes, and a class each for one dish of red and yellow varieties. In all three the 1st prize was secured by Mr. E. Ryder, The Nurseries, Orpington. Mr. H. Deverill, Banbury, had a collection of Onions; Mr. Henry Merryweather, Southwell, a quantity of Bramley's Seedling Apple; Mr. Robert Grigor a number of fruits of Pitmaston Duchess Pear, the heaviest fruit weighing 25 oz. A collection of Tomatoes were from Mr. J. Strong, gr. to P. R. Morse, Esq., Wickham, Witham, Essex; and a collection of vegetables from Mr. Walter Salmon, Ivy Cottages, Elder Road, West Norwood.

Miscellaneous.—The exhibits in this section were exceedingly numerous, and we can only mention

some of the larger and more interesting ones. Messrs. T. F. Rivers & Sons, had a collection of fruit, including Grapes; Messrs. Rothschild, Gunnersbury House, Acton (gr., Mr. Reynolds), showed twenty good fruits of Melons.

Some good Black Alicante Grapes came from Mr. T. M. Le Pelley, Rusper Valley Vineries, Rusper, Sussex. Mr. Chas. Turner, Slough, showed a splendid dish of Mère de Ménage Apples, the five fruits weighing 5 lb. 5½ oz., and the heaviest fruit 22½ oz. Mr. Chas. Terry, Tatton Park, Kantsford, sent a number of Pine-apples; and Mr. W. Mancey, gr. to A. D. Druce, Esq., Upper Gattton, Redhill, ten fruits of Pitmaston Duchess Pear, weighing 17 lb. 6 oz.; heaviest fruit, 2 lb.

A large collection of fruit was shown by Messrs. John Laing & Son, Forest Hill, S.E., by S. Spooner & Sons, Hounslow; Mr. T. A. Heister, gr. to W. G. Dawson, Esq., The Links, Plumstead Common; Mr. John Watkins, Hereford; Messrs. W. Paul & Son, Waltham Cross, also Roses, &c. Messrs. J. Cheal & Sons, Crawley, with fine pyramids of Dahlias as a background for the fruit. Messrs. James Veitch & Son, Chelsea; Messrs. George Bunyard & Co., Maidstone; and Mr. H. Berwick, Sidmouth Nurseries, North Devon.

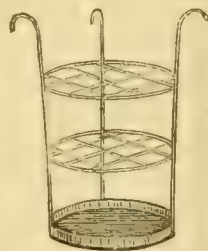


FIG. 65.—THE "MARTIN" FLOWER RACK.



FIG. 66.—THE "MARTIN" FLOWER-RACK IN VASE.

Messrs. Jas. Veitch & Sons, Chelsea, had a splendid collection of Nepenthes; also some blooms of Rhododendron hybrids, Streptocarpus hybrid, Cyrtopodium, and sprays of ornamental shrubs. Messrs. W. Innes & Co., Sunny Hill Vinery, Littleover, Derby, staged a collection of first-class Grapes which had been grown by the aid of their Fertiliser. There were some Dahlia blooms from Mr. A. Rawlings, Romford, and some Begonia blooms from Messrs. H. Cannell & Sons, Swanley, as well as a large collection of vegetables from the same firm.

NEW INVENTION.

THE "MARTIN" FLOWER-RACK.

THE patented invention, of which we give illustrations, is likely to prove of value to exhibitors of cut flowers, as well as for table decorations, in regulating the position of flowers in vases, bowls, cups, &c., and exhibiting them to the best advantage. The rack can easily be filled before placing it in the

vase, which may be of any shape, as the flexible supports of the rack can be bent to any position. It can also be utilised, suspended by wire, for the display of dried flowers and grasses, the outside of the rack being covered with a little green moss. The manufacturers and patentees are Messrs. Corry & Co., Limited, of Finsbury Street, London, E.C.

SCOTLAND.

FRUIT NOTES, ETC., FROM NORWOOD, ALLOA.

AMONG the suburban residences north of the Forth, few can surpass the beautiful home of Mr. Paton, who is held in such high esteem in and for a long distance around Alloa. But it is a brief reference to some of the chief items of interest in the beautiful gardens of that justly-popular gentleman, we now submit. Often have we been asked of late "how our friend Kirk is looking?" which means the fruit and other highly-cultivated things in the gardens, under the charge of that well-known enthusiast, a winner of six hundred prizes.

We are now (after a pleasant visit on June 5) able to state that the fruits under glass were never in better condition than they were this season. The Grapes were as near perfection as we have ever seen Grapes anywhere. Though the vineries are not large structures, they are all returning their full quota, and if "Wee Kirk" (as his special friends address him), did not take the lead at the shows where he intended exhibiting this season, those who beat him with their exhibits deserve great credit.

Passing through houses, narrow, and somewhat confined, great crops of Melons were seen. Their roots are growing in narrow beds, which render the plants manageable and very fruitful; and food, (liquid and solid), can be supplied with a liberal hand. The roots being encased in the firm soil consume a deal of nutriment, which tells very favourably on the fruit. Hero of Lockinge, Windsor Castle, and Sutton's Monarch, among other sorts for general use and comparing notes, are valued most.

A good exterior commends a Melon, but that quality only never ensures a welcome by connoisseurs. Tomatoes are cultivated in narrow root-space with much success; and now that their name is legion, one cannot with much safely single out a small number of sorts which are preferable to all others. We could discern no appreciative difference in Mr. Kirk's fine crops. As we wished to see the Grapes, we passed through the Pine-houses, onward in front of five hundred Chrysanthemums in great vigour, and pits full of Primulas, Carnations, Cinerarias, and other plants grown in quantity for winter decoration of conservatory, rooms, and flower-houses. No. 1 vinery, with Vines not quite established: there were bunches very perfect in form, from 3 lb. to 6 lb. weight, grandly coloured, and berries of great size. Black Hamburg, Madresfield Court—not a cracked berry to be seen; Muscat Hamburg, Buckland Sweetwater; Foster's Seedling were ripe, and certainly pictures of first-rate cultivation. It was noticeable that the strongest Vines (none were extra gross), did not bear the finest fruit. No. 2 was filled nearly to the apex; back and front was a picture of Grape-culture, which could not be quickly forgotten. Bunches, mostly of the same form and size on each Vine, nearly equal, were like those of No. 1, first rate. The varieties grown are Duke of Buccleuch, 3 to 4 lb. weight, Gros Colmar, Gros Maroc, Muscat of Alexandria, and Golden Queen. No. 3 vinery had Bowood Muscat, Bowood Alexandra, Cooper's Black and Madresfield Court, well advanced towards the ripening stage. Mr. Kirk believes in early maturation when the question of keeping is of moment. No. 4, and the latest house, contained capital Lady Downes, Alicante, Gros Maroc, equal to the other crops, with strong dark green foliage. It was noticed that two of the vineries had been turned into Peach-houses, in which were Hale's Early (ripening), Stirling Castle, and Barrington Peaches, receiving careful cultural attention. In other houses were large numbers of foliage plants, such as Dracenas and Crotons in fine colour, and cool and warm Orchids filled two small houses. Masdevallia and Odontoglossum were remarkable for vigour. The conservatory was very gay with finely-grown Pelargoniums, Tuberous Begonias, Palms, and other popular decorative plants. Such plants as Azaleas for winter service were in fine condition, which Mr.

Kirk helps materially with favourite manures. Cherries on the walls were large and in quantity. Small fruits and Strawberries were abundant, but Apples had not turned out as expected. Begonias on the parterre were conspicuous for their large flowers; and other outside decoration was on a par with other departments.

PLANTS FROM KEIR AT EDINBURGH.

Conspicuous among the plants exhibited by Mr. Lunt, of Keir Gardens, Dunblane, at the Royal Caledonian Society's show, were specimens of unusually high cultural merit, and as some of the leading newspapers state, "carried all before them," *Croton Chelsonii*, 7 by 5 feet; *C. Holdsworthii*, do.; *Dracæna Youngii*, 7 by 6 feet; *Alcacia metallica*, 6 feet across; *Dieffenbachia Bausei*, 4 feet 6 inches through; *Anthurium Veitchii* with leaves $4\frac{1}{2}$ feet long; two immense *Dracænas* *Shepherdii* and *Baptistii*, we do not know their size, but health and colouring were of the highest order; of great size were *Palms* *Areca Bauerii*, *Kentia Belmoreana*, *K. Fosteriana*, *Rhaphis flabelliformis*, and *Areca lutescens*, and a *Cycad* 9 feet through. Mr. Lunt, as reported in Edinburgh papers, received a medal for high culture. Now that this clever cultivator has made his *début* in Edinburgh with plants (he has been a successful exhibitor of fruits for some years), he will be looked for in the future, and welcomed by lovers of plants such as are really creditable at exhibitions like those promoted by the Royal Caledonian Society. *M. T.*

TECHNICAL EDUCATION IN HORTICULTURE.

ALTHOUGH it may be a new thing for County Councils to offer prizes for the nicest-kept and best-cropped gardens, as Mr. D. T. Fish suggested recently in these pages, it was part of a system practised in my own knowledge by some school-managers of over thirty years ago. When a boy a school, in a quiet Oxfordshire village, I had my small plot, and was not a little proud of the commendations received for my method of cultivating it; and it may be said that any encouragement offered in this way gives rise to a desire to acquire further knowledge on the part of the recipient. Horticultural societies in rural districts can do much towards increasing a taste for gardening amongst cottagers, by offering prizes for the best-kept garden; in fact, I know of no better way of improving the cultivation of their gardens than by offering money-prizes to those *bonâ fide* cottagers. Some persons may retort, but what is a *bonâ fide* cottager? Well, it is perhaps a difficult question to answer. I have filled for the last ten years the office of secretary to a society which is mainly intended for the improvement of cottage-gardens in this neighbourhood, and have therefore had much opportunity of observing the progress which has been made by some of the competitors. We have two classes of competitors whose status is defined by the amount of wages earned, and which does away with the jealousy that arises when some are handicapped by their neighbours who happen to be in receipt of higher wages, and have therefore an advantage in the matter of purchasing seeds and plants.

The two classes are defined thus—those whose regular weekly wages exceed 15s., and those who are not in receipt of that sum. The spirit of emulation is keen in the cottage gardener, and they will try hard not to be beaten by their neighbours, working laboriously to improve their gardens in their spare moments. According to my experience of teaching horticulture by means of lectures, something is required beyond speaking; the mere matter of preaching to them, as it were, is not sufficient to interest them. If County Councils were to instruct their teachers to give demonstrations on the platform in such subjects as the pruning of fruit trees, including root-pruning, preparatory to planting them, and the best means of staking the trees, much real good would be done. It is not merely a question of how many bushels of Potatoes ought to be produced from so much land; nor how much a cottager should get for his fruit crop—but how such crops are best obtained, and the best methods to pursue. A few practical demon-

strations of this kind would do much more towards enlightening the hearers than the chatter that some lecturers indulge in. Plenty of cottagers in rural districts can judge the amount of practical knowledge possessed by the lecturer more accurately than he supposes, and if they discover that his teaching is largely based on theory, the impression that he will make on them is not lasting. Lectures without demonstration are almost valueless in teaching cottagers how to manage their gardens, they know perfectly well that the lecturer would not know how to do the work he professes to teach them. *E. Molyneux.*

— It seems at this time of day almost superfluous to dispute either that there is a need for, or a benefit derived from, technical education. But as an example of the need of such teaching, I would quote from that excellent magazine, *Work*, where, on p. 247 of the June number, we find this note:—"According to the report of the London County Council, by Mr. Llewellyn Smit, apprenticeships have practically died out in all trades excepting a few, such as shipwrights and barge-builders, so far as London is concerned." He adds that workmen he has come into contact with have been practically unanimous in thinking that the old system cannot be revived, and that technical education, imparted through classes, must in future take its place.

But apart from the consideration of such questions as those involved in the above statement, any thinking person must be struck with the fact that so-called education does not produce, or tend to produce, that all-round development of the bodily and mental capacities as intelligent persons desire. There is no doubt, owing greatly to the dull and rigid routine of our elementary schools, where memory takes the place of thinking, and the standard of attainments required, seems to indicate that boys and girls are supposed to turn out a mongrel—something between a clerk and a philosopher. The training of the children in the elementary schools seems chiefly to fail in not teaching them the common facts of every-day life. But as soon as we begin in the technical school to teach them how to do something, daylight and hope begin to dawn on us.

Of what use is it to teach children how to add up thousands of pounds? But when we see a child able to darn its stocking, or sharpen a knife, there seems to be a clear gain to the child and humanity itself.

Now the experience of practical men in this immediate neighbourhood is most encouraging in respect of the acceptance and result of technical education. The first season it was put into working order, the attendance was very small, hardly making an average of ten. But this last season has seen an average attendance of thirty, taking several villages together; and about 400 at Wolverton. At the lectures attended by these people, instruction was given by practical and proficient men in bee-keeping, fruit-growing, and vegetable culture, and diagrams, implements, apparatus, and specimens of growths for pruning were handled before the spectators, and at intervals, under the control of the chairman, the audience were encouraged to enter into discussion on points raised by the lecturers.

One important subject handled was the method of the prevention and cure of insect pests and diseases of fruit trees and general crops, and, considering the ravages of the Gooseberry-sawfly for the two last seasons, it is a matter of congratulation that the lectures made the matter so clear, and gave it so prominent a place. Since the spread of this information, people take a hint much more readily regarding the method of dealing with these diseases and pests, and several cottagers have saved their crops by following instruction based upon information given at these lectures.

So much good has already resulted from the practical and sociable way in which the instruction was imparted—for in some cases a little music and recitation helped to draw and keep the people together—that it is to be hoped next winter will see a further development of this form of teaching a knowledge of matters of every-day use, and if the allot-

ment-holders of the neighbourhood can be influenced to the same extent as the men at Wolverton, who work small patches of land there, a decided advance will be soon manifest in the methods of work, and better crops, the outcome of intelligently-directed effort.

It remains to be seen that fuller demonstrations are afforded of methods of pruning, and courses of tillage, the management of bees, &c., during the summer months, and thus we may hope that the intelligence of our rural population will steadily increase. *J. Milsom.*

Obituary.

DEATH OF MR. G. BOGUE.—Many will hear with regret of the death of Mr. George Bogue, of 10, Hill Street, St. Albans, which took place, at the age of 86 years, on Tuesday, September 19. Mr. Bogue was a native of Lanarkshire, and came to St. Albans as head gardener to Lord Verulam, at Gorhambury, about forty-six years ago, and remained in his lordship's service for twenty-eight years. In his time Mr. Bogue was a gardener of some repute, and used frequently to contribute articles to the *Journal of Horticulture*; while for many years he supplied annually to this paper a rainfall table. The deceased, during his connection with Gorhambury, was a member of the committee of the Royal Horticultural Society, and seldom failed to attend their monthly meetings in London; and in the latter years of his life the deceased often referred with pride to this, and would speak in glowing terms of the times when he had sat at a committee meeting with the late Prince Consort. During the last eighteen years Mr. Bogue had lived a life of retirement. The funeral took place at St. Michael's Church, St. Albans, on Saturday, September 23.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	ACCUMULATED.					More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
	Above (+) or below (—) the Mean for the week ending September 23.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.				
0	4 —	34	0	+ 556	— 57	14 +	170	32.8	18	25
1	3 —	46	0	+ 353	— 22	5 +	136	18.6	22	33
2	2 —	65	0	+ 428	— 62	3 —	114	14.0	40	37
3	2 —	79	0	+ 479	— 37	5 —	111	12.8	33	44
4	2 —	69	0	+ 630	— 49	5 —	109	13.4	38	42
5	2 —	87	0	+ 549	— 43	2 —	106	13.7	27	46
6	3 —	53	0	+ 493	— 63	3 —	134	24.9	34	38
7	2 —	71	0	+ 689	— 91	3 +	123	19.2	29	37
8	2 —	73	0	+ 639	— 70	2 —	111	20.5	30	48
9	3 —	57	0	+ 560	— 101	3 +	146	23.0	36	32
10	5 —	57	0	+ 611	— 100	2 —	126	21.1	41	57
"	2 —	100	0	+ 808	— 52	9 +	117	18.0	28	67

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 23, is furnished from the Meteorological Office:—

"The weather during this period became cold and unsettled, especially in the northern and north-western parts of the kingdom, where heavy rain was experienced, with sleet or snow towards the end of the week. In most other localities the rainfall was comparatively slight, but in the 'Channel Islands,' where an appreciable quantity was measured daily, the aggregate fall was large. Thunder and lightning occurred over 'England, S.' during the middle or latter part of the week.

"The temperature was below the mean, the deficit ranging from 2° in most parts of England, to 3° or 4° in Scotland, and to 5° in 'Ireland, S.' The highest of the maxima, which occurred during the early days of the week, ranged from 70° in 'England, E.' to 61° in 'Scotland, W.,' and 60° in 'Scotland, N.' Later in the week the daily maxima were very low, the thermometer at some stations not reaching 50°. The lowest of the minima were recorded between the 21st and 23rd, and ranged from 29° to 31° in Scotland, from 28° to 34° in Ireland, and from 30° to 37° in England. In the 'Channel Islands' the lowest reading was 45°.

"The rainfall was greatly in excess of the mean in 'Scotland, N.' and the 'Channel Islands,' and considerably in excess in 'Scotland, E.,' 'England, N.W.,' and 'Ireland, N.;" in all other districts, however, there was again a deficit.

"The bright sunshine was much less prevalent than during the preceding week, but still exceeded the normal in 'Ireland,' 'Scotland, W.,' the 'Midland Counties,' and 'England, N.E.' The percentage of the possible amount of duration ranged from 41 in 'Ireland, S.,' and 40 in 'England, N.E.,' to 27 in 'England, S.,' 22 in 'Scotland, E.,' and to 18 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, September 28.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

PRICES rule as last week.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Ficus elastica, each	1 6-7 6
Aspidistra, per doz.	15 0-30 0	Foliage plants, doz.	12 0-42 0
— specimen, each	7 6-21 0	Fuchsia, per doz.	4 0-6 0
Asters, dozen pots...	4 0-9 0	Heliotrope, per doz.	4 0-6 0
Begonias in pots, doz.	8 0-12 0	Hydrangea, per doz.	12 0-24 0
Balsams, per doz.	3 0-6 0	Ivy Geranium, doz.	4 0-6 0
Campanula, per doz.	6 0-12 0	Lilium Harrisii...	18 0-24 0
Chrysanthemums, doz	6 0-9 0	— lancifolium, dz.	12 0-18 0
— large plants, each	1 6-2 0	Marguerite, per doz.	6 0-12 0
Cypripedium, per dozen	4 0-10 0	Mignonette, doz. pots	4 0-6 0
Dracena, each	1 0-5 0	Palms, various, each	2 0-10 0
Erica caffra, per doz.	9 0-15 0	— specimens, each	10 6-8 4 0
Ferns, various, doz.	4 0-9 0	Pelargonium, p. doz.	6 0-12 0
Ferns, small, per		— scarlet, p. doz.	3 0-8 0
100 ...	4 0-6 0	Solanums, per doz...	9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	6 0-9 0	Orchids:—	
Aster, dozen bun.	3 0-6 0	Cattleya, 12 blms.	6 0-12 0
Bouvardias, per bun.	0 6-1 0	Odontoglossum	
Carnation, doz. bun.	4 0-9 0	— crispum, 12 blms.	2 0-6 0
— dozen blooms	1 0-2 0	Peas, Sweet, various,	
Chrysanthemums, 12		doz. bunches...	3 0-6 0
bunches ...	4 0-8 0	Pelargoniums, scar.	
— doz. blooms ...	0 6-2 0	— let, p. 12 bun.	3 0-6 0
Cornflower, 12 bun.	1 0-2 0	— 12 sprays ...	0 6-0 9
Dahlia, doz. bun.	2 0-4 0	Poppy, doz. bunches	— 1 6
Eucharis, per dozen	6 0-9 0	Primula, dble. p. bun.	0 8-1 0
Gardenia, per dozen	3 0-6 0	Pyrethrum, 12 bun.	2 0-4 0
Heliotrope, 12 sprays	0 3-0 4	Roses, doz. bunches	3 0-8 0
Lilium lancifolium,		— Tea, per dozen	0 6-2 0
p. doz. blooms	3 0-6 0	— coloured, dozen	2 0-4 0
— Harrisii, p. doz.	2 0-5 0	— yellow (Maré-	
Maiden Hair Fern,		chals), per doz.	1 6-6 0
12 bunches ...	4 0-6 0	— red, per dozen...	1 0-1 8
Marguerite, 12 bun.	1 6-3 0	Stocks, per bunch	0 4-0 6
Mignonette, 12 bun.	2 0-4 0	Sunflower, various,	
Myosotis, 12 bunches	2 0-3 0	dozen bunches ...	2 0-6 0
Pansy, per doz. bun.	1 0-2 0	Tuberose, 12 blms.	0 4-0 6

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, per bush.	1 0-6 0	Peaches, per doz.	2 0-8 0
Cobs, per 100 lb.	30 0-...	Pine-apples, St. Mi-	
Grapes, per lb.	0 6-3 0	chael ...	2 0-5 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	0 6-...	Lettuces, per doz.	1 6-2 0
Beet, red, per dozen	2 0-3 0	Mushrooms, punnet	1 9-2 0
Carrots, per bunch...	0 4-0 6	Mustard and Cress,	
Cauliflowers, each	0 3-0 6	punnet ...	0 2-...
Celery, bundle	1 0-1 3	Parsley, per bunch...	0 2-0 3
Cucumbers, each	0 2-0 6	Shallots, per lb.	0 3-...
Endive, per dozen	1 3-1 6	Tomatos, per lb.	0 3-0 6
Herbs, per bunch	0 3-1 0	Turnips, per bunch...	0 4-0 6
Leeks...	0 4-...		

POTATOS.

In consequence of the low prices, farmers are not loading quite so heavily, which makes prices a little firmer. Best Hebrons and Snowdrops, 100s. to 110s.; Bruce, 70s. to 80s.; other kinds, 42s. 6d. to 60s. J. B. Thomas.

SEEDS.

LONDON: Sept. 27.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with but little business doing. Choice Trifolium is now obtainable at very tempting rates. Winter Tares are again dearer; it appears likely that the supply will not hold out to go round. Seed-rye is firm. There is more inquiry for Peas and Haricots. The Canary seed market daily gathers strength; doubts are expressed as to whether all the contract new seed bought can be delivered. Linseed tends upwards.

FRUITS AND VEGETABLES.

BOROUGH: September 26.—Quotations:—Cabbages, 6s. to 8s.; Cauliflowers, 5s. to 8s. per tally; Carrots, 2s. to 3s. per dozen bunches; Turnips, 1s. to 3s. 6d. per dozen bunches; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. to 5s. per bag; Damsons, 1s. 6d. to 2s. per half-sieve; Plums, 1s. 6d. to 2s. per half-sieve; Apples, 2s. 6d. to 8s. per bushel.

SPITALFIELDS: September 26.—Quotations:—Cabbages, 6s. to 8s. per tally; Cauliflowers, 5s. to 8s. per tally; Turnips, 1s. to 2s. 6d. per dozen bunches; Carrots, 2s. to 3s. per dozen bunches; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. to 5s. per bag; Apples, to 2s. 6d. to 8s. per bushel; Damsons, 1s. 6d. to 2s. per half-sieve; Plums, 1s. 6d. to 3s. per half-sieve.

STRATFORD: Sept. 26.—There has been a good supply of all kinds of produce at the above market during the past week, and a brisk trade has been done at the undermentioned quotations:—Cabbages, 4s. to 7s. per tally; Savoy, 4s. to 7s. per tally; Cauliflowers, 1s. 6d. to 1s. 9d. per dozen; do., 5s. to 7s. 6d. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 50s. to 55s. per ton; Carrots, household, 50s. to 70s. per ton; cattle-feeding, 30s. to 35s. per ton. Mangels, 20s. to 25s. per ton; Swedes, 22s. 6d. to 27s. 6d. per ton; Onions, Dutch, 5s. to 5s. 6d. per bag; Apples, English, 1s. 9d. to 4s. per bushel; Onions, 6s. to 6s. 6d. per case; Plums, 2s. 6s. to 3s. per half-sieve; Pears, 3s. to 4s. per sieve.

FARRINGTON: September 27.—Quotations:—Cabbages, 6s. to 8s.; Cauliflowers, 5s. to 8s. per tally; Turnips, 1s. to 2s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. to 5s. 6d. per bag; Horseradish, 1s. 6d. per bundle; Marrows, 1s. 6d. per dozen.

FARRINGTON: September 28.—Quotations:—Apples, 2s. to 3s. per bush.; Pears, 3s. to 5s. do. (Capiamont); Calabasse, 3s. per half-bushel; Plums, 3s. per half-sieve; Damsons, 4s. do.; Tomatos, 4s. per dozen pounds; Melons, 4s. per case.

POTATOS.

BOROUGH AND SPITALFIELDS: September 26.—Quotations ranged from 40s. to 105s. per ton.

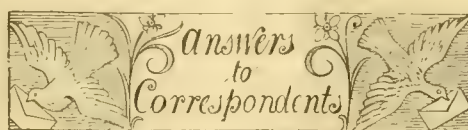
STRATFORD: September 26.—Quotations:—Light-lands, 45s. to 60s.; dark do., 45s. to 60s.; Sutton's Abundance, 60s. to 70s.; Hebrons, 70s. to 80s. per ton.

FARRINGTON: September 28.—Quotations:—Sutton's Abundance, 80s.; Snowdrops, 70s. to 80s.; Reading Grants, 50s. to 60s.; Bruce's, 50s. to 60s.; Imperators, 60s. to 65s. per ton.

LONDON AVERAGES: September 27.—Hebrons, 70s. to 90s.; Regents, 60s. to 80s.; Snowdrops, 80s. to 100s.; Champions, 40s. to 60s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending September 23, and for the corresponding period last year:—1893: Wheat, 28s. 9d.; Barley, 27s. 10d.; Oats, 17s. 9d. 1892: Wheat, 28s. 4d.; Barley, 28s. 3d.; Oats, 18s. 10d.



BOOKS: Decorator. Table Decorations, by Annie Hassard; at the second-hand bookshops.

CARNATION FUNGUS: C. & C. Puccinia Dianthi; you might try cautiously the application of the Bordeaux Mixture.

HANDICART FOR GARDEN PLANTS: E. L. Some of the horticultural sundriesmen may make them. See our advertisement columns.

HYBRID ANTHURIUM: O. O. W. We are greatly obliged for the specimens. We have seen so many seedlings of a similar character raised from inter-crossing varieties of A. Scherzerianum, that we are still rather sceptical as to the influence of the Richardia. A comparative microscopical examination of the two parents and the supposed hybrid would settle the point, but we have no time to undertake the work.

INSECT ON YOUNG LARCH TREES: Oakleaf. We can find nothing but aphides on the Larch twigs sent, and these are quite incapable of the damage to the bark. In all probability, it is the work of the destructive weevil, Hylobius abietis. R. McL.

INSECT ON CHRYSANTHEMUMS: R. O. The insects on Chrysanthemums in the daytime are a very common species of bug (Anthocoris nemorum), found on many kinds of plants, and not generally supposed to attack the plants themselves, but to be on the search for aphides, and other insect enemies. R. McL.

MELON: H. B. Next week, after close examination.

MICROSCOPE: Micro. No; it is not difficult to get good results with a quarter-inch, but it requires a little practice. Get some friend to put you in the way of using it.

NAMES OF FRUITS (six only should be sent at any one time): Gardeners' Orphan Fund. We have received from E. B., Belgium, and H. N. O., Hampshire, postal orders for 10s., as a recognition of our services in naming fruit. The sums have been handed to the chairman of the committee.—W. F. H. 1, Colmar d'Éte; 2, Beurré Diel; 3, Doyenné Boussoch; 4, Duchesse d'Angoulême; 5, Triomphe de Jodoigne; 6, Ne Plus Meuris; 7, Beurré Hardy; 8, Pitmaison Duchess; 9, Beurré Bosc; 10, Beurré Superfin; 11, St. Germain (Uvedale's); 12, Beurré Bachelier.—E. W. C. 1, Wellington; 2, Chaumontel; 3, Beurré Diel; 4, Louise Bonne de Jersey; 5, Wellington; 6, bad specimen; 7, Marie Louise; 8, not recognised.—S. Duffield, 1, Colonel Vaughan; 2, Beurré Clairgeau; 3, Small's Admirable; 4, Alexander; 5, Round Winter Nonsuch; 6, Beurré Diel.—W. H. D. 1, Triomphe de Jodoigne; 2, Easter Beurré; 3, Old Bergamotte; 4, Wellington; 5, King of the Pippins; 6, not recognised.—Alfred Mohr, 1, King of the Pippins; 2, Blenheim Orange; 3, Ribston Pippin; 4, New Hawthornden; 5, Old Nonsuch; 6, Wellington.—W. Ripley, 1, not recognised; 2, Jersey Gratioli; 3, Soldat Laboureur.—W. George, 1, Zephirin Greigore; 2, King of the Pippins; 3, crushed; 4, Beurré Clairgeau.—W. D. Good variety, not recognised.—W. S. L. 2, King of the Pippins; 3, Margil.—W. W. 1, too small to recognise; 2, Manks Codlin; 3, not recognised; 4, Small's Admirable; 5, decayed; 6, Lord Derby; 7, Roundway Magnum Bonum; 8, too small to name; 9, ditto.—S. K. 1, Catillac; 2, Beurré Bachelier; 3, Madame Trevey; 4, Beurré Superfin; 5, Lord Derby; 6, Fearn's Pippin.—A. S. 1, Catillac; 2, Josephine de Malines; 3, Beurré Clairgeau; 4, Marie Benoist; 5, Beurré Hardy.—P. C. H. 1, Louise Bonne de Jersey.—Mrs. Noakes, Apple, Court Pendu Plat; Pear, Jersey Gratioli.—J. S. Upnez, 1, Alfriston; 4, Louise Bonne de Jersey; 5, not recognised.—J. S. 1, Beurré Hardy; 2, Zephirine Greigore; 3, Seigneur d'Esperen; 4, Beurré Bachelier; 5, Bergamotte d'Esperen; 6, too small to name; 8, Beurré d'Anjou; 9, too small to name; 10, Knight's Monarch; 11, not recognised; 12, Marie Louise.—T. S. 1, Devonshire Quarrenden; 2, Court of Wick; 3, 4, and 5, Crushed.—J. E. P. 1, Louise Bonne de Jersey; 2, Beurré Capiamont; 3, Lemon Pippin; 4, Blenheim Orange Pippin; 5, Wyken Pippin; 6, Manks Codlin; 1, Court of Wick; 5, Kerry Pippin; 6, Cellini Pippin.—Joseph Clark, 1, Louise Bonne de Jersey; 2, Prince Consort; 3, ditto; 4, Vicar of Winkfield; 5, ditto.—E. B., Belgium. Pears: 1, 3, and 4, Beurré Capiamont; 5, Fondante d'Automne; 6, 7, and 8, Chaumontel; 9, Orange Bergamot; 10, Beurré Diel; 11, Vicar of Winkfield; 13, Beurré Hardy; 14, 17, and 21, Louise Bonne de Capiamont; 18, Pitmaison Duchess; 19, 20, Chaumontel. Some of the labels were detached. Apples not recognised.—R. M. White Paradise.

NAMES OF PLANTS: *Reader.* Berberis asiatica, Spiraea canescens, both from the Himalayas.—*J. W. O.* 1, Prunus Pissardi; 2, Taxodium distichum.—*J. Laurie.* Pyrus torminalis.—*E. F.* Sea Buckthorn, Hippophae rhamnoides; excellent sea-side shrub.—*W. J. Burdett.* Amaryllis Belladonna.—*J. M. D.* 1, Nerium Oleander; 2, Peperomia Saundersii; 3, Dieffenbachia var.; 4, Cissus discolor; 5, Acalypha tricolor; 6, Sparmannia africana; 7, Vinca alba; 8, Adiantum cuneatum; 9, Myrtus communis.—*A. K.* Colletia cruciata, a form of C. spinosa.—*Wallace.* Calceolaria pinnata.—*G. W. G.* Pyrethrum lacustre.—*W. H. H.* Centranthus ruber, Red Valerian.—*H. M.* 1, Dianthus carthusianorum; 2, Saponaria officinalis; 3, Tamarix gallica; 4, Tamarix gallica var. with pale flowers; 5, Hypericum perforatum.—*W. H.* 1, Amaryllis Belladonna; 2, Cyrtodeira Chontalensis; 3, Helianthemum, garden variety; 4, Asperula odorata; 5, Galium saxatile; 6, Linaria cymbalaria.—*J. K.* Phalaenopsis violacea.—*J. M.* Cynoches ventricosum.—*S. G. S.* 1, Polypodium appendiculatum; 2, Davallia Tyermanii; 3, Aspidium (Cyrtomium) falcatum; 4, Pteris adiantoides; 5, Davallia Mariesii; 6, Davallia canariensis; 7, Onychium japonicum.—*B. K.* A twin-flowered inflorescence of the variety of Cyrtidium you send is not an uncommon production.—*T. C., Liverpool.* Crinum angustum (see Bot. Mag., t. 2397. *W. C. R.* Your Abutilon is the best yellow variety we have seen.

PEACHES: *E. G. A.* Our memoranda do not state if they were grown inside or out. To find out all the facts would take too much of our time.

ROOT COMPETITION: *F. P. D.* As the Cabbage cannot be called a "root," the collection which contained Cabbages should have been disqualified.

"SILVER GLOBULAR THUYA": *H. E.* Is probably a Juniper. There is no Juniper that answers to the description. Citrus; yes, please.

TARRING A STAGE IN A FORCING-HOUSE: *W. C.* We should certainly hesitate to tar such a large mass of woodwork, and afterwards put plants into the house, as the fumes of the tar in a house that must be closed for forcing purposes would have a bad effect on the leaves. Better use some dark-coloured, cheap paint, as for instance, Carson's anti-corrosion. It is durable; and if not of particular smoothness, it still looks well.

YARROW ON LAWN TURF: *W. C.* If spudding-out the plants is too troublesome a job, it would be advisable to dig the whole lawn over, first taking up the turf which is free from the weed, laying it aside in rolls of 3 feet by 1 foot, or squares of 1 foot for future use in making-up the margins of walks and beds. In digging the lawn, throw out all roots and top-growth of weeds (perennial), and work-in a considerable dressing of loam, itself free from weeds, and if the land be of a hungry nature, some manure may be worked-in. This season grass seeds may be sown at once, with the certainty of getting a green surface before winter.

COMMUNICATIONS RECEIVED.—*C. H.*—*T. S.*—*S. L. C.*—*H. E.*—*O. O. W.*—*W. I.*—*A. H. H.*—*H. W. W.*—*Dr. Conwentz.* Dantzig.—*A. P. J. W.*—*W. G. S.*—*H. B.*—*J. T. F.*—*F. Horsman.*—*G. Woodward.*—*C. A. M.*—*J. M.*—*W. H.*—*J. G.*—*J. B.*—*A. E.*—*H. M.*—*North Devon.*—*E. M.*—*A. W.*

FRUITS RECEIVED.—*J. G.*—*W. G. L.*—*H. N. O.*—*F. W.*—*Cedars.*—*W. P.*—*A. F. N.*—*F. H. O.*—*S. W. S.* Senders of fruits who do not find their names in this issue of the *Gardeners' Chronicle* should kindly scan the Correspondence column the following week.

PHOTOGRAPHS RECEIVED WITH THANKS.—*F. M. Coleford.*

SPECIMENS RECEIVED.—*T. S.* (many thanks; next week). *H. E.*—*O. O. W.*

DIED.—We regret to announce the death, on the 25th inst., after a long illness, of Mrs. LATHAM. She had somewhat recovered, but a relapse occurred, and she died rather suddenly on the morning of the 24th inst. Great sympathy is felt for Mr. W. B. LATHAM, the well-known curator of the Edgbaston Botanical Gardens, Birmingham, by a very large circle of friends.

—We regret to have to record the death of Lord ALFRED CHURCHILL, at one time a member of the Council of the Royal Horticultural Society.

—As this sheet is passing through the press we receive the announcement of the death of Mr. F. L. AMES, well-known in this country as a patron of Horticulture and a connoisseur in Orchids.



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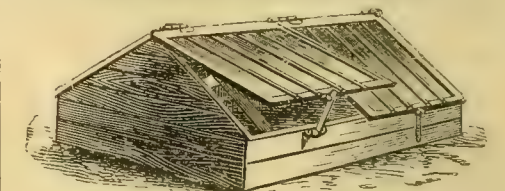
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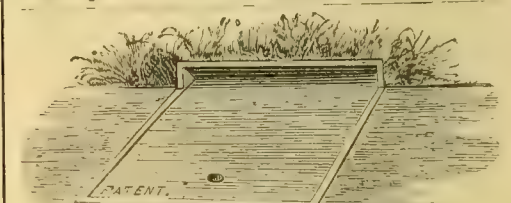
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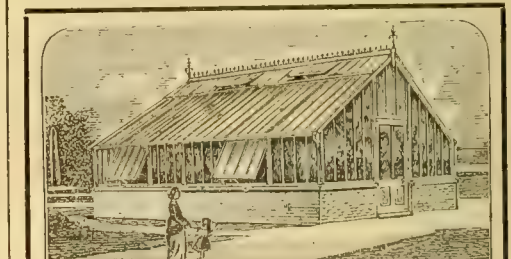
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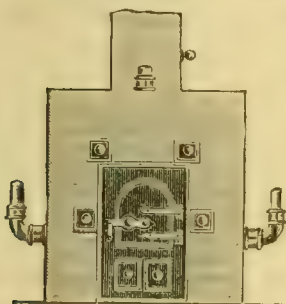
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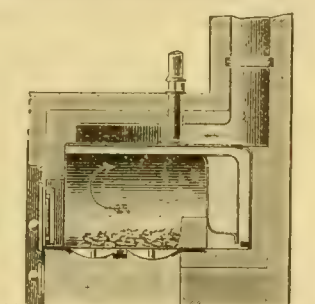
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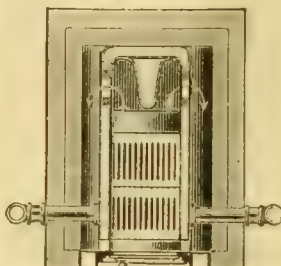
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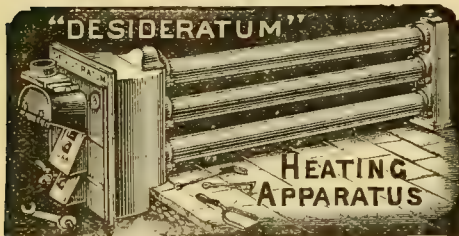
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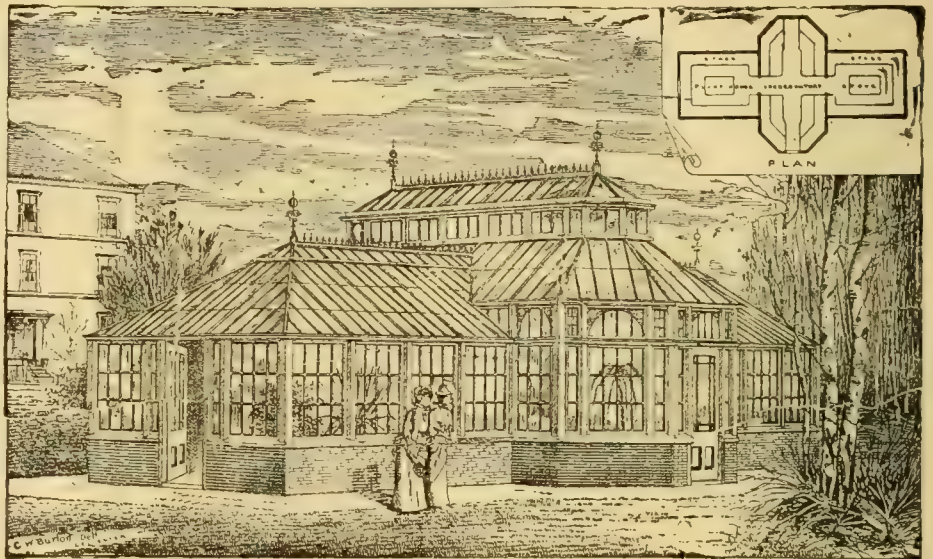
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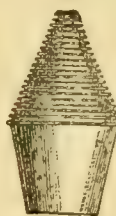
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2751.

No. 354.—VOL. XIV. {THIRD
SERIES.}

SATURDAY, OCTOBER 7, 1893.

{Regt. as a Newspaper.} PRICE 3d.
POST-FREE, 3½d.

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TECHNICAL HORTICULTURE.

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F. V. RASPAIL GERANIUM.—Strong-rooted Cuttings, 2½ 10s. per 1000, or 6s. per 100. Cash with order.—BOULTON, Beechenlea Nursery, Swanley.

STRAWBERRY PLANTS.—President, hand-laid in ground, 5s. to 8s. per 100. Free on Rail. H. FARRANCE, Market Gardener, Dagenham, Essex.

ORCHIDS.—New, Rare, Cheap.—Imported and Established. CATALOGUE just published, post-free on application. FRED. HORSMAN AND CO., Colchester.

CRIMSON CLOVE CARNATIONS, good strong Plants, all transplanted layers. Plenty of roots, per 100, 10s.; 2s. 6d. dozen. ARALIA SIEBOLDI, in 2½ inch pots, five to seven leaves. Good Plants 12s. and 15s. per 100. Packing free; cash with order. Messrs. GREAVES AND HAYNES, Florists, Beeston, Notts.

Planting Season.

WM. CUTBUSH AND SON would be glad if intending Planters would visit their Nurseries at High Barnet, where extensive Stocks of Forest and Ornamental Trees, Fruit Trees, Roses, &c., will be found in splendid condition for removal. Frequent trains from King's Cross, G. N. Railway.—Highgate Nurseries, London, N.

Covent Garden Market.

CHAS. E. COOPER, WHOLESALE FLORIST and COMMISSION SALESMAN, 33, Russell Street, Covent Garden, and 370, New Flower Market, W.C., is open to receive consignments of choice CUT Flowers, Ferns, Foliage, &c. Also the Provincial Trade supplied at market prices. For terms and further particulars, apply as above. Price List on application. Telegrams, "LAPAGERIA, London." Bankers, The National Bank, Limited, Charing Cross Branch.

PALMS, FERNS, &c.—FERNS in Variety.—ARALIAS and CYPERUS NATALENSIS in 48's, 6s. per dozen; LARGE A. CUNEATUM in 48's, 6s. and 7s. per dozen; PALMS in variety, and FICUS in 48's, 12s. per dozen; PALMS, fine stuff, in large 60's, 5s. per dozen; FERNS and CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order. LANE AND MARTIN, 227, Brixton Road, London, S.W.

HORTICULTURAL SHADINGS, NETTINGS, TIFFANY, WADDINGS, COTTON WOOL for Packing Flowers, CANVAS, TWINES, &c., manufactured and supplied wholesale by JOSEPH COOKSON, 21, New Cannon Street, Manchester.

J. WEEKS & Co., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Expiration of Lease.—Hounslow Heath, Middlesex.

ABSOLUTE CLEARANCE SALE of the whole of the well-grown NURSERY STOCK, at this Branch Nursery, by order of Messrs. Charles Lee & Son.

IMPORTANT to THE TRADE, FRUIT GROWERS, and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Hounslow Heath, Middlesex, and at the Feltham Nursery, Middlesex, within easy distance of Feltham, Hounslow, and Hounslow Barracks Stations, on MONDAY and TUESDAY NEXT, October 9 & 10, at 12 o'clock precisely each day, without reserve, the whole of the valuable and well-grown NURSERY STOCK, which is in capital condition for removal, including:—

4000 STANDARD and OTHER APPLES, of the most popular kinds,

4000 VICTORIA and other PLUMS, 5000 PRIVET, 1 to 6 feet, A very fine assortment of SPECIMEN CONIFERS, comprising Cupressus, Thuja, Retinosporas, 300 Golden Yews, 2 to 4 feet; Piceas, 5000 Spruce Firs, 1 to 3 feet; 600 English Yews, 2000 Hollies, 1 to 6 ft.; 500 Aucubas, 2 ft.; 150 flowering Yuccas,

HUNDREDS of RHODODENDRONS,

Berberis, Laurels, Juniperus, Arancarias, 2000 Limes, Poplars, and other Standard Trees; also Planes, Quick, Herbaceous Plants, 2000 Dwarf H.P. and Tea Roses, and large quantities of other stock.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Silverdale Lodge, Sydenham.

TWO DAYS' UNRESERVED SALE of well-grown ORCHIDS and PLANTS, by order of Walter Cobb, Esq., who is leaving the Residence.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on MONDAY and TUESDAY NEXT, October 9 and 10, at half-past 12 o'clock each day, a very fine Collection of about 2000 ESTABLISHED ORCHIDS, well-grown and in splendid condition, including 400 Cattleyas, various, 100 Lycastes, clean pieces of *Lælia grandis* and *tenebrosa*, 100 *Cœlogyne cristata*, 3 *C. cristata alba*, *Sobralia virginalis* (true), 400 *Masdevallias*, amongst them *Harr yana* in variety, and others; 100 *Dendrobiums*, 100 *Cypripediums*, 100 *Phalaenopsis amabilis*, *Schilleriana*, and others; specimen *Cymbidium eburneum* and *giganteum*; *Odontoglossum*, &c. Also the STOVE and GREENHOUSE PLANTS, comprising Azaleas, Crotons, *Dracenas*, *Liliums*, *Streptocarpus*, fine stock plant of *Nepenthes Mastersiana*, *Gloxinias*, and other plants. Two capital Horses, quantity of Teak cylinders, 4 two-light Frames, and sundry effects.

May be viewed the Friday and Saturday prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

West Drayton.

ENORMOUS SALE of FRUIT-TREES.

Splendidly grown, and fit for immediate Planting. Important to Market Gardeners, Fruit Growers, and Nurserymen.

NINTH ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Smith & Son to SELL by AUCTION, on the Premises, The Nurseries, West Drayton, Middlesex (ten minutes' walk from West Drayton Station, G.W.Ry.), on TUESDAY and WEDNESDAY, October 31 and Nov. 1, at 12 o'clock precisely each day—

62,000 FRUIT TREES,

Specially grown for Market Gardeners, Fruit Growers, &c., and comprising the best and most profitable Market Sorts, including—

24,000 HALF-STANDARD APPLES, Consisting of Smith's Improved Keswick Codlin, Earlian Julien, Warner's King, Wellington, Yellow Ingestrie, Bramley's Seedling, Port's Seedling Duchess of Gloucester or Duchess Favourite, Reynolds's Pippin, Duchess of Oldenburgh, Worcester Pearmain, Lord Derby, Lady Sudeley, Lord Suffield, Mr. Gladstone, Keswick Codlin, Ecklinville Seedling, Stirling Castle, &c. 820 STANDARD APPLES of sorts.

200 Half-Standard APPLES of sorts. 300 Bush MORELLO CHERRIES.

25,000 HALF-STANDARD PLUMS, Comprising Victoria, Blue Gage, Grand Duke, Pershore, Rivers' Early Prolific, Czar, Sultan, New Orleans, Cox's Emperor, Gisborne, Pond's Seedling, Autumn Compit, White Magnum Bonum, &c.

4000 STANDARD PLUMS,

Including Victoria, Gisborne, Prince of Wales, Pershore, and others.

3580 HALF-STANDARD PEARS, amongst them Brown Beurré, Pitmaston Duchess, Late Windsor, and Hessel.

4000 CLUSTER DAMSONS, Standards and Half-Standards. 40,000 CURRANTS, Black Naples. 30,000 " Red Cluster.

2,000 GOOSEBERRIES, Lancashire Lad.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, of Messrs. J. SMITH AND SON; SIPSOM, Harmondsworth, Slough; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The Auctioneers desire to call special attention to this unusually important Sale, as it is so seldom such an opportunity presents itself for securing well-grown Fruit Trees in large quantities and of such sorts as Messrs. Smith & Son find from their long and extensive experience to be best adapted for Market Purposes. Messrs. Protheroe & Morris can with confidence recommend intending purchasers to attend the Sale, as the catalogue comprises the most extensive and finest lot of Fruit Trees they have ever had the pleasure of offering by Auction.

Lea Bridge Road Nurseries, Leyton, E.

A few minutes' walk from Hoe Street or Lea Bridge Stations on the Great Eastern Railway.

GREAT UNRESERVED SALE of superior NURSERY STOCK, the Land being Sold for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Lea Bridge Road Nurseries, Leyton, Essex, on WEDNESDAY NEXT, October 11, and two following days, at 12 o'clock precisely each day, WITHOUT RESERVE, by order of Mr. JOHN FRASER, who is TRANSFERRING the BUSINESS to SOUTH WOODFORD, a large quantity of unusually well-grown

NURSERY STOCK,

All carefully prepared for removal, consisting of 2500 HOLLIES, 1½ to 2 feet, and 5 feet to 6 feet; 3000 LAURELS, in variety; a considerable quantity of Specimen BORDER SHRUBS; AZALEA ALTACARENSE; LILACS, and other Hardy Flowering Shrubs; 1000 PLANES, 10 to 14 feet; 1000 BIRCH, 1000 PURPLE BEECH, 1000 MOUNTAIN ASH, WEeping ASH, MAILES, SYCAMORES, POPLARS; 2000 LIMES, 2000 Variegated and other IVIES, 500 CRATEGUS LELANDI, 500 PYRUS JAPONICA, 1000 CLEMATIS JACKMANII and others, 1000 AMPLOPIS VEITCHII, 500 PASSIFLORA CONSTANCE ELIOT, CRANTHUS, HONEYSUCKLES, and other Hardy Climbers in pots.

10,000 FRUIT TREES,

comprising 1000 Standard and Pyramid Apples, 1500 Standard and Pyramid Pears, 1500 Plums and Cherries.

2000 CLOVE and other CARNATIONS, in pots.

Strong Fuiting and Planting Canes of VINES, embracing Black Hamburgh, Muscat, and other sorts; 1000 CYCLAMEN, 2000 BOUARDIAS, full of flower buds; 3000 GENISTA FRAGRANS splendid stuff; 1000 SOLANUMS, full of berries; 500 LAPAGERIA ROSEA, and other Greenhouse Climbers; IOLLYHOCKS, seedlings from the best named sorts, with names; and other useful Stock.

May be viewed any day prior to the Sale. Catalogues may be obtained on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Lyntonstone.

N.B.—Purchasers may arrange with Mr. Fraser to have their lots lifted and forwarded at the cost of labour incurred and material used.

Westerham (close to the Station).

IMPORTANT UNRESERVED CLEARANCE SALE of the whole of the well-grown NURSERY STOCK, ROSES, &c., by order of Mr. Arthur Jeffkins, who is relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Darent and Hovey Nurseries, Westerham, Kent, on WEDNESDAY NEXT, October 11 at 12 o'clock, without reserve, 1400 Spruce FIRS, suitable for Christmas Trees; 600 Weymouth and Austrian PINES, 200 PRIVET, LAURELS, a large quantity of well-grown CONIFERS; 2000 THUIA LOBBI, splendid plants, 6 to 7 feet a very fine collection of 2000 Standard, Dwarf, and Climbing ROSES, in first-class condition, and including the choicest tea and other varieties, Standard and Ornamental TREES, ILACS, and other STOCK.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The NURSERY TO BE LET on advantageous terms. Apply to the Auctioneers.

Woking, Surrey.

About mile and a half from Woking Railway Station.

TWO DAYS' SALE of thriving NURSERY STOCK, which has been carefully prepared for removal, by order of Mr. R. Coyer.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Cart House Lane Nurseries, Woking, on MONDAY and TUESDAY, October 6 and 7, at 12 o'clock each day, 1500 Scotch FIRS, 1½ to 6 feet; 2000 Spruce FIRS, 1½ to 5 feet; 500 BORN SCRUBS, 2½ to 6 feet, beautifully grown, many of them fine specimens; very fine Standards of Waterer's Golden alder Variegated HOLLIES; 4000 CONIFERS, of sorts, in various sizes; 1000 RHODODENDRONS; 9000 BOX PRIVET and LAURELS; 3000 Flowering SHRUBS; Standard Ornamental TREES; 1000 Silver BIRCH, 10 to 15 feet; LANES, LIMES, &c.; 1000 Paul's Double Scarlet THORN Standards and Pyramids; 6000 strong QUICK, 2 to 4 feet; 200 Irish IVIES, staked; 2000 Standard and Pyramid FRUIT TREES, Apples, Pears, and Plums; and other Nursery Stock, fully described in Catalogue.

The Lots may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68 Cheapside, London, E.C.

Stammore.

(Entrance opposite Mr. Butt's Farm.)

CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, Stammore Park Gardens, Stammore, a quarter of a mile from Stammore Station, L. & N.W. Railway, on MONDAY, October 16, at 12 o'clock, by order of Mr. Morle, a large quantity of well-grown GREENHOUSE, HERBACEOUS, and OTHER PLANTS, consisting of 2000 Roses, Hybrid Perpetuals, and Teas; 1000 Cyclame, 1500 Lilium Harriisi, and candidum; Callas, Bouvardias, Primulas, Camellias, Azaleas, Ferns, Tuberoses, Heaths, epidistras, Climbers of sorts, and many other plants; magnificent Standard Bay Trees, a quantity of new Lights and Frames, Capital Florist's Market Van and Effects.

May be viewed Saturday prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next, October 13.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on FRIDAY NEXT, October 13, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., by order of Mr. F. Sauder, Importations of the following new and valuable ORCHIDS, without the least reserve. A new importation of DENDROBES just to hand in splendid condition from the Wellesley Islands, Gulf of Carpentaria. The Butterfly plant of the natives.

These Dendrobies resemble Statterianum, Phalaenopsis, superbiens, and also bigibbum, probably it may be a local form of—or near bigibbum—what few flowers our man saw were large and of a dark crimson and violet colour, they are exceedingly floriferous, and are smothered with old flower-spikes. We believe this is the first lot of Orchids ever collected in this region, the growths are thoroughly matured and the plants could not be in finer condition.

LYCASTE or ANGULOIA SPECIES

(Unflowered.)

Imported by us with CATTLEYA REX. The flowers are said to be large, and white and yellow. The plants offered have not yet been flowered in Europe.

CYPRIPEDIUM ROTHSCCHILDIANUM,

in splendid condition. This is truly a superb Cypripedium, its flowers are of great size, and very lasting quality, the colours brilliant and striking. Altogether it is one of the finest Cypripedes in cultivation.

CYPRIPEDIUM SANDERIANUM.

The longest petalled of all Cypripedes. The most extraordinary and quaint known to cultivation.

CYPRIPEDIUM SPECIES,

In Bamboos, as imported from Java.

Foliage resembles Mastersianum and some varieties of barbatum. Every plant offered is unflowered.

STANHOPEA, white, in the way of Mastersii and Amesiana.

ONCIDIUM PRETEXTUM, O. JONESIANUM,

O. ROGERSII, O. PHYMATOCYLUM.

ONCIDIUM LANCEANUM SUPERBUM,

The richly-coloured free-flowering form.

SACCOLABIUM SPECIES,

Sent home by our Collector from Darjeeling. This is a splendid species, in the way of the superb Saccolabium speciosissimum.

CYPRIPEDIUM SPECIES,

From Tongarong, Dutch Borneo.

Just received in good order and condition. Leaves resemble somewhat C. Sanderianum. Our Collector received these plants from a Dutch Trader, who states that it produces long stems of bronzy-red and yellow blossoms.

DENDROBIUM LOWII, CŒLOGYNE PANDURATA, EPIDENDRUM GODSEFFIANUM, CATASETUMS, &c.

Also established plants of the rare

ODONTOGLOSSUM LONDESBOURGHIANUM and

O. MADRENSE, &c.

On view morning of Sale, and Catalogues had.

Tuesday and Wednesday, October 17 and 18.

THE LANGFORD PARK COLLECTION OF ORCHIDS.

Collected regardless of expense, in superb condition, and comprising exceedingly well grown ODONTOGLOSSUM ALEXANDRE, best type, mostly unflowered, and many marked varieties; CATTLEYAS, MASDEVALLIAS, DISA GRANDIFLORA, LÆLIA ANCEPS ALBA, with spikes; SOBRALIA VIRGINALIS, DENDROBES in variety; CYPRIPEDIUMS, VANDAS, and many choice specimens of ANGRÆCUMS, in spikes, too numerous to mention.

MESSRS. PROTHEROE AND MORRIS have received instruction to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY and WEDNESDAY, October 17 and 18, at half-past 12 o'clock each day.

On view morning of Sale, and Catalogues had.

Sunningdale (close to the Railway Station).

THREE DAYS' ABSOLUTE CLEARANCE SALE of beautifully-grown NURSERY STOCK, the whole in splendid condition for removal. Important to those extensively engaged in planting.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on MONDAY, October 23, and TWO FOLLOWING DAYS, at 12 o'clock precisely each day, by order of Mr. C. Noble, a fine lot of Bush and Standard RHODODENDRONS, various sizes, choice named kinds; also Hybrid Seedlings and Ponticum; well-budded AZALEAS, many thousands of CONIFERS, from 2 to 8 feet, all in first-class order for making evergreen hedges, blinds, screens, and general planting; several thousands of young and vigorous Standard and Bush FRUIT TREES, Red, Black, and White CURRANTS, a good selection of Flowering and Ornamental SHRUBS, from 2 to 7 feet, lotted to suit all buyers, several thousands of Oval-leaved PRIVET and LAURELS, from 1 to 5 feet, and other STOCK.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.

5000 LOTS SOLD WEEKLY.

MESSRS. PROTHEROE & MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS and other BULBS from Holland; also ROMAN HYACINTHS, LILIUM CANDIDUM and other bulbs for early forcing, lotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

Monday Next.—Plants from Belgium.
250 AZALEAS, various kinds, well-budded plants; 24 DRACENA INDIVISA, 12 ASPIDISTRAS, 48 CAMELLIAS, well-budded, and fine healthy plants, in variety; also English-grown LILIES, NARCISSI, FREESIAS, IRIS, New CARNATIONS, CALLAS, CANNAS, PINKS, CLEMATIS, IVIES, ROSES, 40 Lots of Greenhouse FERNS and Hardy BULBS, PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, October 9, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.

PLANTS, SPIRÆAS, AND BULBS.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, OCTOBER 12, at Twelve o'clock, a CONSIGNMENT OF PLANTS FROM BELGIUM, LILIUM KRAETZERI, English-grown SPIRÆA JAPONICA, Named NARCISSI, and other Hardy PLANTS and BULBS.

On view morning of Sale, and Catalogues had.

Friday, Next, October 13.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, October 13,

LÆLIA MONOPHYLLA.

The charming cool house Scarlet Lælia. The Plants offered are the best and leafiest yet imported, being specially collected and brought over in grand condition.

ODONTOGLOSSUM KRAMERI MAJOR.

Grand established masses in fine health, and showing flower. Those of the free-growing "major" form. Also a fine mass of O. Kramerii albidia, the rare white kind.

On view morning of Sale, and Catalogues had.

Hollamby's Nurseries, Groombridge, Tunbridge Wells.
GREAT UNRESERVED SALE of valuable NURSERY STOCK, all recently transplanted, and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, on the premises as above, by order of Mr. Edwin Hollamby, on THURSDAY and FRIDAY, October 26 and 27, at 12 o'clock each day, 350,000 CONIFERS, Climbing, Dwarf, and other ROSES, LARCH, and Scotch FIRS, ASH, Spanish CHESTNUTS, strong transplanted QUICK, named and other RHODODENDRONS, AZALEAS, CARNATIONS, hardy climbers; extra strong SEAKALE for forcing, &c.

May be viewed any day prior to Sale. Catalogues may be had at the Nurseries, and of the Auctioneers and Valuers, 67, and 68, Cheapside, London, E.C.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Wednesday Next.

300 choice named dwarf ROSES, 30,000 best LILY OF THE VALLEY Crowns, a Consignment of AZALEA INDICA from Ghent, 1000 fine clumps of SPIRÆA JAPONICA, a New CARNATION, 30 fine specimen plants of LATANIA BORBONICA from Belgium, 30,000 ROMAN HYACINTHS, White, Blue, and Pink Italian HYACINTHS, Paper-white NARCISSUS, LILIUMS, and other Forcing BULBS from France; ANEMONE FULGENS, LILIUM HARRISII, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 11.

On view morning of Sale, and Catalogues had.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold SALES at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—

EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.

EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other Bulbs.

EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THURSDAY, at 11.30 A.M.—Azaleas, Camellias, Palms, Dracenas, and other Plants from Belgium; Roses, General Nursery Stock, Carnations, Dutch and French Bulbs.

EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THIRD THURSDAY, at 12 o'clock.—Established and Imported Orchids.

All Catalogues post free.

Messrs. JAMES AND BAXTER conduct Sales and Valuations of Nursery Stock, Live and Dead Farming Stock, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

King's Acre Nurseries, near Hereford.

SALE of Several Acres of First-class FRUIT TREES, comprising over 20,000 Standard, Pyramids, and Trained APPLES, PEARS, PLUMS, CHERRIES, and others. CONIFERS, FOREST TREES, &c., which

MESSRS. ALEXANDER, DANIEL, SELFE AND CO. will sell by AUCTION, at the above Nurseries, on TUESDAY, WEDNESDAY, and THURSDAY, October 10, 11, and 12, punctually at 12 o'clock.

Catalogues may be obtained at the Nurseries, King's Acre; or of the Auctioneers, Bank Chambers, Corn Street, Bristol; and 24, Old Jewry, London, E.C.

Within No. 51, George Street, Edinburgh.

On THURSDAY, October 12, at 12 o'clock.
IMPORTANT SALE OF ORCHIDS, being the Entire, Unique, and Valuable Collection of Old-established Specimen Orchids belonging to James McKelvie, Esq., Haymarket.

MESSRS. LYON AND TURNBULL have been instructed to sell the above Valuable Collection of ORCHIDS, including magnificent exhibition specimens of Vandas, Cattleyas, Cælogynas, Lælias, Masdevallias, Maxillarias, Odontoglossums, Oncidiums, and Calanthes. Also valuable Greenhouse RHODODENDRONS, including McKelviei, Aucklandii, Countess of Dalkeith, and Walkerii.

Catalogues on application. Gentlemen may obtain orders to see the plants before the Sale on application to the Auctioneers.

Milford Nurseries, Milford, near Godalming, Surrey.

ANNUAL SALE.

Highly important FOUR DAYS' SALE of first-class NURSERY STOCK.

MESSRS. MELLERSH have received instructions from Messrs. Maurice Young & Son to sell by AUCTION, on the Premises, the Milford Nurseries, Milford, near Godalming, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, October 17, 18, 19, and 20, at 11 for 12 o'clock each day, without reserve, a large quantity of exceptionally well-grown NURSERY STOCK, lotted to suit all classes of buyers, comprising 2500 Specimen Evergreens and Conifers from 2 to 8 feet, consisting of Piceas, Abies, Pinus, Cupressus Lawsoniana, Fraserii, Kretas, Youngii, Cærules, &c.; Thujas, Cedrus decodara, Aucubas, Laurels, Hollies, Golden Junipers, Golden Yews, &c.; 2500 English Yews (1½ to 3 feet), 200 Standard Rhododendrons, with good heads; a large quantity of Named, Hybrid, and other Rhododendrons (1 to 3 feet); Azalea mollis and pontica, Green Hollies (1 to 3 feet), hardy Heaths, several thousand Standard, Pyramid, and Trained Fruit Trees, Standard and Pyramid Thorns, Flowering Crabs, Ornamental Deciduous Trees, &c.; Standard and Dwarf Roses of the leading kinds, Tea Roses in pots, Clematis, Ivies, Ampelopsis, Honeysuckle, Passion Flower, &c.; 150 large Specimen Standard Hollies, and a quantity of General Nursery Stock.

Messrs. MELLERSH, Auctioneers and Surveyors, Godalming and Guildford.

WANTED, with Immediate Possession, a small FLORISTS, SEED, and NURSERY BUSINESS, in or near a Market Town. Full particulars to—
72, Monkgate, York.

NURSERY FOR SALE.—An Old-established
Nursery Business in the North of Scotland is for Sale as a going concern. Good reasons for giving up. This is a splendid opening for a practical man.

Full particulars on application to A. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Fruiterers and Greengrocers.

THE LEADING RETAIL BUSINESS in one of the best South Coast Watering-places IS FOR DISPOSAL, in consequence of the death of Owner. Returns over £8000. First-class Premises opposite Town Hall, leased at £170 a year. Certain supply from 30 acres of Garden. Horses and Vans at valuation.

For full particulars and price apply to W. DAY AND SONS, Estate Agents and Valuers, Maidstone.

SOUTHPORT.—TO BE SOLD, a valuable
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(ROLFE, N. SP.)

Exhibited and unanimously awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, and pronounced by every one to be the most beautiful and charming Cypripedium introduced, causing quite a sensation at the Drill Hall, on Tuesday, September 26, 1893.

The special feature of this novelty is the dorsal sepal, which is quite distinct in appearance and colour to any other known Cypripedium, which will render it exceptionally valuable to the hybridist.

The *Gardeners' Chronicle* says:—"There was a more than usually interesting show of Orchids, but by far the most novel and beautiful exhibit was a plant of Cypripedium Charlesworthii, Rolfe, n. sp., First-class Certificate, an entirely new species, imported by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and exhibited by them for the first time, the exhibit coming in for a great amount of attention and admiration. The plant in growth somewhat resembles C. Spicerianum, and the flowers, which are borne on scapes about 3 inches in height, are unlike any other known species. The beautiful flat, upper sepal is 2½ inches wide, broadly orbicular, white, tinged, and veined over its surface with light rosy-purple; the apex alone showing a white marbling. The lower sepals are about 1 inch broad, greenish-white. The petals, which resemble those of C. insignis, are plain-edged, over 1½ inch long, yellowish, tinged with brown; the lip also somewhat resembles that of the Sylhet form of C. insignis, and is similar in colour to the petals. The staminode is very singular, resembling pure white porcelain, the protuberance in the centre being conical in form, and not a single spur, as in C. insignis. It is an extraordinary and beautiful species."

The *Garden* says:—"A First-class Certificate awarded to Cypripedium Charlesworthii, Rolfe, a distinct and decidedly novel species, which cannot

be compared with any that we can call to mind. The plant is of dwarf habit, the flowers each having a remarkably fine dorsal sepal, extra large, measuring about 2½ inches each way; the colour a pale pink, suffused with purple, and having a lighter network towards the extremities; the petals are shaded with greenish-brown, so also is the pouch, which is rather small. A greater novelty amongst the species of the Slipper family has not been seen for a long time. From Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford."

The *Journal of Horticulture* says:—"A very remarkable introduction from the East Indies; it is a distinct and beautiful species, very dwarf, with long narrow leaves. The flower stem is only 3 to 4 inches long; the lip is short, green, heavily suffused with bronzy-brown, and the dorsal sepal is very noteworthy—it is broad and rounded, and the colouring is a beautiful soft rose, delicately veined; the staminode is pure white. A feature of the leafage are the rows of dots on the reverse side. The species is a great acquisition (First-class Certificate)."

The *Gardening World* says:—"An interesting collection of Orchids was exhibited by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, including a handsome new species, named Cypripedium Charlesworthii, from the East Indies."

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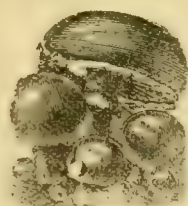
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 7, 1893.

ON THE CULTIVATION OF SOME OF THE RARER FRUITS AND VEGETABLES.

THE attention of practical gardeners has been recently called to the fact, that the number of different vegetables in general use in this country is unnecessarily limited, and that many descriptions of acknowledged merit, which are commonly met with abroad, are seldom or never seen at home although there is no reason to suppose there would be any difficulty attendant upon their cultivation.

For the past two or three years I have been trying experiments in the culture of some of the less well-known fruits and vegetables; and from a popular, but not scientific point of view, the results of my experience may interest some of your readers, and I therefore give such of them as I think worthy of notice.

FRUITS.

1. *Japanese Wineberry* (*Rubus phœnicolasius*).—Two years ago, I obtained from Mr. J. L. Childs, of Queen's co. New York, a number of plants in good condition and growing well; and these were planted in the garden in a light, loamy soil well-manured, but no special attention was given to them. The first year they did little except increase in size; but this summer, they gave an abundant crop. It is claimed that this plant is absolutely free from insect ravages; and I must say that, so far, the claim seems to be justified. In all the many dishes of fruit gathered, I have never once been able to find any grub or other insect inside the berry, such as are so frequently found in Raspberries. The reason is probably that given, namely, that the silky hair which clothes the stems prevents insects from crawling up. The berries are about as large as Raspberries, of a shining scarlet or yellowish-red, entirely enclosed in the hairy calyx until nearly mature, and borne in large clusters. The flavour is exceedingly agreeable, and distinct from that of any other fruit known to me, and whether eaten raw or cooked, or made into jam, they are excellent. The price paid was 4 dols., or 16s. for twenty-seven plants, carriage free. I consider this fruit a real acquisition.

2. *Dwarf Juneberry* (*Amelanchier canadensis*).—This forms a compact bush, bearing purple berries the size of a Sloe, very juicy, and of an agreeable flavour. My plants bore no fruit last year, and but a small crop this summer. They are growing vigorously, and seem to be perfectly hardy, as would be expected, coming as they do from Alaska. So far as I can judge, I believe this fruit well worth growing.

3. *Cape Gooseberry, Barbados Gooseberry, or Ground Cherry (Physalis pubescens)*.—This fruit is, I believe, occasionally grown, but not so frequently as it deserves to be. The plants are raised in heat, and then planted out or grown in pots in a cool house. They do not succeed quite so well out-of-doors. They bear profusely, and require but little attention or trouble, but are apt to be infested with red-spider. The fruit, whether stewed or made into jam, is extremely good, and well worth cultivation.

VEGETABLES.

1. *Turnip-rooted Chervil*.—The seed of this should be sown in the previous autumn; it appears to be rather an uncertain grower. Last summer I got a good crop, but this year a very small one. The root is of the shape of a Carrot, about 3 or 4 inches long, and dark-coloured outside. When eaten immature, it looks and tastes when cooked precisely like suet, and is, therefore, by no means desirable. When ripe, the roots should be dug up and stored in sand. After keeping them a few weeks, they acquire a flavour closely resembling that of a sweet Chestnut, and are exceedingly good; but if kept very long, they become too sweet. This is an excellent vegetable if eaten at the right time.

2. *Finocchio, or Florence Fennel (Feniculum dulce)*.—I cannot succeed with this. In Italy, the broad-leaf stalks overlap each other at the base of the stem, forming a white enlargement the size of a hen's egg (see *Gard. Chron.*, p. 109, January 28, 1893, fig. 19), and these, when properly cooked, are extremely good; but here the leaf bases either do not enlarge to any extent, or do so too slowly, and are in consequence, hard and woody, and not fit to eat. Even during the recent almost tropical summer, I only got one or two plants fit to eat, out of a fairly large bed. They were sown in April on a sheltered south border; some raised and grown in a cool-house utterly failed. I fear Finocchio cannot be grown successfully in this part of England.

3. *Asparagus Bean (Dolichos sesquipedalis)*.—I do not think our climate warm enough to mature this plant. I have grown it two years in succession on a warm south border. Last year I did not get a single Bean, and this summer, in spite of the unusual heat, I only got one dish from a fair-sized bed. The flavour is distinct and excellent, and if it were possible to grow it successfully, I am sure it would prove a great acquisition. The pods I gathered were about 12 inches long, but they are said to attain nearly double that length. I may add that they succeeded not much better in a cool house.

4. *Lima Bean*.—Of these, I have tried "Henderson's Dwarf" variety, which forms a small bush 15 inches high. It is very prolific, and perfectly hardy. The pods are dark shining green, very broad in proportion to their length, and very flat, almost the shape of a young pea-pod. I find that when cooked in the pod, even if quite young, they are not good, being tough and bitter; but the beans themselves when fairly large, are excellent, and of a distinct flavour; and coming in August and September, form a capital succession to the earlier Broad Beans. This is a vegetable well worth growing.

5. *Chinese Yam*.—These, raised in a cool house, and afterwards planted out, are easily grown, and produce good tubers in this climate. They are troublesome to dig up, as they grow very deep. To my fancy they resemble an indifferent Potato, being rather tasteless and without character. I hardly think they are worth growing where fairly good Potatoes may be had.

6. *Rush-nut or Chufa (Cyperus esculentus)*.—This plant succeeds fairly well with us. The "nuts" are really small tubers, the size of Cob-nuts, which are produced by underground shoots. They should be dug up in October, and stored in a dry place. When parched, they are decidedly pleasant, somewhat resembling the Pea-nut. The plants should be raised in heat, and planted out in May or June. Quite worth trying.

7. *Sweet Potato*.—These I have only tried this year, and with small success. The tubers, procured from America, were grown in heat until they produced shoots, which were taken off and planted out on a warm south border. The young tubers now formed are few, and not half the size they should have attained. I intend trying them again, but I imagine that the past very hot summer has given them an unusually good chance, and I am not sanguine of success, although this variety succeeds in Canada. They might do well if grown in a frame, although cultivation to any extent would be impossible in this manner.

8. *Purple Egg Plant*.—This is a valuable vegetable for those who can grow it in a stove, and I believe it is occasionally cultivated in this country. It bears freely, and grows vigorously, although very subject to red-spider. The variety I have found the best is the Round Purple Egg Plant, described by Vilmorin, known in France as the Aubergine Violette Ronde. This variety is well worth growing. The fruit, when cooked, has a very distinct flavour, and is very generally appreciated.

9. *Capsicum*.—There is a very common but erroneous belief extant that Capsicums are invariably very hot and pungent, and are only of use for pickles. The fact is, that several of the varieties are quite mild in flavour, and make an excellent dish when cooked, and are also useful in salads. One of the best varieties to cultivate is the Spanish Mammoth, which is very large and prolific, easy to grow, and quite free from pungency, but, of course, requires a stove for its culture. Two other varieties are worth noticing as decorative plants. These are the Celestial Pepper and the Kaleidoscope Pepper, so named by Mr. J. L. CHILDS, of New York, from whom they may be procured. In the former the seed-pods are conical, about 2 inches high, growing erect on the branches, and of a creamy-white colour, turning to a brilliant scarlet when mature. The Kaleidoscope Pepper has spherical, pendent pods of a bright scarlet. Both of these plants, as well as the Mammoth variety before mentioned, are exceedingly ornamental when in fruit; and as they last a long time, they are most useful for decorative purposes. They are, all of them, profuse bearers; but the two varieties last described are intensely hot and pungent. They must all be grown in heat.

10. *Soy Bean (Soja hispida)*.—This, which is, I believe, considered a good vegetable, I have not hitherto succeeded with. Those I grew last year flowered too late to produce any pods, as the summer was cold and wet; and this year I accidentally omitted to sow them, and I am, therefore, unable to judge of their value. I should like to know whether any one has succeeded with them in this country.

Two varieties of Bean which I obtained from America may be noticed—one, called the Golden-eyed Wax, is a dwarf plant; and the other, the Ivory-pod Wax, is a climber. The pods of both are yellow, and rather smaller than our Butter Bean, which they are somewhat like in appearance. When cooked, they are remarkably tender and delicate, distinct in flavour from any others I am acquainted with; but it is quite likely that

they closely resemble some of the varieties of edible podded Kidney Beans described by VILMORIN.

11. *Celeriac*.—The well-known Celeriac does not appear to be grown nearly as universally as it deserves to be. It is, of course, unnecessary to describe it or its culture; but as it is much liked by nearly everybody, and can be grown without difficulty, it ought to be found wherever there is a garden, and a pit to raise it in. Coming into use, as it does in late autumn and winter, when the choice of vegetables is greatly limited, it is invaluable.

12. *Good King Henry*.—This is much praised by some gardeners. I have tried it, and can see no value in it whatever, either in the Asparagus or the Spinach stage of growth. I should be very glad to hear the experience of others in regard to it.

The foregoing notes and remarks are only intended for those who, like myself, are interested in experiments in the cultivation of such fruits and vegetables as are worth growing, but are seldom or never found in England. I am, of course, well aware that little or nothing that I have said can be new to, or add to the knowledge of, experienced and scientific horticulturists. S. Courtauld, Bocking Place.

NEW OR NOTEWORTHY PLANTS.

KNIPHOFIA PAUCIFLORA × MACOWANI.

THIS pretty new dwarf hybrid Kniphofia was raised by Mr. Dewar, now Curator of the Botanic Garden at Glasgow, shortly before he left Kew, by fertilising the pistil of *K. pauciflora* with the pollen of *K. Macowani*. The seeds were sown at Kew in October, 1892, and it has now just flowered for the first time. The two species are not very closely allied, and as it comes about half-way between them, it is very distinct, and well worthy of notice from a horticultural point of view. *K. pauciflora*, which is a recent introduction, is figured in *Bot. Mag.*, t. 7269. *K. Macowani*, which is figured in *Bot. Mag.*, t. 6167, is well known. The hybrid recedes from *pauciflora* by its dense raceme, longer sub-cylindrical flowers of a brighter yellow, tinged with red in a young state, and non-exserted stamens.

Leaves linear, 1½ foot long, ½ inch broad at the base, tapering gradually to the point; moderately firm, green, triquetrous, acutely keeled on the back, and acutely channelled down the face. Scape slender, green, terete, above a foot long. Raceme dense, oblong, 3 inches long; pedicels very short, all cernuous; bracts ovate, scarious, twice as long as the pedicels; expanded flowers, bright lemon-yellow; buds bright red. Perianth sub-cylindrical, an inch long, not at all constricted above the ovary; lobes ovate, obtuse. Stamens as long as the perianth. Style finally exserted. J. G. Baker.

ORCHID NOTES AND GLEANINGS.

CORYANTHES WOLFII, Lehmann.

IN the *Orchid Review* for September, p. 264, a record is made of the first flowering in Europe of this species, under the care of Mr. F. W. Moore, the zealous Curator of the Royal Botanic Garden, Glasnevin. Attention was first called to this species in our columns by Consul Lehmann, 1891, ii., p. 483. The species is remarkable for its "flat, or slightly concave, perfectly solid hood, in which respects it comes near to *C. elegantium*, Lind. and Rchb. f., which also has an erect scape. In every other species the hood is helmet-shaped, and hollow underneath, as is Lehmann's second species, *C. Mastersiana*, so that *C. elegantium* would appear to be a nearer ally of *C. Wolfii*. The colour is as stated by Lehmann. The horns at the base of the column are proportionately large, being 5 lines long, while the hood



FIG. 67.—(A), CANNA L. E. BAILEY: YELLOW, WITH CRIMSON SPOTS. (GROUP 3.)
(B), " MADAME CROZY: SCARLET, WITH YELLOW MARGINS.
(GROUP 5.) (SEE P. 432.)

is only 9 lines broad. The flower is rather smaller than any previously known. It should be treated like a *Stanhopea*."

CATTELEYA CITRINA.

This is a beautiful dwarf plant, having glaucous persistent leaves, and large, fleshy, fragrant flowers, which last a long time in full perfection. In its native country we are told that it is found growing upon the undersides of the branches of trees, and hence the best plan is to fasten it upon a block of wood (Willow-wood, we prefer), with the growing part pointing downwards—standing, as it were, upon its head. We have frequently seen it placed in an upright position, but all attempts to so grow it have ended in its death; in fact, the plant would appear to be a somewhat refractory subject, even when treated in the best manner. Few persons can point to their plants and say that they have bloomed them half-a-dozen years in succession, but in some instances this has been asserted with a good deal of truth, and when such is the case, no more beautiful and pleasing flower can be found. Some people grow this plant in shallow pans, but we greatly prefer the block system of culture. It should thrive well in the *Cattleya*-house during the summer months, treated to a somewhat shady position, and supplied with a large quantity of water; but in the winter months it should be kept cool and dry, and if kept in the cool house during this time plenty of moisture will be available from the atmosphere. *Orchid Album* vol. x., part 118.

ONCIDIUM PHYMATOCILUM.

This plant has been termed a hard one to cultivate successfully for any length of time, and we think perhaps this has been from the want of having it well drained, for we do not think it likes much soil about its roots, neither does it thrive if any water is allowed to lie about it. For this reason we must say that we have seen this plant doing best upon a block of wood, although we have grown it for years under pot culture, using for it somewhat small pots, well drained; and for soil, good upland peat-fibre mixed with chopped sphagnum moss. It thrives in the cool end of the *Cattleya*-house, with a nice moist atmosphere when growing, but we cannot say that we have found it to like watering overhead from the syringe. The sunshine is quite genial to it when not too strong, but at these times a thin shade should always be in readiness to put over it. When growing, water may be freely given, provided the drainage is kept in good open order, so that it can quickly percolate away. In the resting season, although much less moisture is necessary to its well-being, the surroundings must never be allowed to become dry enough to shrivel the bulbs, for it is a very bad plant to recover, and to bring again into good health if allowed to shrivel up through over-drying. If grown upon wood, it requires extra care to bring it safely through the resting season. *Orchid Album*, vol. x., part 118.

CYMBIDIUM LOWIANUM.

Being of strong growth, and of large-rooting proclivities, it requires ample room for the roots to ramble. Drain the pots well, placing above the drainage material a good layer of sphagnum moss, and for soil use good fibrous peat and light turfy loam, in the proportion of two parts of the latter to one of the former, the whole to be chopped up somewhat roughly with the spade; some sharp sand can also be used during the operation of potting. Do not pot this plant upon a raised mound of soil, but rather pot it far enough below the pot's rim, so as to enable one to administer a good supply of water to the roots at one time, for these plants require a quantity of moisture during the growing season, as well as light sprinklings overhead from the syringe. During the resting season they must be kept fairly moist, and at no time of the year must the soil be allowed to become dry, for in the winter, sometimes early in the month of December, the spikes will begin to push up, continuing to grow till the month of February, or even later; it would, therefore, not answer to keep the plants dry, but during these dull

months the syringe may be laid on one side. The flowers last fully four or five months in beauty after they are open. On account of these plants being such robust growers, many persons have been induced to feed them with liquid-manure, and in many instances we have observed the ill effects produced by this treatment; we therefore strongly urge our readers not to be led away by any specious argument in its favour. When growing, the plant likes the temperature of the Cattleya-house, with a nice moist atmosphere, but when not growing, a temperature of 50° will be ample, but with a drier air. *Orchid Album*, vol. x., part 118.

ORNITHOCEPHALUS GRANDIFLORUS

Is a dwarf-growing and compact evergreen plant, having leaves of a rich bright green, and a somewhat dense raceme of bloom. The spike, we have observed, is a very long time in growing, but the flowers, when open, last a long time in full perfection. It is best grown in a small shallow basket or pan, so that it can be suspended near to the roof-glass, or upon a block of wood. We prefer the former, because these plants do not thrive so well upon the blocks of wood which we can provide for them as they do upon the growing trees. In the pans or baskets, however, thorough drainage must be provided, and we use for soil peat and chopped sphagnum moss. As with many of these small-growing Orchids, we consider it necessary to advise our readers to watch carefully for the first attacks of insects, and to at once set about their eradication, for if allowed to increase, they will rapidly cause the leaves to become discoloured and fall away, and this, especially with the smaller kinds, is a matter of serious consideration. *Orchid Album*, vol. x., part 118.

PLEIONE LAGENARIA.

I have some pans of *Pleione lagenaria*, which have come into bloom unusually early this year. Previously I have flowered them in November, but with the same treatment they are now fully open, and larger more brilliant flowers than ever I have seen; also in several instances I have two flowers on one stem. Is this not uncommon? The pans are 5 inches in diameter, and I have already twenty-five blossoms in one pan, and others yet to expand. I believe the fine weather experienced during the past summer is the cause, and should like to know if such plants have been affected elsewhere in a similar manner. *Thos. P. Watson*.

FRUIT REGISTER.

APPLE GRAHAM'S "ROYAL JUBILEE."

This Apple commemorative of Her Majesty's Jubilee is well deserving of the name it bears, and it is equally worthy of the name of the noted firm, Messrs. George Bunyard & Co., Maidstone, the introducers of it into commerce. It is sure soon to attain to a prominent position in all collections of Apples, being a good grower when worked on a free stock, and its productiveness increases with age. The fruit is of handsome appearance, large (fruits from a young tree, three years old, measuring nearly 13 inches in circumference), somewhat conical in shape, with a large eye placed deep in the basin, of a pale yellow colour, sometimes slightly flushed on the sunny side, the quality very fine. The crop is fit for use this year at the time I write (September 26), but in ordinary seasons it would be four or five weeks later in ripening.

BEDFORDSHIRE FOUNDLING APPLE.

This large handsome long-keeping Apple has borne a fine crop of full-sized fruit with me this year, the fruits averaging 13 inches in circumference each, whilst Blenheim Orange, growing in the same orchard, is much below its usual size, being only 10½ inches in circumference. The fruit of Bedfordshire Foundling is greenish-yellow on the shaded side, and suffused with orange and sparsely speckled with reddish-brown next the sun. The flesh is tender and juicy, with a pleasant sub-acid flavour.

The tree is a free and vigorous grower, and is generally a sure bearer; and therefore it is one that should be included in every collection. *H. W. W.*

EMPEROR ALEXANDER APPLE.

This comparatively new and very excellent and showy culinary Apple is about the same size and shape as Bedfordshire Foundling, but it has a shallower and smaller eye, and the fruit is highly coloured next the sun. The tree is a vigorous grower and a free bearer. As an exhibition Apple it has few rivals. *W.*

HARDY FRUIT AT EXHIBITIONS.

THE extensive cultivation of hardy fruits under glass, such as Apples, Pears, Plums, Cherries, &c., beside Peaches and Nectarines, renders some material change in the making of classes for all these fruits essential in the case of exhibition competitions. The other day at Earl's Court, outdoor Apples, Pears, Plums, and Peaches stood no chance whatever against indoor fruits, even though the former were ever so good. The somewhat artificial finish which glass culture gives to these fruits, as well as adding to size, naturally dominates over the product of full exposure; and whilst it is but right that the best should win, it is obvious that there can be no fairness in competitions so long as indoor and outdoor fruits are placed on the same footing. Is it not time that in any schedule in which hardy fruit classes are included, that emphatic distinction should be made, from August 1, at least, between the two classes of fruit. When suggestions of that kind are made, it is pleaded that no one could enforce the regulations against dishonest exhibitors. I think it would be time enough to make a sort of wholesale indictment against the integrity of competitors when occasion arose; but at least most growers are honourable men, and if there were classes of Apples or Pears, for instance, restricted absolutely to indoor or outdoor fruits, they would respect them fully. Under the present conditions, growers who may have the finest of outdoor fruit, yet find no satisfaction in competing, because they cannot hope to beat the house-grown samples; the result is that competition is strangled. In the same way, it is far more meritorious to obtain a fine crop of Peaches outdoors on walls than it is under the easy method of production which houses afford, and yet the ability shown in the former work is thoroughly sat upon, because at competitions the finer indoor fruits will win. Is that the way to help promote the better and wider outdoor culture of Peaches? Surely, after August 1 it should be the rule to have one class for indoor-raised fruits, and one for outdoor samples.

It seems almost needless in the case of Apples and Pears to go yet further. We have need in the former case for discriminating between those grown on walls, or on horizontal cordons, those grown on bush-trees, on the Paradise stock, and those grown on either young or old trees as standards in orchards; whilst it is to the latter form of tree we must look always for the production of the vast portion of the Apple supply of the kingdom, the finest fruits from these trees have no chance at exhibitions against those on walls, cordons, or highly fed and mulched bush-fruits, where they are well thinned, and the production of size for securing prizes is perhaps the primary feature. For the sake of gratifying a love for the sensational, we may at exhibitions like to set before the eyes of visitors some giants produced under those conditions, but they no more represent the average samples of Apples than a Huxley does the average scientific knowledge of the community. If we would encourage hardy fruit-culture as a national industry, we should show some favour to the pursuit at our shows, and not give all to fruits that are the products far more of artificial than of natural and ordinary modes of culture. I have no wish for a moment to offer any obstacle to the production and exhibiting of these huge and wonderful samples. Let us have them by all means, only in their proper

classes. There will then be a chance for every grower of good fruits to share with some equality in the competitions. *A. D.*

NOTES FROM GUNNERSBURY HOUSE.

THESE gardens are not so generally known to horticulturists as is Mr. Hudson, the successful and painstaking gardener, probably because they are nearly over-shadowed by the larger place known as Gunnersbury Park. When the place was described in our columns of July, 1881, it then belonged to H. J. Atkinson, Esq., but at an earlier period it formed part of the same estate as the park, and at one time it was the residence of Princess Amelia. About five years ago it was bought by the Messrs. de Rothschild, since which time the house has not been occupied, and the gardens are used together with those attached to the park for the supply of the London houses of the Messrs. de Rothschild. The grounds are kept up, and the place is generally well done.

The soil is of a dry, gravelly nature, and the lawns have, therefore, suffered very badly during this dry season. The house, which is Italian, is situated on ground slightly elevated, and looking southwards over a sloping lawn down to a small lake, which is now looking much prettier than formerly, owing to Mr. Hudson having planted some Lilies, Rushes, &c., which have broken the straight bank that looked so formal and uninteresting. There are many fine Conifers and trees, but some have suffered much from the character of the soil, and from the exposure to which many of them are subjected from the east. Near the house is a very fine specimen of *Magnolia conspicua*. We do not know where a finer exists. It blooms well each year, and is a magnificent sight in seasons when the spring frosts do not harm it. At the present almost every shoot is terminated by one or more buds, very much developed, and with the perfect flower visible upon cutting the bud into halves. In this state it will remain during the winter, and no frost that may occur during that time will harm it, so thoroughly well protected is it by thick coverings. It is only injured by frosts when they occur after the bud has begun to unfold in the spring.

The kitchen garden was looking well. There was a very fine batch of Brussels Sprouts for such a season, and the Celery, Lettuces, and general winter and spring vegetables were present in good quality and quantity. Peach trees were looking first-rate on a west wall, but Mr. Hudson said that they bore so heavily last year, that they have carried a much lighter crop than usual this season. Before the winter begins in earnest, the young growths are all freed from the galvanised wire, and if this is not done, the shoot is injured by cold at every point where it touches the wire. Pear trees used to canker very much in the open, but Mr. Hudson has conquered that evil by allowing them to make more growth; they have evidently acquired a stronger constitution under the extension system.

One of the most interesting features here now is the collection of sweet-scented Pelargoniums. At present they stand outside in front of the house, where they have been growing during the summer. Many who were present at the Agricultural Hall Show of the Royal Horticultural Society, would see some of these fine specimens arranged in a group; some of them are 5 or 6 feet high, and almost as many through, and they are carefully-trained symmetrical bushes. One of the best known is *P. radula* and *P. r. major*. Mr. Hudson has this trained on two fan trellises, each of which is just half of a circle, 7 feet in diameter. They are thoroughly well-coloured, and are certainly interesting and novel objects; they will be used as screens, and are very useful for such purpose. *P. quercifolia* and *P. q. minor* are rather strong growers, easily done, and they bear rose-coloured flowers. *P. fragrans* is the nutmeg-scented one, its perfume and appearance are very distinct. *P. denticulatum* is a dwarf, close

grower, never needs any stopping, but all the encouragement it can get. The lemon-scented *P. crispum* is a very distinct one, and its perfume cannot be mistaken; the foliage is very close, and the leaves are much twisted and small. *P. filicifolium* odoratum is not easily grown, but it makes a charming plant. *P. capitatum* is rose-scented, and a capital plant; it is said that the foliage of this one is used commercially in the manufacture of Rose-scented perfumes. Then the old Pheasant's-foot variety has a perfume similar to turpentine, and *P. tomentosum* is that of like peppermint. *P. Little Gem* is one of the best for small plants, it is a very close grower, and looks well and keeps well in a 6-inch pot. *P. Lady Heytesbury* is a pretty hybrid, which might do well for bedding; also *P. Shottesham Pet*, which has large dark rose-coloured flowers. *P. Fair Ellen*, an English-raised seedling, is very like *P. Pheasant's-foot*; and *Prince of Orange* has a very fine flower, quite showy in itself. *P. Major Clarke* is a variety much after the radula type, but easily distinguishable; it is not a free grower. *Rollison's Unique* is well-known, and produces fine decorative flowers.

Much care must have been necessary to encourage these *Pelargoniums*, many of them anything but free growers, into such large specimens; and besides these, Mr. Hudson, who has evidently great esteem for plants emitting fragrance, has some plants of *Aloysia citriodora* on umbrella-shaped trellises, which might be useful for table decoration if the scent does not prove too powerful.

In some lean-to houses were nice batches of Ferns, *Bouvardias*, and *Crotons*, and in another one some nice dwarf plants of *Carnation Winter Cheer*, just commencing to bloom; also some plants in flower of *Mrs. Cannell*, a very good rose-coloured bloom, darker than *Miss Joliffe*, and a very useful variety. In this house is a large tree of *Napier Nectarine*, which covers the roof. The tree abounds in thin well-ripened wood, which bears very freely, although some growers would prefer stouter shoots. In the greenhouse were two large baskets of *Asparagus decumbens*, a very graceful plant so used, and one that requires renewing but seldom. In another small lean-to are the only Orchids grown here, consisting of a few *Dendrobiums* and a very large plant of *Lælia purpurata*; they stand beside a batch of young *Ixoras*.

The Vines were looking first-rate, but most of the fruit had been removed. A few good bunches of Black Alicante were still hanging, and some capital bunches of Hamburgs in size and colour, told of the good character of the general crop that had been taken. The later varieties, such as *Lady Downes*, *Gros Maroc*, and *Gros Colmar*, were also hanging. Mr. Hudson has inarched *Lady Hutt* on to a Muscat, and the fruit, though not so rich as a Muscat, is very fair in flavour, and, of course, it will keep much longer.

Mushrooms are grown in quantity in the spacious old wine-cellar of *Princess Amelia*. Mr. Hudson has no difficulty in producing these, and he keeps up a supply the whole of the year. There were plenty of excellent Mushrooms ready to cut at the time of our visit, and other beds showing a succession, that will well provide for the next few months.

THE SIAM TEAK TRADE.

THE British Consul at Bangkok, reporting on the trade of that port for 1892, says that Rice and Teak are the two chief industries of Siam. Referring to the latter, it seems that 14,637 tons valued at £62,793, being a decrease of 1463 tons upon the exports of 1891. The continued depression of the London markets offered little inducement to shippers in Bangkok to charter tonnage for direct shipment to Europe. It was found more profitable to supply the local demand, which was sufficiently keen on account of extensive building in Bangkok to keep three European steam saw-mills fully employed during the season. There was also a fair market in Hong-kong, to which most of the secondary wood is shipped. The quality of the Teak which has been shipped to London from Bangkok, has much improved of late. Shipments are now confined to

these British firms, and great care is exercised in selecting the choicest wood. Burmah wood has still the best reputation in home markets, but there is now nothing to choose between the two.

The preference is certainly to be given to Siam as regards cube average and length, the former of which occasionally reaches 50 feet, and the average length is seldom below 28 feet. The shorter lengths of 15 to 20 feet seem to be plentiful in Burmah cargoes, which is due to the fact that the forests of the Burmah side are probably more exhausted than those of Siam. When the improved quality of Bangkok shipments become more generally known to buyers in London and on the Clyde, Siam Teak will doubtless be more in demand than that of Burmah.

Of the British firms engaged in the Teak trade, in which a large amount of capital has been invested, two have leases of forests in the north, and have been obliged to advance large sums of money to foresters for the purpose of working out the wood. With price at £9 10s. per ton, and stocks in London going off rather slowly, the prospects of the Teak merchants are not particularly encouraging.

THE LEMON-SCENTED BUCKLER-FERN (*Lastrea montana*).

It is a singular fact, that ninety-nine people out of a hundred express surprise when told that one of our native British Ferns is powerfully scented, so strongly indeed that it is a matter of astonishment to those who know it, that some commercial use has not been made of it by the perfumery trade. In many parts of England, Scotland, and Wales, the Fern in question, *L. montana*, grows so profusely upon the hill-sides, its favourite habitat, as its botanical name indicates, as to give a distinct colouring to large stretches of the landscape, the experienced eye easily discriminating its lighter green from the darker tints which distinguishes its frequent neighbour, and a frequent rival, the common Bracken. At first glance the Fern bears a decided resemblance to the common Male Fern, with which it is often mixed, but a closer investigation reveals material differences. In the Male Fern, for instance, there is a long naked stalk for some inches before the pinnae begin, and of these the basal ones are an inch or more long, the frond thus beginning squarely. In *L. montana*, however, short pinnae begin quite close to the ground, so that the frond tapers all the way down from about two-thirds of its height, narrowing thence to the tip somewhat more abruptly. Then, too, it will be seen that the undeveloped fronds forming the crown are quite white, while in the common Male Fern they are clothed with brown scales; the colour is also a yellowish-green, as distinct from a decided green; and finally, if any doubt can yet remain of a frond being lightly drawn through the hand, the strong characteristic lemon odour becomes apparent by the rupture of the little glands in which it is contained. Its habit of growth is erect, each crown throwing up some six or seven fronds of about a yard in height, and arranged shuttlecock-fashion around it; in time, however, numerous offsets become established, so that an old plant may form a dense bush a yard or more through, and as these in congenial localities completely cover the ground, the variety-hunter has to keep a vigilant eye open if he wishes to be successful in his quest. In the earlier days of British Fern study, the wild varieties remained so persistently in the background, that for years the species was considered to be invariable; but presently the perseverance of several hunters, and chiefly the late Mr. Barnes of Levens in Lancashire, began to be rewarded by the discovery of several, and at length of many very beautiful and distinct forms, crested, plumose, and curious, and in many cases of quite distinct types of variation from any of the other species, *L. m. Barnesii* to wit, as the whole frond narrowed to less than a third of normal width, with the side-divisions set on at right angles to the stalk-like steps.

Mr. Barnes used to relate that on finding several

large plants of this unique variety on one of his expeditions, he was so overcome by his feelings as at first to be incapable of digging it up, its unlikeness to anything he had previously seen being such that he thought it must be a new species. Since then Mr. Whitwell, of Kendal, another ardent hunter of the same species, has found very similar narrow forms, but hardly showing the step-like character so clearly. *L. montana*, singularly enough, though on these exposed hillsides every chink and crevice teems with seedlings, is very difficult to raise culturally from spores. Mr. Barnes is the only one who has succeeded in adding new forms by selection. After some score of years search, he was rewarded by finding a crested form bearing tassels at all the tips, and from this he raised *L. m. ramo-coronaris*, *L. m. coronaria*, and a grandiceps, in all of which this character is much accentuated. Mr. Smithies also found a finely tasselled form, and the writer was fortunate enough to add another from Dartmoor. Several true plumose forms have been discovered in the Lake district, where, indeed, the majority of the varieties have been won, the latest local list embracing some sixty odd. When accompanying Mr. Whitwell recently for a hunt in Kentmere, near Kendal, he found an attenuate caudate form, and one with an extremely long forked tail on the tip of each frond, a very curious freak, but hardly a beauty as found; the writer found a large plant of peculiarly foliose character, and a specimen of the ubiquitous *truncata*, in which all the terminals appear to be bitten squarely off, the midrib protruding as a Thorn. This very singular variety seems to crop up everywhere where the species is common; we ourselves have found it several times in various places in Scotland and the Lakes, Mr. Wollaston at Chislehurst, Kent, and in Westmoreland the hunter now ignores it, dubbing it the "beginner's variety," since every tyro commences by bagging it as a prize. A not uncommon variety in that district is *variegata*, in which the fronds are appropriately splashed with bright lemon-yellow, as if it were trying to put on a tint consistent with its fragrance. Mr. Gott, of Kendal, found a splendid congested form, one of the finest varieties we have seen; and Mr. Stewardson's *concinata* has all the side divisions twisted into little curls. The Fern is found very widely dispersed, specimens having been found by the writer in Epping Forest in quite recent years. Kent has it sparingly, in Sussex (Tilgate Forest) it densely covers the hill-sides, also in the Lake district; while in the western counties it is by no means a rarity, fringing the streams and dotting thecombe sides with innumerable handsome plants. Its favourite soil is good yellow loam in well-drained situations, but not dry ones. Elevated hill-sides, not far from the cloude, form its chief stronghold; in lower situations it fringes the streams. Clearly in its natural home it stands the full brunt of the sun, and hence it can be easily cultivated in many gardens, irrespective of shade, always provided its roots are not allowed to suffer from drought. Under glass it is apt to get drawn, but with plenty of light makes pretty specimens. Notwithstanding, however, this ease of culture, it is a curious fact that it is very rarely utilised as it deserves, as our opening remark proves. Chas. T. Druery, F.L.S., F.R.H.S.

A TRAVELLER'S NOTES.

(Continued from p. 395.)

ASCENT OF FUJI-YAMA.

I HAVE just concluded a journey on and around Fuji-san—better known as Fuji-yama. It is, as everybody knows, the most beautiful, the highest, and the most famous mountain in Japan, rising on all sides in an unbroken sweep from a somewhat extensive plain, to a height which has been variously estimated from 12,234 feet to 12,437 feet. It dominates all around it. From its summit, at sunrise, lakes, towns, provinces, mountain ranges, and the ocean are all visible, though in a few hours these are often obscured by billowy masses of dense white vapour of indescribable splendour. Occasionally a break occurs, and a glimpse is caught of the plains below; but it is rare. The mountain is

celebrated for these cloud effects—truly a most impressive sight—several thousand feet below a sea of cloud, nothing else and nothing more, the only land in sight the peak on which you stand—"the only island in the world," as an authority has put it. The continuous change of form, the rapidity of motion, the calm, isolated peak, rising majestically above the constant turmoil, all combine to give splendour to the picture.

For only two months in the year, in the height of summer, is the entire ascent possible. Large rifts of snow are present all the year round, and the temperature at night is often little above freezing point, though in the plain below it is between 70° and 80°.

The crater of the volcano, quiescent for many years, though by some not considered extinct, has been variously estimated at depths varying from 416 feet to 584 feet. In diameter it is close on 2,000 feet, and is surrounded by a complete circle of sharp peaks.

From Gotemba the ascent can be performed for the first 6000 feet on horseback, but I preferred to do it on foot.

Starting at 2 P.M. one afternoon with an interpreter and two coolies, carrying food, clothing, &c., and travelling at a leisurely pace, we reached hut No. 4 at 6.30 P.M., where we stayed the night. I must here digress to mention that Fuji is divided nominally into ten stations on those sides which are accessible, No. 1 station commencing about 6000 feet elevation, or from the point from which it is necessary to send horses back. Nominally it is thus divided, but all stations are not kept up.

After leaving the railway-station, for an hour we passed over level ground well-wooded and sprinkled with wild flowers, before we reached the foot of the actual ascent.

In this stretch I saw many plants that occur also in Corea, *Pueraria Thunbergiana*, *Pinks*, *Campanulas*, &c., *Bocconia cordata*, and *Hydrangea involucrata punctata* were flowering and seeding freely; *Clematis*, *Diervilla*, *Tiger Lilies*, and *Scabious*, were all flowering and common. *Retinopora obtusa* and *Cryptomeria japonica* were the most noticeable Conifers.

Over a slightly rising, undulating plain, under coarse grass with nought but a few Pines and stumpy vegetation generally, we wended our way for the next 1500 to 1700 feet to the commencement of the forest, a forest thick and rank, but with no individual specimens of great size, *Tsuga Sieboldi*, *Larix leptolepis*, *Pinus Thunbergii*, *Lindera obtusiloba*, *Spiræa Andromeda*, *S. japonica*, Oaks, and a few Maples, chiefly *rufinerve*, were noticeable.

Larix leptolepis is worthy of a special word. It grows on the plains, and is the tree found at the highest elevations on the mountain. On the south and east sides I have personally observed it at 8000 to 8500 feet, a scrubby stunted bush; at from 2000 to 4000 feet it forms good trees, with trunks 2 to 2½ feet in diameter; and on the plains, though scarcely attaining that size, the specimens are of even and shapely form.

I may mention of the three sides I ascended (or descended) the mountain, that from Gotemba, though the least arduous and the one most usually selected, is decidedly for me the least interesting from a horticultural point of view, the path is composed of loose ashes somewhat fatiguing to traverse.

Beyond 8500 feet, the only vegetation are scattered pieces of red or white flowering *Polygonum* and a very handsome *Thistle*, which thrive in the bare ash, to within some 2000 feet of the summit.

From 8000 feet to the summit a smooth, sharp incline of ashes, a dull purple, or reddish-purple in colour, broken occasionally by the *Polygonum* or *Thistle*, is all that is to be seen; the narrow path trodden firmly by the feet of thousands of pilgrims, is visible nearly all the way, as it ascends nearly straight with but slight deviations.

At every hut it is usual to stop to rest both the coolies and oneself. These huts are of wood at first, but near the summit they are composed of lumps of lava lined with boards. The one in which we passed the first night was some 10 yards by 20 yards, looked after by one woman. It possessed a floor, a door, a fire, and no chimney. Ten men beside myself lay there; the men presumably slept, but insects engaged the major portion of my attention. The door was carefully shut at 8 o'clock, and not opened till 3 o'clock next morning. It then seemed to me somehow that the atmosphere was inclined to be a little thick.

After breakfast we proceeded over the waste of fine ash, a monotonous, wearisome climb to the summit. As we neared it, large boulders became frequent, over which it was often necessary to climb. Early

in the morning my interpreter began vomiting, and at last got so weak, he could not go 50 yards without resting. This much delayed us, and we did not arrive till 5 P.M. The interpreter ate nothing at all; on reaching the hut he lay down, fell into a heavy sleep, and was delicious through the night. He ascribed it subsequently to the rarified air, but I was loath to believe this, and thought it only fever.

However, soon after reaching the summit, I had sharp pains in the back of the head, which continued through the night, and did not vanish till I reached the plain next day. I also noticed the lower we got, the better the interpreter seemed to be, and half-way down he was again able to eat. I am therefore forced to think the change from the heat below to the cold above must have been the cause of his sickness. Another man in the hut that night was in the same condition as the interpreter, and I am informed many Japanese suffer in that way on making the ascent. On the summit are colonies of priests, and numerous huts and small temples of the Shinto faith. On the Gotemba side, three huts and a small temple form a square; all are built up with blocks of lava. In the hut that night, also with a fire and no chimney, were fifteen men; they lay in rows, head to feet—that is, as you looked down a row, first you saw a head and then feet, and so on. I lay in one corner, rather apart, on thick quilts, rich in animal life. Beside me, the interpreter, talking away all night merrily; beyond, the other sick man, who was good enough to be silent. I think I wrote the atmosphere was thick the previous night, on the morning of this one it was positively solid, for which the fire was chiefly to be thanked.

The sunrise was fairly good. I once had to get up on the Rigi at some fearful hour to see one, and was struck by the similarity of my feelings on both occasions. Skirting the crater, we began the descent at 6 A.M., facing due east, our ultimate point on the plain being the village of Yoshida; below us in the distance we could discern it—a small blotch on the landscape. The descent was sharp, our coolies quitting the trodden path, and taking long strides through the loose rolling ash, straight down the mountain side. The ash, some 6 inches deep, helped to carry us down, and we progressed at a rapid rate for some 4000 feet, leaving the interpreter far behind. The feeling was most exhilarating, but the strain on the muscles of the legs is too great, unless one is used to it.

After a short rest, we entered the forest, or, rather, the low vegetation which soon led to the forest—quite different, and to me more interesting than that on the south side. Some flowering grasses were pretty at 8000 feet, and a large *Campanula*, *C. punctata*, very common; it flowers with equal freedom on the plains, and is much like *C. Medium*, varying in colour from white to pink. Birch and *Rhododendron* were also noticeable. At 6000 feet, *Tsuga Sieboldi* began, and was met with in quantity all the way down—handsome trees, attaining a height from 70 to 80 feet, and covered with last year's cones. At a short distance beyond I came to *Abies Veitchii*, and of this the forest was mostly composed. On account of the close proximity of the trees one to another, handsome specimens were rare, and even when the tree had a chance to develop, it grows tall and slender. I can scarcely call it symmetrical, though, at the same time, on account of the closeness of its rich dark foliage, so silvery beneath, the effect is very grand. *Veitch's Manual* mentions specimens 100 feet high. Possibly, on the northern mountains, *Maries* saw it this height. On *Fuji-yama* the average I noticed were from 50 to 60 feet. Trunks lay about, felled by Nature's hand, which must have been taller. *Picea Alcoquiana* is not so frequent on this side as on the Gotemba side. As all students of our Conifer literature know, it is a regular and handsome tree. *Rodgersia podophylla* forms a considerable percentage of the thick undergrowth in parts; tons of it could be collected without difficulty. Its leaves are often little short of 2 feet in diameter.

On this side the huts are more pretentious, and usually have a little temple attached, at which we sometimes saw one or another of the many hundreds of pilgrims we met muttering their prayers. Women seem rarely to make the ascent; I noticed but three. These huts are buried in the *Abies* forest. The trees rise on all sides, magnificent in their severe and silent grandeur. The path is steep, and often rough, and I was not sorry to reach the bottom station, where horses are obtainable to carry one to the village of Yoshida, 7 miles distant.

Passing first over slightly-falling ground, hidden by long grass, and innumerable flowering shrubby and

herbaceous plants, *Anthericum*, *Hemerocallis*, *Platycodon*, *Campanulas*, *Pinks*, *Scabious*, and low bushes of a *Desmodium*-like plant [This is *Lespedeza Sieboldii*], *Lychnis grandiflora*, and *Nerine japonica*, we soon reached level ground. I may here mention I do not understand my father not having met with *Platycodon Mariesii*, *Rodgersia podophylla* or *Clerodendron trichotomum*. Presumably, with the first and last named, he did not leave Yokohama during their flowering season; and with *Rodgersia*, it is probable he ascended and descended the mountain at the Gotemba or south side, where I did not meet with it. *James H. Veitch*.

(To be continued.)

SALPIGLOSSIS.

THOSE who have not grown this pretty, tall-growing annual have missed a treat this season, for I have never observed them so fine or floriferous before, the hot and dry weather just suiting the plant. A long row in the kitchen garden at this place has been much admired. The variety, *S. variabilis grandiflora* gives a great range of colours, including the pencilled, intensely dark blue, chocolate, and various shades of yellow. Many of the plants grew to 3 feet in height, and a quantity of side-shoots, which flowered freely.

It is a mistake to afford the young plants much heat, as it draws them up weakly, and spoils their growth, for once an annual plant becomes long-jointed, no after-treatment will make it stocky and sturdy. By sowing the seed early in March in a cold frame, and pricking out the seedlings directly they are large enough to handle, in a temporary shallow pit, stocky growth is secured, and the foundation laid for future success. By lifting the plants carefully with soil attached to the roots, and choosing showery weather for planting them out, success is fairly certain, unless the season is unusually wet and sunless. *E. M.*

PLANT NOTES.

SPIRÆA CALLOSA ALBA.

This is a charming subject to grow on the rocky; and in spite of the past hot and dry summer this plant is making a capital display in a nook of our rockery. It does not grow here more than ¾ to 1 foot high at the most, as the shoots are cut off close to the ground every year. The young vigorous growths springing from the base give stout heads of pure white blossoms just at a time when flowers are not plentiful on a rockery. *E. M.*

ALONSOA WARSCEWICZII COMPACTA.

This half-hardy annual is not well known, and consequently not extensively grown, as it undoubtedly deserves to be. Grown in beds by itself, or in patches in the mixed border, it is very effective, the racemes of bright scarlet flowers and dark green serrated foliage showing to advantage in either case. The plant is a good grower and free-flowerer, and in ordinarily rich soil it attains to a height of from 12 to 15 inches, and the flowers are useful and effective for the embellishment of small vases or glasses, and in which they keep fresh a long time with the stems in water. *W.*

ALONSOA LINIFOLIA.

The only difference worth noticing between this half-hardy annual and *A. Warscewiczii compacta* is that the former is 6 or 8 inches higher, and has long narrow leaves. It is well worth growing. *W. H.*

MAURANDYA BARCLAYANA.

Plants of this effective climber, raised from seed sown in the spring of this year, twining round the stems of some of the standard Roses in the flower, are very telling just now, the loosely hanging shoots of purple flowers and pale green leaves showing off to advantage on the once bare and unsightly stems of the Rose bushes. The plant is also very telling in effect, growing in 6-inch pots for

standing on the side staging in a greenhouse or conservatory, with the flowering shoots hanging over the edges, being equally suitable and useful for planting in baskets suspended from the roof, with the twining shoots of flowers and foliage depending therefrom. It is also a capital plant for covering a trellis or lattice-work in either of the structures indicated. *W. H. W.*

AMERICAN PARKS AND GARDENS.

WHAT THE CURATOR OF THE ROYAL GARDENS AT KEW SAW IN THE UNITED STATES.

GEORGE NICHOLSON, Curator of the Royal Gardens at Kew, who has been spending rather more than two months in this country, sailed for home a few days ago. Mr. Nicholson was appointed a judge of horticulture at the Columbian Exposition for Great Britain by the Royal Commission, and he spent a month at the Fair in his official capacity. In conversation on the subject of his visit just before he sailed, Mr. Nicholson said, in reply to some questions:—

The Arnold Arboretum.—"My specialty, however, is trees and shrubs, and therefore the place to which I went first and where I stayed longest was the Arnold Arboretum in Boston, and of this unique institution I can hardly speak without enthusiasm. I know of nothing just like it. There are other arboreta in the world, but they are all subordinated as annexes or dependencies to botanic gardens. This is a true arboretum, devoted to trees and shrubs exclusively. It is young yet, but it is conceived on a broad scale, and the foundations are laid wide and deep to admit of growth and expansion, so that ultimately every tree and shrub capable of cultivation in the climate of Boston will here be found, and it already contains the most complete collection yet made of shrubs which are hardy in the North Temperate Zone. Of course, all the plants are arranged systematically, according to their botanical sequence; but the natural advantages of the place, with its beautifully undulating ground, are made the most of, so that splendid landscape effects are produced. The margins of the roadways are planted with shrubs, which give beautiful effects the year through, with flowers in spring, rich foliage in summer, and coloured leaves and fruit in autumn. And these shrubs are used with such profusion, that one may find more individuals of certain species here than can be found in all the other botanical gardens of the world combined. Besides its scientific value, this great collection is so arranged as to present one of the very best lessons in natural planting that can be seen anywhere. In addition to this planting, there are many acres of natural woodland, in which are old trees and a thrifty young growth to furnish object lessons in practical forestry, and near one boundary there is a steep slope clothed with an ancient Hemlock wood, which gives a feature which cannot be matched in dignity and beauty in any park with which I am acquainted.

"In the systematic plantations every single specimen was raised on the grounds, and a complete record is kept of them. On a carefully-formed map the position of every tree is marked, and reference to the unique card-catalogue will give a complete history of every plant, so that the student will know when the seed was planted or the cutting was rooted; or, if it is grafted, where the stock and scion came from, together with an account of its size or habit every year, and any peculiar circumstance connected with any stage of its life. I know of no other establishment where records of this kind are made, so that the catalogue which is useful now will grow in value as time goes on. But perhaps these details are all familiar to you."

Mr. Nicholson was assured that Americans, as a rule, had perhaps as little familiar acquaintance with the arboretum as Europeans, and he therefore continued: "Well, all your people ought to know that in the museum at the entrance to the arboretum is a herbarium devoted to woody plants

which is unrivalled, and that here, too, is the best working dendrological library in the world. Of course, you do not need to be told how Professor Sargent, the Director of the Arboretum, stands among men of science, but I can only add that his position is recognised by every European botanist of rank, and, in a way, through the Arboretum, he is doing a great deal for Europe as well as for America. He returned last autumn from an extended journey in Japan, bringing with him the seeds of more than 300 species of plants. Perhaps a hundred of these have never been under cultivation, and tens of thousands of plants from these seeds are already established, and they will be distributed from the Arnold Arboretum to enrich the gardens, not of America alone, but of the entire Western world. This is nothing new, for already many of the most interesting ornamental plants in use have been disseminated from this same source. In his office in the Museum Building, Prof. Sargent is writing his great work, *The Silva of North America*, which contains a description of every tree growing in America north of Mexico, and which I consider the most important contribution of the century to dendrological literature. In this work Professor Sargent has the co-operation of Mr. C. E. Faxon, one of the arboretum staff, who is unrivalled as a botanical artist. Professor Sargent is also the director of *Garden and Forest*, which is, in a way, the illustrated organ of the arboretum, and therefore contains much original information as to trees and shrubs, and is a horticultural journal of the highest class in every way. For example, the series of letters now running in this publication, descriptive of his Japanese trip, contains a summary of all that is known of the forest flora of Japan up to this date. It is well known that these islands are rich in arboreal vegetation, and from their position, facing the Pacific, as your own shores look out upon the Atlantic, they produce trees under similar conditions to those of North-eastern America, so that many of the trees which Professor Sargent has brought from Japan will doubtless grow on the eastern shore of the United States better than they will in Europe." *New York Daily Tribune, Sept. 10, 1893.*

(To be continued.)

FORESTRY.

ARBORICULTURE IN THE SOUTH AND SOUTH-WESTERN COUNTIES.

No one travelling in a south-westerly direction from the metropolis can fail to notice the vast areas of bare land without a tree or a hedge, but occupied by immense numbers of sheep; these are the great chalk downs. But in the low-lying and more fertile land, it will be noticed there are a great number of copses planted with Oak and Hazel, to meet the requirements of the sheep farmers, who occupy the downs as sheep farms. The system of forest management is totally different to what is carried out in any midland or northerly district.

The chief requirements of these farmers are hurdles for folding purposes, and to meet the demand, the woods are planted sparsely with Oaks and other forest trees, but filled up to about 3 feet apart with Hazel, Ash (and Willow in wet places) as underwood. In October, when the underwood has reached maturity, which, in the case of hurdle-making, is considered best at about eight years old (but the first cutting over is not of any great bulk), it is usually allotted out into plots of from 2 to 4 acres, and either sold by private treaty or public auction (the latter is mostly the practice) to wood-brokers, who in the first place (after the wood is cut down) cause all the wood suitable for hurdles to be laid on one side for the hurdle-maker, who charges 3s. per dozen for making them. The next class of wood is split up into spars for thatching purposes, and what is large enough is bundled up for broom-handles, the refuse either going for fagots for household purposes or made into smaller ones, which find a use at brick kilns.

The prices obtained per acre in the first place, for

the wood, ranges from £4 to £8, sometimes as much as £12 has been realised for some of good quality. This, like other things, has much gone down in value, but, at the same time, a good fair piece of underwood pays a landowner better than some of his farms. The usual price of hurdles is 7s. 6d. per dozen, which also includes one shore or stake to each hurdle, for erecting and fastening it. Thatching rods or spars are split up, and sold in bundles of one thousand at from 2s. 6d. to 5s. per thousand, according to length. The margin of profit may appear small, but wages are rather below the average in the district, and the men make a satisfactory living at the work.

In the spring following, the coppice presents a trim appearance, every sprig being collected together and tied up. Nothing but the forest trees are to be seen, and advantage is then taken, where necessary, to thin out Oak for bark stripping. But this latter system is carried out rather too severely to my mind, as I do not consider that Oak and other hardwood trees in a plantation require to be thinned every eight years. The cause is, I think, in many cases that Hazel and other underwoods make an earlier profit, but the filling up of vacancies with forest trees is much neglected by the owners. By the next autumn it will be observed that the underwood has made considerable growth, and the owner is now able to discover the whereabouts of the stools, and to fill up any vacancies which may appear in the underwood, and at the same time introduce an occasional forest tree in any case where it could be done without overcrowding, the young Hazel acting as nurse plants.

In renovating and planting-up an old plantation, I have found it practical economy to make the pits oblong and of good size, and to plant two or more underwood plants therein at the ends of the pit, as in most cases it will more quickly form a stool, or should one die there would still be one left.

Rabbits commit great depredations in young-growing wood, especially of the second year's growth, and should be kept down, or wire-netting fixed around the plantation to keep them out of it. Spanish Chestnut is of no use as an underwood plant in this district, as it will not work-up; it should, therefore, be discarded here, although in some parts of England nothing more suitable or profitable can be grown. *J. Garbett, Canford Woods.*

PLANTS OF THE PHILIPPINE ISLANDS.

WE extract the following notes on the flora and products of the Philippine Islands from a report recently furnished to the Foreign Office by Mr. Consul Stigand, dated Manila, July 24, 1893:—"The flora of the islands would require a long chapter for proper treatment. There is a great absence of flowering plants, and those which do flower have, as a rule, very small flowers, and the absence of odorous blossoms is as remarkable as the absence of singing-birds. Flowering Orchids are abundant, both in variety and quantity in the forests, but in the towns a fair-sized plant of an ordinary species cannot be procured under 1 dollar, or about 3s. By the roadsides near Manila the principal trees to be seen are the tall and graceful Betel-nut Palm, Bamboo, Bananas, and other tropical trees and plants. Vegetables—Beans and Peas, for example—are grown here by covering them up from the sun with trellis-work covered with Banana and other leaves; but most of the vegetables are brought from Hong-kong. There is hardly any eatable fruit but Mangoes and Pine-apples, the latter growing as commonly as weeds. The Sugar-cane, Coffee-plant, Abaca or Hemp (*Musa textilis*), Tobacco, Maize, and Rice, are the plants chiefly cultivated. As for the woods of the country, their nomenclature forms an immense list; and the better kinds of woods are too little known. Some of these woods are excellently suited for furniture, especially the 'Narra'-wood, which has the look of Mahogany, but is not so close in grain, while having a lighter colour."

The only outside market for Philippine woods is China, where large quantities are shipped annually, and the hard woods of good length find great acceptance in that market for the building of temples. A wood known as "Camagon," a sort of ebony, is a good wood for ornamental work, but it is defective, owing to the white streaks that run through it. A sort of Boxwood, or *Lignum-vitæ*, grows in the country, but not in sufficient quantity to be of marketable value. None of the Philippine woods have had a fair trial in the home market.

Referring to gutta-percha, a good business, it is said, was done in this article for a few years, but owing to a system of adulteration carried on by the Chinese, the trade has been entirely killed, and scarcely any business has been done for two years.

CULTURAL NOTES.

THE STREPTOCARPUS.

THESE have within the last few years taken a prominent place in the greenhouse, being free flowering, easily raised from seed, and opening their first blooms within five months from sowing the seed. This year, seed which I sowed about January 24, in pots of fine soil, and kept in the house with the *Hippeastrums*, began to flower early in the month of June. The seedlings are very small at first, and require careful handling. It is best to prick out one dozen of them in a small 60-pot; and when they have spread well over the surface, re-plant in threes in a pot of same size, and when these have rooted through all the soil in the pots, repot them singly, still in small 60's. The plants when small grow best in a cool Orchid-house, or similar place, where the air is kept moderately moist, and the temperature about 50° to 55°.

The *Streptocarpus* is a thorough greenhouse plant, and can be wintered in a house from which the frost is excluded. They will do very well with *Calceolarias*, or any other comparatively hardy, greenhouse plants. The seedlings produce flowers, very much of the same quality as the plants from which the seed is taken. *J. Douglas.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

CELERIAC.—As soon as the weather at night gets frosty, it will be necessary to lift a portion of this crop, and store it in sand in a cool place. When lifting, care must be taken not to bruise the roots, or they will decay, nor to cut off the tops close to the tuber, as they must push out a little growth, or decay sets in. When lifting only a part of the roots, alternate rows should be taken, thus affording more space for the remaining plants, and sufficient soil to mould over the roots. Celeriac should be stored in an open shed or light cellar, so that the tops may have light, and they are better when stacked in layers in banks, as Strawberry-plants in pots are sometimes wintered, and the mould should not be very dry.

CAULIFLOWERS.—It will now be necessary to protect all heads becoming fit for use, or frost will spoil them. It is not well, however, to cover them too closely, this having a tendency to cause them to be of over-strong flavour. Cauliflowers raised from seed sown the last month may be pricked out in light soil in a cold frame, the lights being put on only when the weather is very rainy or frosty, air being freely admitted at all other times, or the lights removed entirely.

CHICORY.—This plant is not much in demand till hard weather has rendered other salads scarcer; however, a few heads may now be taken up weekly, the tops cut off within one inch of the root, and planted in some dark moist place—cellar or Mushroom-house. The roots may be planted in a 9 or 12-inch pot, so that the crowns are level with the soil, and afforded a good watering, allowing them to stand in a shed for a day or two afterwards, before placing in the cellar, &c. If this be not done, the young growth may damp off. Light must be quite excluded during growth. No heat need be applied

at present, the warmth of the place being sufficient to cause the plants to grow, and when this is accomplished the leaves are very tender.

SEAKALE.—In some parts frost will have caused the plants to shed some of their leaves; and where this is the case, these leaves should be cleared away from the crowns, thus affording access to the sunlight and maturing them earlier than would otherwise be the case. As soon as the centre leaves part readily from the crowns, the first lot of plants may be taken up for forcing. Growth will not be made freely at this time of the year, and more time must be allowed for the shoots to grow. When lifting Seakale, any roots which are about the thickness of the little finger, should be cut off and laid in mould for planting and sets. If these are made and planted as soon as the ground can be got ready for them, they will start into growth early in the spring. The sets when planted should be covered with earth to the depth of 2 inches, and on heavy land, leaf-mould may be strewn over them.

RHUBARS.—Roots may soon be prepared for forcing, and the best for this purpose are two-year old ones, these throwing up finer sticks than older ones, and they are less likely to flower. The masses of roots and soil may be packed closer together if very large, but smaller masses, such as those which are two years old, may have a little more space allowed them. Roots laid in soil, in a shed facing north, and covered with litter, will commence to grow readily when put into the forcing-house. The Royal Albert is one of the best for early forcing.

GENERAL WORK.—In many parts Runner Beans, Vegetable Marrows, and such-like have been destroyed by frost, and in such cases the ground should be cleared, and manure wheeled on to it in readiness for digging. Leaves of trees should be raked up when dry, and stacked in heaps. Protect tender vegetables at night, as previously advised, and see that French Beans and Peas growing in cold pits do not suffer for want of water, admitting air freely in favourable weather.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

LIFTING AND REPLANTING FRUIT TREES.—Young vigorous trees of Apples, Pears, or stone fruits, the growth of which previous root-pruning may have failed to check sufficiently to cause fruiting, may, at this season, be replanted. If the operation be performed whilst the trees are still in leaf, and the latter are prevented from drooping by affording a good watering to settle the soil about the roots, and subsequent overhead syringings in dry weather, the chances are, that any bloom-buds that may have formed will not be injuriously affected, the warmth of the soil encouraging rooting before winter. The transplantation of other trees may also be carried out in the same manner, if the new stations for the trees are ready for them, and they can be transplanted with despatch. Care should be taken to have all such trees secured to stakes to prevent damage to the roots by wind-waving.

RED CURRANT BUSHES.—Young, over-vigorous bushes may be similarly treated to the above, otherwise the growth will be very strong, and fruit be of poor quality for several years to come; that is, till the bushes have impoverished the soil in which they are growing, whereas the check given to them by lifting and replanting brings about the same result at an earlier period, which, once secured, is maintained by the heavier crops the bushes carry.

GOOSEBERRIES.—These bushes may also be transplanted at this season without fear of losing the crop. Indeed, where the Gooseberry sawfly grub has been troublesome, if a fresh quarter can be found for them, transplanting is a pretty sure remedy, at least for a few seasons; care being taken to carry no old soil containing the larvæ with the roots. Early last autumn, and whilst the bushes were in full leaf, I had a Gooseberry quarter filled with large bushes transplanted, and despite the dry season, every bush removed carried a full crop of berries, and there was no trace of the caterpillar, although in another quarter, only a few yards distant, the caterpillars gave us much trouble in checking their ravages.

FRUIT-GATHERING.—All varieties of Pears, except Winter Nellis, Josephine de Malines, Glou Morceau, Easter Beurré, Jean de Witte, Bergamotte d'Esperen, Beurré Rance, and a few others, may now be gathered. The late sorts named above should be

left on the trees for about a fortnight longer, and in the event of frost, double-netting should be hung over them. Of Apples, Wellington, Norfolk Bearer, French Crab, Scarlet Nonpareil, Cockle's Pippin, Mannington's Pearmain, and other late varieties should be left on the trees for another week or so, unless frost threatens, when all of them with the exception of the French Crab should be gathered. Quinces and Medlars should also be left ungathered for some time longer, unless a change to much colder weather takes place.

THE FRUIT-ROOM.—The usual fruit-room met with in gardens is much too warm at present to admit of the softer-fleshed Apples, as Warner's King, &c., keeping well, and every means must be taken to keep the fruit-room cool by opening ventilators, especially at night. Frequent examination of the fruit will be more necessary than usual this season, owing to the earlier ripening of the same, and the damage wrought by the tom-tits and wasps, as it is possible for some of the damaged fruits to have escaped notice when storing them.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Tynperley.

CATTLEYA-HOUSE.—Cattleyas, such as Warneri, gigas, g. Sanderiana, those of aurea that have flowered, Rex, Schilleriana, and Aclandia at the cooler part of the house, should be watered sparingly, say, once in seven days, but on no account allow them to suffer absolute lack of water. Cattleya Gaskelliana should be kept dry till such time as growth begins. This species, if in good health, is very free-flowering and a good grower, but it requires a few degrees higher temperature than is needed by other summer-flowering Cattleyas. Cattleya Skinneri and C. S. alba should be well supplied with moisture for some time longer, the new growth not being finished. These two species like rather more warmth and moisture to finish up their pseudobulbs than do others.

DENDROBIUMS.—As these plants finish up their pseudobulbs, and are gradually brought to a state of rest by withholding water, they may be placed in a cooler and airier house. To this section belong D. Wardianum, D. crassinode, D. nobile and varieties, D. heterocarpum aureum, D. Findleyanum, and most evergreen species, including D. densiflorum, D. Farmeri, D. F. albidiflorum, and D. thysiflorum; but these plants must not be dried off too severely, or they may lose a number of their leaves, which does not improve their appearance. A few Dendrobies which will need to be still kept in the growing house, not having finished their growths, are Brymerianum, Paxtoni, fimbriatum, f. oculatum, Dalhousieianum, clavatum, and moschatum, all of these taking a long season to mature their growth. With the Dendrobiums, Epidendrum bicoloratum, E. radicans or rhizophorum, Oncidium Lanceanum seem to find all their requirements, and the plants now freely growing should have a good supply of water at the roots. Orchids for flowering at this season are not many, and may be found in Oncidium tigrinum, O. Barkeri, O. unguiculatum, O. varicosum, and its varieties, O. Forbesi, O. pretextum, O. crispum, Miltonia Moreliana, Vanda cœrulea, and many Cyripediums.

WATERING, DAMPING, AND AFFORDING AIR.

With shorter days the evaporation of moisture is very much less, and in watering Cattleyas and Lælias, those plants which have finished their growths will need but little. A good guide as to the state of the materials as regards moisture is the condition of the sphagnum moss, if this shows a whitish colour it is then time to afford water, and sufficient should be supplied to moisten the whole of the compost, not merely enough to freshen-up the moss. If the watering be properly done, once a week will be often enough; but the plants should be looked over each morning, and if damping of the new pseudobulbs is observed—as at this season of the year sometimes is the case by reason of moisture getting between the pseudobulbs and the outer sheathing—the cause must be carefully guarded against by the grower in charge of the plants. If the outer sheathing looks at all damp, draw a sharp, pointed knife carefully and steadily up the outer sheathing without touching the new bulbs, and at once let out the water. The damping down of the various houses depends on the form of the houses, some requiring it oftener than others; and the kinds of materials of which the paths, stages, &c., are made

to some extent exercise an influence. In some houses the paths are made of iron or wood trellising, with earth beneath, and staging that does not retain moisture for any length of time; in others there are tiled paths, from which moisture is dissipated in a few minutes; and open wooden stages, from which water runs away at once. Houses so fitted up require damping three or four times a day in the winter months, when fires are going briskly. Houses with wooden-trellis or iron-grating paths and water-tight stages need damping once a-day after this date. Every Orchid-house should be allowed to get dry for a few hours in the middle of the day, and again during the night, but to have them in a very dry state always soon causes mischief to the plants, and a lot of work in getting rid of insect pests. Another secret in good management is the admission of fresh air on all favourable occasions; but in doing so, avoid opening ventilators on that side from which the wind blows. At this season it is advisable to lower the temperature of all houses a few degrees, keeping the Phalænopsis by day at 75° to 80°, at night 65° to 79°; the Cattleyas, by day, 65° to 70°, at night, 60° to 65°, with a rise of 10° to 15° by day if fine, and a drop of a few degrees if very cold; *Miltonia vexillaria* and the intermediate-house, by day, 65° to 70°; by night, 60° to 65°, a few degrees lower doing no harm. East-Indian Orchids, *Dendrobiums*, *Cypripediums*, *Aërides*, *Vandas*, *Saccolabiums*, &c., may have a day-warmth of 70° to 75°; and at night, of 65° to 70°, a degree or two, more or less, not signifying much.

THE FLOWER GARDEN.

By T. H. CRASP.

HARDY FERNERIES AND ROCKERIES.—Where the above exist, a thorough weeding and overhauling is needed at this season, all decayed foliage being cut off and removed, but preserving all that is green and fresh-looking, and afterwards pricking up and stirring the surface of the soil with a hand-fork, and making tidy. Where strong-growing plants are grown, such as Ivy, Vincas, *Gaultheria*, some thinning out of shoots and runners is necessary, in order to keep them within reasonable bounds.

ROSE BEDS.—The drought and the inability to water efficiently have in many places rendered a good late bloom on Roses impossible, and there remains nothing to wait for; therefore, the transplantation of Rose bushes may begin without delay. On light soils, Roses ought to be lifted every alternate year, renewing the soil, thus checking mildew, and increasing the size of the blooms the following year.

WALKS.—The present showery weather makes it easy to weed and clean walks of a hard nature, and after this has been done, the surface should be made smooth again with a heavy roller. Where hand-labour is expensive or not obtainable, a dressing of weed-killer afforded twice a year will keep walks in good order, but as weed-killers are poisonous, a good deal of care is needed in their use, and tame birds, pheasants, cats, dogs, &c., should not have access to dressed walks for some few days afterwards, nor should the dressing be allowed to reach the living edgings.

GENERAL WORK.—That the flower-beds may be presentable for the longest time, flowers and foliage past their best should be removed at frequent intervals. With regard to very choice or delicate species of *Pelargonium*, these should be taken up at once and potted, the gaps being made good with Wallflowers, Arabis, or whatever is used for flowering in the beds in the spring. If cuttings of the bedding *Violas* were put in early, these will have made well-rooted plants, and they may be planted out at this season, as there is yet ample time for them to get established before the winter. Plant them at about 9 inches apart each way, pressing the soil firmly about the roots and stem. A last batch of *Pansy* and *Viola* cuttings may now be taken, if the stock of these plants is deficient. Cuttings of *Calceolaria*, *Gazania*, and *Gnaphalium* can now be obtained in quantity; and as this is the best season to propagate them, some cold frames or shallow pits should be got in readiness, as no heat whatever is needed. Having chosen firm short-jointed cuttings, trim them neatly, and prick them out at 3 inches apart in a compost that should consist of loam two parts, and sand one part, pressing this soil closely about each cutting, and afterwards watering it well, but allowing the cuttings to get dry before putting the lights on. Bedding plants recently struck should now be brought under cover.

The *Pelargoniums*, if kept on the dry side, will winter in any light structure from which frost is excluded, but they will lose much of their foliage and softer shoots, unless damp can be dissipated by fireheat and ventilation. If bulbs are to be planted on turf, open spaces amongst trees, and by the sides of the walks, this kind of work should now be pushed on speedily; but if used in beds of shrubs, the latter should first be planted, and then the bulbs. Bulbs require to be planted at various depths, according to their size; small things as *Crocus*, *Scilla Siberica* *Snowdrops* at 4 inches, larger than these at 6 or 7 inches; and in all cases the trowel should be used, or a drill drawn of the required depth, the bottom of the hole or drill being made very firm before planting, as bulbs detest a soft bed, especially beneath or just round about them. If a dibber be used, it should be very blunt at the end, so that a bulb will rest quite at the bottom of the hole made by it. Therefore, when a bed of shrubs, Wallflowers, *Honesty*, &c., has been planted first, tread the soil evenly and regularly, and then plant the bulbs.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

USEFUL BULBS AND TUBERS FOR PRESENT POTTING.—The general collection of bulbs for winter and spring flowering should now be potted in the compost previously recommended in the case of *Anemone fulgens*. Six tubers in a 6-inch pot makes a useful decorative mass for a vase or basket; one bulb in a large 60; when well-grown, they are bright subjects for table-work. Of *Allium neapolitanum*, where hardy white flowers are in demand, a good quantity should be grown in various sized pots; they stand a long time in flower, and are useful in a variety of ways. *Crocus* in different colours should be potted in small pots for edging baskets or groups of plants in the festal season; they are very beautiful if put to the number of six in a small pot, as they will then go into almost anything with some fertilising moss in the bottom, and keep in flower a long time in a cool house if well supplied with water.

FREESIAS.—These plants are always in demand at Christmastide, and those potted in August will now be growing apace, and should be kept near the glass in a house from which the frost is just excluded, from which a few pots at a time should be taken and pushed on in a very gentle heat. Keep them free from aphids, and afford plenty of plant-food when the pots are filled with roots.

FRITILLARIA AUREA forces well, and it is easy to grow. It is very bright, and a good plant for decoration.

IRIS HISPANICA is attractive during the early spring months when flowers are scarce; they should also be placed thickly in 5-inch pots, and brought on in batches as required; they come quickly into flower, and are as beautiful as an Orchid.

JONQUILS, double and single, than which there is nothing more useful or beautiful when grown in pots. When they are well rooted, push them on in heat as required; they like high cultivation.

GLADIOLI COLVILEI (RED), AND THE BRIDE (WHITE) should be potted for spring-flowering in 5 and 6-inch pots, placing these under coal-ashes with the other bulbs, and when they are taken out of these keep them in a cool-house; they do not like to be forced.

HYACINTHS, SINGLE AND DOUBLE-FLOWERED.—Five-inch pots are large enough for one bulb, and if large potfuls are required, six or eight bulbs should be put into well-drained pots with some manure placed over the crocks; liberal waterings of liquid-manure should be afforded when the plants are growing freely. Hyacinth bulbs in glasses should not touch the water, but they should be as near as possible without touching it. Place them in a dark room or cellar till the roots are 3 or 4 inches long, then bring them to the light in a cool place. The Grape Hyacinths are very fragrant and beautiful flowers, the bulbs of which should be put thickly into 5 and 6-inch pots, and treated the same as the others.

POLYANTHUS NARCISSUS, ETC.—The various varieties are excellent for spring decoration, and amongst the best are *Bazelman major*, *Double*

Roman, *Gloriosa*, *Grand Primo*, *Her Majesty*, *Soleil d'Or*, and *Queen of the Netherlands*; they are strong growers, and require high treatment. *Convallaria polygonatum* (*Solomon's Seal*) is very useful as a winter decorative plant, forcing well, and it should be potted at this season in pots of various sizes, and placed with the bulbs; its bright green foliage is beautiful. *Scilla bifolia* and *S. sibirica*, and double and single *Snowdrops*, should be grown in good quantities for house decoration. The first batch of *Snowdrops* are always attractive, and they do very well in small 60's, and afford excellent subjects for dinner-table work; they must be grown in a cool-house or pit. Tulips in their various colours should be planted, a dozen bulbs in a 7 or 8-inch pot; and one bulb in a large 60 makes a useful plant. Tulips are very easy to grow, but they must be kept clean, and not be crowded with other plants when coming into flower. Some of the best varieties for pots are *Duc Van Thol*, *Artus*, *Waterloo*, *Clairmont*, *Duchesse de Parma*, *Pottebakker*, *Vermilion Brilliant*, *Thomas Moore*, *Tournesol*, red; *Tournesol*, yellow; *Imperator rubrorum*, and *Parrot Tulips*.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

EARLY VINES.—Vines intended to fruit at the end of April and onward should be pruned, if that has not been already done, and the house thoroughly cleansed as a preparation for starting. For very early fruiting the close spur system need not be so rigidly carried out as with late fruiters, but if it is found that one can with confidence realise good crops (year by year), by cutting to one or two buds, it is the best system, most simple in practice, and always the most slightly in appearance; the "best bud" system of pruning in time leads to disorder, and we never were so situated as to see any benefit accrue from such pruning. A system of renovating vineries may be of advantage in certain cases, by cutting down an old rod or two annually, and running up young ones in their stead. When spurs are of great length, and the Vines cannot be removed, short well-ripened wood may be turned backwards over them in order to have the bunches near to the rods. If there is any fear of bleeding from the wounds, some styptic should be rubbed over the cuts. Remove loose bark (but do not make bare the stems), and thoroughly scrub the rods with Gishurst compound (four ounces to the gallon of water), or soft soap and warm water. Woodwork and glass should also be cleansed in the same manner, and the surface soil removed to the depth of two inches, and replaced with good loam, with a proportion of Vine manure, as recommended by the makers. Better to supply the manure several times during the growing and fruiting season, than give too much at one time. If mealy-bug has become established, mix 1 part of tar to 6 of soft loam, and reduce it to the consistency of paint with water; then rub it carefully over the Vines with a stiff brush, leaving no part untouched. After the houses are prepared for forcing, allow them to remain cool and dry till November, when they may be closed. The chief cause of failure with early crops of Grapes is hard-forcing, especially while the roots are inactive; and root-burning by the too free use of fermenting materials must be avoided.

TOMATOS.—Plants now fruiting should not be cropped heavily, and as soon as the desired quantity is set, pinch out the rest of the blooms. Plants for winter and early-spring fruiting may still be raised in sandy loam by inserting short cuttings into the centre of 3-inch pots, and plunging them in bottom-heat. Plants for winter and spring fruiting should be grown without manure in the soil, and be kept firm in the stems by means of plenty of air and a moderate temperature.

STRAWBERRIES.—I never saw crowns of Strawberries, in pots, so prominent as they are this season; and the pots are filled with roots to the point of bursting. If small side crowns appear, these should be removed, and weak liquid manure afforded at every third watering. Starving the plants now, means a weakly show of flowers, which will set badly. The drainage of the pots must be kept clear; or where worms can enter them, they are liable to become waterlogged. If the balls have separated from the sides of the pots, the space should be filled with loam made firm. Plenty of air passing freely among the plants is now of great moment.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Oct. 10 { Royal Horticultural Society's Committees, at the Drill Hall, James Street, Westminster.
National Rose Society: Horticultural Club.

WEDNESDAY, Oct. 11—East Anglian Hort. Club.

SHOWS.

TUESDAY, Oct. 10 { Kent County Farm Fruit Show, Corn Exchange, Maidstone (two days).

WEDNESDAY, Oct. 11 { National Chrysanthemum Society, at Royal Aquarium (three days).

SALES.

MONDAY, Oct. 9 { Bulbs, at Protheroe & Morris' Rooms.
Plants, at Protheroe & Morris' Rooms.
Clearance Sale of Nursery Stock, at the Nursery, Hounslow Heath, by order of Messrs. Chas. Lee & Son, by Protheroe & Morris (two days).

Unreserved Sale of Orchids and Plants, at Silverdale Lodge, Sydenham, by order of W. Cobb, Esq., by Protheroe & Morris (two days).

TUESDAY, Oct. 10 { Bulbs, at Protheroe & Morris' Rooms.
Bulbs, at Protheroe & Morris' Rooms.

Unreserved Clearance Sale of Nursery Stock, Roses, &c., at the Darent Nurseries, Westerham, by order of Mr. Arthur Jeffkins, by Protheroe & Morris.

WEDNESDAY, Oct. 11 { Great Unreserved Sale of Superior Nursery Stock, at Lea Bridge Road Nurseries, Leyton, by order of Mr. J. Fraser, by Protheroe & Morris (three days).
Dutch Bulbs, Dwarf Roses, 30,000 Lily of the Valley Crowns, and Border Plants, Azaleas, &c., at Stevens' Rooms.

THURSDAY, Oct. 12 { Plants, at Protheroe & Morris' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, Oct. 13 { Orchids, at Protheroe & Morris' Rooms.
Bulbs, at Protheroe & Morris' Rooms.

SATURDAY, Oct. 14 { Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—51°·9.

The Florist's Cannas.

THE Cannas are coming so rapidly into favour, and the number of named varieties is becoming so large, that some sort of classification becomes necessary.

The botanical history of the genus has already been treated of by Mr. BAKER in our columns, January 14, 1893, and following numbers, and elsewhere. For garden varieties we are largely indebted to French nurserymen, such as MM. CROZY, LEMOINE, VILMORIN, and others. Some of our own nurserymen, as Messrs. PAUL & SON, CANNELL, with others, are busily at work in raising new varieties, whilst our American cousins are equally eager on their side of the Atlantic.

The ordinary Canna-flower is erect or pendulous, and has a calyx of three outer segments surmounting the ovary. This latter varies in shape in the different species, but is always studded with little green knobs; the corolla consists of three long, narrow petals curled in at the margin. Within the corolla are the stamens, typically six in number, but united together, or split into two, or deficient in some cases, but when present, all are more like petals than stamens. Indeed, with all that display of floral bunting, there is only half an anther visible, and that springs from the side of a petaloid filament. Hence, LINNÆUS included these plants in his class Monandria. Had he said Hemiandria, he would have been nearer the mark. The style is a rather thick, flat, broad ribbon-like structure, bearing a line of stig-

matic tissue along its upper edge. From what has been said, it will be seen that the flower is already double by Nature, in the sense that the greater part of its stamens are represented by petals. It seems, therefore, doubtful whether the florist will be able to attain his ideal of a double flower any nearer than at present. It might possibly be effected perhaps by an increase in the number of the petals. Moreover, we can hardly imagine the florist resting from his labours till he has given a circular outline to the flower, and made it assume the form and appearance of some flower other than a Canna. Whether this is good taste or not is a matter of opinion. We think the florist should no more make a flower pretend to be something that it is not, than an author should wilfully misquote another, or attribute to his neighbour something that he has not said.

So far as the cultivated forms of Canna go, we must, in any attempt to throw them into groups, consider, not so much the botanical differences, as the purposes the plants are intended to fulfil in the garden. So considered, height is perhaps the first consideration. We must have (II.) tall varieties for the back rows of our borders and the centre of our beds, and shorter ones (I.) for the foregrounds and for pot culture. Indeed, the dwarf varieties, in which we should include forms not exceeding 20 inches in height, are now the chief favourites, and the taller ones, though useful enough in their way, are falling into disfavour. Next after stature, we should be inclined to place the colour of the foliage, for the leaves of Cannas, even apart from the flowers, are very effective. This would give us two secondary groups—purple-leaved forms (B) and green-leaved forms (A).

Coming now to the flowers, we have the distinction that some, such as *C. Ehemanni*, are pendulous, whilst others are erect. But the true Canna of the florists, as distinct from the pure-bred species, have erect flowers, or flowers which, as *Gladiolus* lovers say, look one in the face, as a bold-faced florist's flower should do; and it is desirable that the flowers should open on all sides of the spike instead of on one only, as in the older forms. But it is to the distribution of the colour that the florist will principally look, and from this point of view he will recognise 1. Selfs, such as (fig. 68, d) *Jacquemet-Bonnefond* or *Jules Chrétien*; 2. Bicolor forms, where one petal, the lip, is of a different colour from the rest, as in *Antoine Chantin*, where the segments are rosy-salmon coloured, while the lip is yellow, spotted and blotched with red; 3. Spotted varieties, as *L. E. Bailey* (fig. 67, A), *Progression*, and *Louise Chrétien*; 4. Blotched forms, as *Madame de l'Aigle* (fig. 68, c), the blotch being sometimes at or near the base, as in *H. L. de Vilmorin*, or near the top; 5. Margined forms, such as *Madame Crozy* (fig. 67, B). The ground colour may be yellow, which may be taken as typical, or of various shades of crimson-red or reddish-brown, and the spotting varies within the same lines. Hitherto we have not seen a white Canna, but that is by no means an improbable gain in the future. A blue Canna we do not expect to see, though *Strelitzias*, which are not very far off, have much blue in their composition.

After the colour may be considered the size of the flower and the breadth of its component segments, (a) narrow as in *François Corbin*, (b) broad as in *Prof. Chaugeraud*, and then—and then—we shall have distinctions without a difference, and Cannas which, after the pattern of many *Roses* and *Chrysanthemums*, must come under the head of "too much alike." For temporary

purposes, or until a better and more complete scheme can be evolved, we offer the following scheme of arrangement:—

I. Dwarf varieties (including A B).

II. Tall varieties (including A B).

A. Foliage green (including 1—4).

B. Foliage purple (1—4).

1. Self-coloured varieties, arranged according to colour and form (including a b).

2. Bicolor forms, where the lip is of a different colour from the other segments, as in *Antoine Chantin* (a b).

3. Spotted varieties, arranged according to the ground colour and that of the spots (a b).

4. Blotched varieties, according to colour (a b).

5. Margined varieties, according to colour.

a. Inner flower-segments narrow.

b. Inner flower-segments broad.

We may add that we are indebted to Messrs. PAUL & SON of Cheshunt, and to Messrs. CANNELL & SON of Swanley, both of whom make a specialty of these flowers, for the opportunity of seeing the plants in growth, and for the means of comparing a large number of varieties, and thus of giving us the opportunity of proposing the above classification of the garden forms. It is, we trust, simple enough to enable anyone to group his plants, or frame his catalogues in accordance with it, and it is open to improvement and expansion as circumstances may necessitate. Certainly it is open to exceptions such as upset all such schemes, but that is inevitable.

THE KEW BULLETIN.—The September number is occupied with a catalogue of the flora of the island of St. Vincent, West Indies. A general account of the physical geography and climate of the island is prefixed. The total number of species of flowering plants collected in St. Vincent and the adjoining islets by Mr. HERBERT SMITH and his assistant is about 1150. Comparatively few are endemic, or confined to the islands, but are diffused through the W. India islands. The predominating natural orders are Leguminosæ, which have no fewer than 141 species; Gramineæ come next with 58, Rubiaceæ 52, Compositæ 45, Orchidæ 43; of Ferns and Lycopods there are 163 species belonging to 35 genera, so that the Fern flora is rich and varied, but there are only four endemic species. Altogether the vegetation of St. Vincent is varied and luxuriant, bespeaking a fertile soil and a favourable climate. Mr. H. POWELL is the curator of the revived Botanic Garden.

THE ROYAL HORTICULTURAL SOCIETY.—The next meeting of this Society will take place in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, October 10, when prizes are offered for hardy herbaceous perennials. At 3 o'clock, Mr. W. CRUMP will deliver a lecture on "Pears."

ROYAL VISIT TO THE BRUSSELS BOTANIC GARDEN.—H.M. LEOPOLD II., the King of the Belgians, paid, on Saturday, September 23, a visit to the Botanic Garden. M. LOUIS LUBBERS, the Director, conducted the royal visitor through the various departments of the garden, and into the principal houses. The King expressed several times his satisfaction at the condition of everything, which, in fact, reflects great credit upon M. LUBBERS. The large Fern-house attracted special attention; there is in Europe no more interesting nor complete collection of these plants than this one at Brussels. The interest which His Majesty takes in horticulture is well known and appreciated; this visit cannot but tend to still further increase it.

MONTBRETIA CROCOSMIFLORA, FL.-PL. — According to an article of Mr. MARTINET's, in *Le Jardin*, this plant originated from the hybridisation of *Montbretia Pottii* and *crocsmia aurea*. The



FIG. 68.—(C), CANNA MADAME DE L'AIGLE: FLOWERS YELLOW, BLOTCHED AND SPOTTED WITH SCARLET.
 (D), " JACQUEMET BONNEFOND: DEEP CRIMSON SELF, AND WITH VERY LONG PETALS.
 (SEE P. 432.)

hybrid issue was crossed and recrossed in various ways, and thus have come into being the numerous forms now found in gardens. M. M. LEMOINE observed in one of the varieties known as "Pluie d'Or" (Golden Rain), a tendency to become double. This was carefully watched, selection made, which ultimately resulted in the double-flowered form now so much admired.

BLACK ANTIGUA PINE.—In a supplement to the *Leeward Islands Gazette*, Mr. BARBER expresses his opinion that the Black Antigua variety no longer exists. Mr. HART, of Trinidad, says it is the same as the Ripley Queen, and qualifies it as the best of all. Mr. BARBER thinks either that the once celebrated Pine has deteriorated by negligent culture, or that it has stood still while other varieties have improved, or, thirdly, that a more readily-growing variety may have taken its place. In any case, Mr. BARBER is not now able to recognise in Antigua the Pine which derives its name from the island.

THE RE-UNION OF BRITAIN AND AMERICA.—Mr. ANDREW CARNEGIE sends us a pamphlet on this subject. We cannot enter into the political or commercial reasons which might be cited for or against the proposal, but looking at the matter from a scientific and literary point of view, we have not, and do not, consider an American a foreigner. We claim a joint interest in ASA GRAY and OLIVER WENDELL HOLMES, for instance, and are startled when we hear them spoken of as foreigners.

A CHARMING WINDOW-BOX.—The hot, dry summer has brought into prominence the value of foliage plants in outside window-boxes, and where flowering plants were employed it has been found necessary to frequently change them, at much cost of money and labour. Foliage plants, on the other hand, when selected with care, properly planted, and attended to, have been found to answer very well. A noteworthy illustration of this is found in a box in the window of Mr. J. WILLS' house at Onslow Crescent, South Kensington, which it would be difficult to excel in all respects. The box is nearly 12 feet long, 18 inches wide, and nearly as deep; and it was planted the second week in May with *Dracæna Goldiana*, and various other rich-coloured varieties of *Dracænas*, some well-coloured *Crotons*, such as *Weismannii*, *Queen Victoria*, *D'Israeli*, &c.; *Nidularia fulgens*, richly coloured and enduring; *Arundinaria falcata*, *Pandanus Veitchii*, *Kentia Belmoreana*, *Phoenix reclinata*, and other Palms; *Asparagus plumosus*, *Aspidistra lurida variegata*, &c. The arrangement is perfect, and while the box is well filled there is an absence of crowding. From the time the box was planted there has been no need for change; and four months afterwards there is not a plant but appears to have improved. Falling down over the front of the box and covering it can be seen *Panicum variegatum* and *Tradescantia zebrina*. The walls of the house are draped with creepers, and this adds to the effectiveness of the box, which faces due east. Twice a day the contents of the box—morning and evening—were syringed, and water afforded the soil as was found necessary.

HYDRANGEAS.—Recently, as we learn from *Garden and Forest*, the Massachusetts Horticultural Society gave its gold medal to the Honourable JOSEPH S. FAX, of Wood's Holl, for the superior cultivation of specimen plants of *Hydrangea hortensis*. Five or six of the plants were exhibited in the Society's hall in Boston. The plants were faultless, the largest being about 10 feet through and 7 feet high, and bearing some 300 well-developed heads of flowers; the others were only slightly smaller, and all were mounds of large, healthy and well-coloured foliage almost hidden by the flower-heads.

ROOT FUNGI.—We are so accustomed to think of fungi as noxious parasites, that the recently-published statements that, so far from being always noxious they are sometimes beneficial, has been received with some amount of scepticism. The matter has been put to the test by M. E. FRANCK, an abstract of whose paper we find in a recent number

of the *Annales Agronomiques*. Mr. FRANK took soil from a forest, sterilised one portion of it so as to obviate the growth of fungi, and allowed the other portion to remain as it was. Seeds of Pines were sown in both portions, with the result that in the second, and third year especially, the plants growing in the non-sterilised soil were found much more robust than those grown in the sterilised soil. No fungus was found in the latter, but abundance in the former.

THE ACTION OF THE HUMIDITY OF THE SOIL.—New light has been thrown on the subject by M. A. OGER, who has experimented with *Lapsana communis*, *Sonchus asper*, *Mercurialis annua*, *Chenopodium album*, *Balsamina hortensis*, &c. He states (see *Comptes Rendus*, cxv., p. 525) that if plants of the same species are grown, some in a very dry, others in a very moist, soil, other conditions being equal, that those which are growing in moist soil will assume all the characteristics of plants which grow naturally in moist situations. Thus, they become of a large branching habit, their upper leaves become very long, the inflorescence lax, whilst in structure the vascular bundles increase in number.

THE BUD MOTH (TMETOCERA OCELLANA).—Mr. MARK VERNON, Slingerland, gives, in the *Bulletin* of the Cornell University Agricultural Experiment Station, a description of this insect, which attacks Apple trees. The caterpillars eat into the bud in spring and thus check the new growth, and tie the central leaves and flowers together by silken threads, the leaves becoming brown as if burnt by fire. It is not practicable to check the pest in the adult or in the egg stage, but it can be checked in July when the larvæ are feeding on the leaves, or in early spring by spraying the buds with Paris Green, 1 lb. to 300 gallons of water.

BORON, LITHIUM, AND COPPER IN PLANTS.—These three substances, between which no apparent relation has yet been recognised by chemists, have recently been discovered to be associated together in the stems of Tomato plants, of Chick Peas (*Cicer arietinum*), and of Iris germanica. The tissues of plants are made up of a very heterogeneous collection of substances, but hitherto the presence of these three has not yet been recognised. PASSERINI, whose researches upon the composition of plants are frequently reported in the *Staz. Sper. Agrar.*, has recently been bringing that delicate instrument, the spectroscope, to bear upon his investigations, and by means of it the presence of copper, lithium, and boron was determined (*vide St. Sp. Ag.*, xxi., pp. 20, 471, and 565).

COSTA RICA.—The great number of catalogues we receive prevents our doing more in an ordinary way than acknowledge their receipt, but exceptional cases occur in which we may, without breach of impartiality, call attention to particular lists. One such is before us—that of Mr. RICHARD PFAU, of San José, Costa Rica, which is remarkable as showing what European plants may be grown in the Central American Republic, and what native plants may be derived from that source. The catalogue is in Spanish.

GRAFTING.—Mr. J. T. WRIGHT publishes in the *Botanical Gazette* for August, an account of his researches on the mode of union of cells in herbaceous grafting. This he finds takes place in two ways, either by the compression of the cells of the scion and those of the stock, by which the two cells become welded together, or by the formation of meristem tissue (callus) on the cut surfaces of one or of both plants. The broken walls of the injured cells are pushed into line by the growing tissue, and form a brown layer which everyone recognises on examining grafts by the microscope. The paper is of special interest, as showing the causes of failure or of success, and why graft hybridisation may probably occur in some cases, whilst the arrangement of the tissues would probably prevent it in others. In his experiments, Mr. WRIGHT succeeded in obtaining union between such unlikely subjects as

Tradescantia zebrina on Potato, and *Geranium* on Potato. He does not tell us, however, how long the graft survived.

ACORN POISONING.—The attention of the Board of Agriculture has been called to the unusual abundance of the crop of acorns this season, and it is considered desirable to warn stockowners who are accustomed to turn cattle into parks, on to commons, or other places where acorns are plentiful, that there is considerable risk of injurious effects arising from the consumption of large quantities of acorns, which in the present dearth of herbage, owing to the long drought, are certain to be eaten with avidity. In the years 1868, 1870, and 1884, which were remarkable for a large yield of acorns after a long dry and hot summer, serious losses among young cattle occurred from outbreaks of what is known as the acorn disease, or acorn poisoning. Young cattle up to two years old suffered most severely. Milch cows and cattle over three years old were seldom affected. Sheep and pigs appeared to be unresponsive to the poisonous action of the seeds, and only two or three cases of the disease were reported in these animals, while entire herds of young cattle were attacked, and a large proportion of them succumbed. Acorn poisoning is quite distinct from indigestion due to eating an excessive quantity of acorns. This accidental disorder may occur in ordinary seasons when animals are first allowed access to pasture where acorns abound. But the true acorn disease is distinguished by progressive wasting, entire loss of appetite, diarrhoea, discharge of an excessive quantity of pale urine, sore places inside the mouth, discharge from the nostrils and also from the eyes, which are always sunken, giving to the animal a peculiar haggard expression. No fever is present from first to last, but, on the contrary, the temperature is commonly below the normal standard. On post-mortem examination it is frequently noticed that all traces of the acorns have disappeared. The morbid changes are such as are seen when an irritant poison has been given. Remedies of various kinds were tried in the great outbreaks of the disease, but no cure was discovered. Prevention is comparatively easy when the risk is realised. It is only necessary for absolute security to keep cattle from the pastures while acorns are falling. The danger will be materially lessened by collecting the acorns from the pastures, but this device does not prevent a considerable consumption of the nuts which fall during the night. It has also been suggested that when cattle are only allowed access to acorns during the daytime they should be supplied with a liberal allowance of food before they are turned out. It cannot be affirmed that these plans have always proved successful in practice.

ORCHIDS AT "L'HORTICULTURE INTERNATIONALE" (LINDEN).—We found here lately in bloom a remarkable *Lælia elegans* with a handsome lip, the general effect very beautiful; a curious species of *Catasetum*, the sepals forming a semi-circle of tender green surrounding the yellowish-green flower, the interior of the flower transparent yellow; *Cattleya maxima peruviana*; *C. Eldorado*, a fine flower with very broad petals of the shade of *C. Schroderæ*, that is a tender and rare tone of rose; *C. Alexandræ* well-bloomed—when this Orchid is well cultivated it will be acknowledged to be a valuable acquisition; some fine *C. Warocqueana*; *Cypripedium Hookeri* × *Veitchii striatum*; many fine varieties of the charming *Cattleya Alexandræ Salmonei*; *Anthurium Van Wambekianum* showed splendid blooms of beautifully pure white. *Ch. D. B.*

WEMBLEY PARK AND TOWER.—On the 28th ult. a large number of gentlemen, including representatives of the daily and weekly press, visited the new park on the invitation of Mr. H. E. MILNER. The park and grounds comprise some 160 acres, with a considerable margin for building purposes; it is well wooded, and there are many trees of mature growth. All the newly-planted trees and shrubs have done remarkably well; indeed, the admirable appearance of greenness on every hand was

remarkable. The main road is carried round the grounds to the tower, and the intervening spaces have been set apart for sports and other purposes, including a cricket-ground, which promises to be a very fine and picturesque one. In addition, there is a spacious lake of 8 acres, fed by the river Brent, and the beauty of the scene has been enhanced by the erection of pretty bridges, and the introduction of a waterfall. The fullest advantage has been taken of the natural beauty of the landscape, and much praise is due to Mr. MILNER for his treatment of it. There is a wood on the north side of the park, which it is intended to illuminate by night; and a building that was formerly the residence of the owner of the estate will be converted into a club-house, on the lines of the Welcome Club at Earl's Court. The Tower occupies the most elevated portion of the grounds, and its starting-point will be 165 feet above the level of the sea. The supports are already in position, and if all goes well it will be completed in eighteen months, and the top will reach 1300 feet above the sea-level. To lend additional interest to the proceedings, on the 28th ult. a cricket match took place between two elevens selected from Earl's Court and Wembley and the Metropolitan Railway Clubs, in which the former proved victorious. In the evening a dinner took place in the pavilion, Mr. H. E. MILNER presiding. It may be mentioned that the Wembley Park Station, which lies midway between Neasden and Harrow, is close to the entrance to the park.

ISLE OF THANET CHRYSANTHEMUM SOCIETY, MARGATE.—Mr. EDWIN LEVETT, Hon. Secretary, informs us that the seventh annual show will take place on November 8 and 9, at the Hall-by-the-Sea, Margate.

A PROLIFIC PEAR TREE.—As an instance of the fertility of Pear trees this season, we quote the following from the *Standard* of September 20:—"I have lying before me specimens from a Pear tree planted by a well-known resident of Southampton, Mr. HENRY, Port Aslatt. This tree has bloomed and fruited four times this season, and to-night I have received Pears of the last three growths, luscious and well-developed fruit, and gathered in first-rate condition." [1] John Smith, Lansdowne House, South Lambeth, September 18.

TIMBER OF THE AMAZON DISTRICT.—We have before us a catalogue of the woods exhibited by the State of Amazon in the Chicago Exhibition. It is not wonderful that there should be 441 entries, even if we suppose that the same thing is sometimes exhibited under two or more names; but it is by no means creditable that out of the 400 an extremely small proportion have names by which they can be recognised.

F. L. AMES.—As mentioned in our last issue, this gentleman (a well-known and very highly respected citizen of Boston) died on September 13. It appears that he was on board a river steamer on his way to New York on business, and was found dead in his state cabin on the morning of the 13th ult. Mr. AMES was largely interested in railways and other financial enterprises, and had accumulated a large fortune. He was an ardent Horticulturist and a Vice-President of the Massachusetts Horticultural Society. His estate at North Easton was one of the most beautiful in New England, and is remarkable for a fine collection of Orchids, a circumstance which brought him into communication with Orchid growers in this country. Pictures and works of art were also among his hobbies, and large sums were dispensed for charitable purposes. Mr. AMES was in his fifty-ninth year.

RAHAT LOUKOUM.—A curious manufacture is referred to in the British Consul's Report to the Foreign Office, on the trade and commerce of the Cyclades for the year 1892—namely, that of the confection known as "Rahat Loukoum," or Turkish delight, which, or an imitation of it, has become so popular of late years in this country. This manufacture at Lyra, which was formerly a very flourishing trade, has recently decreased considerably, owing, it is said, to the high prices charged, and the dearth of the materials employed. About twelve

factories were actually at work during the year, employing an aggregate of 120 men. The kind which is flavoured with essences of Pistachio, chocolate, Citron, Banana, and the like, is by far superior to that made at Constantinople or elsewhere in the Levant, and curiously enough, its excellence is attributed to the water of the island. About 500,000 are annually produced, representing the estimated value of £40,000. The greater portion of this produce is consumed throughout Greece, and very little is exported. About 300,000 cokes of comfits are also annually manufactured at the same establishments, valued at £36,000.

FLOWERS FROM NEWRY.—From Mr. SMITH, of the Daisy Hill Nurseries, we have received a representative collection of flowers of special brilliancy in point of colour, and some of unusual interest. We take them in the order in which they come to hand:—

Clematis graveolens.—A species with twice or thrice ternated leaves, the lobes stalked, broad; the flowers solitary, on long slender stalks, 4 cm. long, recurved at the end. Flowers nodding, about 14 cm. diameter, pale yellow. The seeds were originally collected in 1844 by Captain (afterwards General) MUNRO in Chinese Tartary, at an elevation of 12,000 feet. The seeds were received at Chiswick in May, 1845, and the plants were in bloom in July, 1846, when they were figured and described by LINDLEY in the *Journal of the Horticultural Society*, i., p. 307.

Lobelia Kernerii.—Stem angular, slightly hairy. Leaves with very prominent glands at the margin. Flowers rich crimson, $1\frac{1}{2}$ inch (4 cent.). Calyx lobes linear; petals narrow. Probably a form of *L. fulgens*.

L. cardinalis.—Stem angular, nearly glabrous. Leaves lanceolate, with glands at the margin; flowers scarlet, $1\frac{1}{2}$ inch (33 mill.) long. Calyx lobes linear; petals all narrow.

L. Milleri.—Stem angular, glabrous. Leaves lanceolate, remotely denticulate, minutely glandular; flowers rich violet-purple, $1\frac{1}{2}$ inch (33 mill.). Pedicels very short. Calyx lobes lanceolate, lower lobes of the corolla broader than the upper two, ovate, lanceolate. Probably a form of *L. fulgens*.

L. ignea, *Firefly*.—Stems reddish-purple, cylindrical, glabrous. Leaves lanceolate, acuminate-glandular, toothed. Flowers nearly 2 inches (5 cent.) long. Calyx lobes linear lanceolate. Corolla deep crimson-scarlet, two upper petals narrow, three lower ones obovate oblanceolate. Probably a form of *L. fulgens*.

Lobelia Magenta Queen.—Stem purple, angular furrowed; leaves purple lanceolate acuminate, slightly glandular at the margins. Flowers rather more than 1 inch (3 cent.). Calyx lobes lanceolate acuminate; corolla crimson, three lower lobes oblong acute.

Lobelia Tupa.—Robust habit, surface downy; stem angular; leaves large, subcoriaceous, obovate oblong acute, margins glandular, markedly crenescent at the base, with the stem upper leaves 4 inches long (10 cent.) by $1\frac{1}{2}$ inch (40 mill.), pedicels 1 inch (25 mill.), exceeding the lanceolate bracts. Flower $1\frac{3}{4}$ inch (45 mill.); ovary pear-shaped, calyx lobes short, deltoid acute, hirsute purple; corolla deep crimson, downy; petals linear, equal, cohering at the tips, and all deflexed. A native of Chile, very distinct in appearance, and very handsome.

Liatris callilepis.—A very beautiful hardy perennial. Stem angular, thinly beset with white hairs. Leaves sessile, glabrous, linear-lanceolate, midrib prominent on both surfaces. Head of flowers solitary, terminal, about 4 cent. across ($1\frac{1}{2}$ inch). Bracts numerous, leafy, linear-oblong, loosely arranged, and gradually passing into involucreal scales. Flowers brilliant lilac. Ovary hairy, surmounted by a plumose pappus. Corolla-tube slender, dividing above into five equal linear segments. Anthers brown, pointed at the base, and with a whitish process at the tip. Style protruding beyond the corolla-tube, dividing into two long, curved, channelled, stigmatic lobes. We do not find the name in the American Floras, nor in NICHOLSON'S *Dictionary*.

Parnassia caroliniana, differing from our European form in the greater length of the flower-

scapes, the many-veined petals, and the 2 to 3 branched staminodes. Though named *caroliniana*, it has a wide distribution from New Brunswick to Florida.

Sericocarpus solidagineus?—A shrubby-looking, Aster-like plant, with numerous erect, stiff angular branches, covered with coarse appressed hairs. Leaves linear-lanceolate, remotely toothed, 6 inches long (15 cent.), $\frac{1}{2}$ inch (12–13 mill.) wide, many-nerved. Flowers numerous, in much-branched, erect flower-heads. Each flower-head about $\frac{1}{2}$ inch (12 mill.) broad, surrounded by a many-leaved involucre of linear leafy bracts. Ray-florets narrow, white, exceeding the bracts. Pappus slightly plumose. The plant does not agree in generic characters with *Sericocarpus*.

Cytisus elongatus.—Shrubby, with very long slender branches. Leaves trifoliate, leaflets small, oblong, mucronate, silky on the under surface. Racemes terminal, very long, many-flowered. Flowers yellow.

PLANT PORTRAITS.

AZALEA RUSTICA FL.-PL., *Revue de l'Horticulture Belge*, October. Under this name are described some forms of *A. mollis* with double flowers. The introduction of the Latin quasi-specific name *rustica* is a misfortune.

CARPINUS CARPINUS (sic), *Garden and Forest*, August 30, better known as *C. japonica*.

DENDROBIUM AINSWORTHII ×, *Neubert's Deutsches Garten-Magazin*, n. 10.

DRACENA LINEATA, *Revue de l'Horticulture Belge*, October.

FRANCISCEA CALYCINA, *Revue de l'Horticulture Belge*, October 1.

KALANCHOE GRANDIFLORA.—An Abyssinian Crassulad, introduced by Schweinfurth. It has shortly stalked orbicular crenate leaves, and erect heads of white or flesh-coloured flowers, each with a long slender cylindric tube, and a four-parted limb, of which the segments are lanceolate.

LELIA ANCEPS SANDERIANA, *Garden*, September 23.

LELIA ANCEPS SCHROEDERIANA, *Garden*, September 23.

NARCISSUS GOLDEN BELL, *Garden*, August 26.

OSTREA JAPONICA, *Garden and Forest*, September 13.

SOLIDAGO PETIOLARIS, *Meehan's Monthly*, September.

NURSERY NOTES.

THE PENRITH NURSERIES.

To passengers on their way to Scotland or to the English lakes, the ruins of Penrith Castle, close to the railway station, are conspicuous, and the fact that the Castle hill and moat have been made into a well-kept nursery, will have been noticed by many. Messrs. Herd Brothers have also a large piece of ground on the south side of the town, and recently they have acquired a portion of the Beacon Hill, which forms such a conspicuous feature on the west side of the old town. The cold climate of this locality is not inviting for the expenditure of high cultivation, as found in nursery work; but plants which succeed here are not only suitable for the locality, but will be eminently adapted for planting in more favoured localities.

The Penrith sandstone is quite unique, being wholly composed of quartz grains without a trace of mica or other mineral, and gives rise by its disintegration to a free-working, gritty, and poor soil, which, however, is improved in places by presence of glacial drift. The proximity of the Cumberland mountains insures a heavy rainfall, which is carried off rapidly by the river Eden. Messrs. Herd's nurseries are essentially devoted to hardy plants, about twenty greenhouses sufficing for the demand for tender plants.

Forest and fruit trees receive a large amount of attention. On the Beacon Hill, at an elevation of 900 feet, there is a fine breadth of *Pseudotsuga Douglasii*; and a nice lot of Scotch Fir, Larch, Spruce, Sycamore, &c., are also grown. Gooseberries seem

well suited here; seldom have we seen such sturdy and healthy plants, particularly Whinham's Industry, Crown Bob, and Lancashire Lad. Of these, large quantities are distributed over the British Isles, America, and the Continent. Gooseberries are not easily propagated in North America; the cuttings do not strike—hence the perennial demand. Only the hardiest varieties of Apples, Pears, and Plums are grown. Standard Roses do not succeed well here, but we noticed some quarters of particularly healthy dwarf Roses. The ornamental trees are chiefly grown in the old Castle gardens, which form a conspicuous feature from the railway station.

Amongst florists' flowers, Pansies and Carnations are a specialty. Among the latter are several new kinds, the most conspicuous being Mrs. Hamlet Riley, a pale flesh flower, of extra good form; Duchess of Fife, pure deep pink—does not split; Mrs. Muir, Gardenia-like in shape and colour; Maggie Roy, a pale pink-fringed flower; Stadthall Bail, a choice yellow ground; Keir Prince, the new scarlet; and many other new and rare kinds. Messrs. Herd are also working a nice collection of alpine and herbaceous plants, this class being popular in the North for cutting and exhibition purposes. *F. V. D.*

BEGONIAS AT BEXLEY HEATH.

The season that is now closing has, on the whole, been one quite unfavourable to the Begonia in beds outside. A moisture-loving plant, delighting in an atmosphere with a certain amount of humidity, the incessant watering, which has been a necessity from the time when the tubers were planted out, can never supply the conditions which are furnished by a warm moist summer weather. The principal reason is that, however much the watering-pot may be used, it does not create the humidity in the atmosphere that follows general rain, although it may succeed in keeping the top of the soil moist. Until this season, it is several years since the Begonia has been so handicapped, and during the last four or five it has shown off with advantage to itself when compared with the Pelargonium. This year, however, the Pelargonium has found conditions peculiarly adapted to its requirements, and in the many parks and gardens we have visited, it has thoroughly beaten the Begonia in the display of blooms all through the season, and fresh and convincing evidence has been given that the Begonia is the better plant for our usual summers, and especially a wet one; but on the other hand, it is very ill adapted for such dry and hot weather as we have experienced since spring.

Good cultivation greatly minimises the injury they receive from such adverse conditions, however; and in looking over the beds of seedlings belonging to Mr. Thos. S. Ware, at Crook Lodge Nursery, Bexley Heath, it may be seen that untiring attention and constant use of the water-pot has been given to them. The plants were very well covered with bloom when we saw them some few days since, the only noticeable results of the season being the very little growth the plants have made, and the gaps in the beds owing to many of the little tubers having been dried or scorched up before they could establish themselves. It is satisfactory to find that in many cases where the plant has made but little growth, the tuber has swelled to a considerable size, and out of proportion to the top.

The strain here is rapidly becoming one of the best, splendid blooms of single and double varieties being noticeable among the seedlings in the beds. The flowers are large, and have much substance, whilst the colours are very clear and distinct. There are many thousands to be seen in the beds, over 200,000 were put out in the spring, and the singles are kept true to colour. It is remarkable how true these come from seed, there are very few rogues to be seen even in the large beds. In some beds in front of Mr. Pope's house, we noticed a variety called Maria Lentz, a capital white sort for forming an edging to other kinds; exceedingly floriferous, its drooping character makes it very useful for such a purpose. Beauty of Belgrove in another bed looked first-rate, but it requires staking, and this

is a disadvantage. The Marquis of Stafford, with much smaller blooms of a good crimson colour, requires but little staking, and is a pretty and effective sort.

Looking through the houses we found many of the best varieties still in bloom, but as they are now allowed to carry their seeds, the plants and flowers were not up to their true character. Queen Victoria, a double Camellia-like bloom of pink, looked very pretty; and Champion, another of last year's seedlings, is very fine. This is a single golden-bronze variety, very large, and of good habit, with thick strong stems. Viola, another single—in colour scarlet, with shade of violet; and Alba marginata fimbriata, are both last year's productions. The latter is a single white flower, with rose margins, somewhat fimbriated, has strong stems, and is very pretty. Duke of Teck, Duchess of Teck, Princess May, Henshaw Russell, Triomphe de Nancy, Leviathan, Sunset, Pride of Bexley, &c., were all in bloom, but betrayed evident signs that the Begonia season for 1893 is practically over.

BEGONIAS AT FOREST HILL.

On the occasion of a recent visit to the Stanstead Park Nursery of Messrs. Laing & Sons, it occasioned us some surprise to find a remarkably fine bloom on the single and double-flowered varieties in the open air. There must be an area of something more than 2½ acres under the Begonia crop, four-fifths of which are double-flowered varieties, and mostly at present under number. Selection was busily going forward amongst the latter; and plants of markedly good character, or which exhibit novel colouring and erect flower-stalks, good single centres, like a Rose or Camellia, marbled foliage, and other desirable features, were being dug up, with as much earth about the roots to enable the workman to properly pot them in 32-sized pots. These plants are placed in some of the many houses, and encouraged to bloom until the dark days of November render further flowering impossible, when they are put to rest for the winter. From these carefully-selected plants, whose progenitors are duly noted by name in the pedigree-book of the nursery, are selected those charming plants that delight visitors at horticultural shows all over the country, and furnish a large portion of the display of our greenhouses, and in lesser degree the flower-beds, once sacred to the Pelargonium.

Some few shades of colour were noted in the doubles; and good white flowers were seen. Of new colours mention should be made of a variety of shades of salmon-pink, shaded with orange; habit very erect. Several have a ground colour of some yellow tint, and a margin of rose-pink; some most desirable tints of creamy-whites appeared in the doubles; and a buff flower, tinted with scarlet, would be sure to find admirers. Apricot-yellow is a colour that seems to be much valued, and it is one that has been deliberately worked for in the various crosses. In the more common colours, Henshaw Russell struck us as being an extra-good double-flowered scarlet, a plant of which has been in bloom since last April, and even now is enjoying an old maid's summer of bloom. Duchess of Teck is a desirable flower, of a light yellow colour. A novelty was noticed in a decidedly-fringed white variety, that is likely to be put to good use in crossing.

Besides the usual division of varieties into single and double-flowered, there is still another—that of pendulous ones, a class that furnishes admirable plants for vases and baskets. Amongst the houses still full of plants in full bloom, is one containing plants that were pricked out in May last, and are therefore of the same age as those in the beds. These show fine quality generally, and are of an average height of 1½ foot.

The season was very adverse to the well-being of the Begonias in the beds, for with the best efforts and the application of mulching it was impossible to maintain the soil in as moist a condition as would favour growth; hence the plants remained small until September came. Since the rains which came in that month they have, we were told, doubled in size, and greatly increased in floriferousness. If

there be a difference between singles and doubles in the power to withstand drought, it is the former that have it.

Provided the frosts are not of sufficient severity to destroy the blooms, the display outside may last for several weeks longer.

A peep into the orchid-houses sufficed to show remarkable improvement in the look of the plants in the last twelvemonths; good healthy growth characterising all of them.

In bloom were several *Cypripediums*, *Lælia Dayana*, *Vanda tricolor*, *Phalænopsis amabilis*, *Dendrobium Schroderianum*, and one *Cattleya labiata Warocqueana*.

ARAUJA SERICIFERA.

I SEND to you by to-day's post a specimen of the magnificent fruit of *Physianthus albens* [now called *Arauja sericifera*], grown out-of-doors in my garden here. Although I have had six or more plants out-of-doors for several years, this is the first year that my

the work of a Herefordshire man, we find excellent lists of cider Apples and perry Pears suitable for planting and re-grafting standard orchard trees. That portion of the manual which is devoted to fruit culture for small holdings, reiterates much of what has been propounded by other writers on the same subject; but we think, with generally fuller instructions with regard to draining, distance to plant the various trees, bushes, and pyramids. Except where trees of an ornamental character are desired, we would rather see pyramids omitted, especially in cottage gardens, owing in part to their being less fruitful than bushes, and less long-lived than these or standards, and requiring a good deal of time to be spent on them when it can least be afforded in pinching and stopping shoots. The Damson, the poor man's friend, is recommended to be planted in all cottage gardens, and on every fruit farm; the prices obtained being very remunerative, and the fruit can be kept much longer both on the trees and after gathering it, than is the case with soft Plums. The fruit is often said to realise from 10s., 15s., and 20s. per pot (5 pecks). Some



FIG. 69.—FRUITS OF ARAUJA (PHYSIANTHUS) SERICIFERA. Reduced one-half.

plants have borne any fruit. They have flowered regularly year after year, and now, while each plant is covered with hundreds of flowers at the same time, there is a show of fruit of the size of the specimens sent herewith. The specimen I have sent is the only branch that has large double fruit on it. It is very remarkable. The plants I have are on poles about 6 or 7 feet high. The fruits are mostly on the lower parts of the creeper; but fruit of various sizes, some apparently only beginning to form, but the whole plants are covered with flowers, which close upon and hold fast any insect that touches them. *John Rashleigh, Menabilly, Cornwall.* [We give an illustration (fig. 69) we published some years since. The fruits are shown reduced one-half. Ed.]

BOOK NOTICE.

THE ORCHARDS: FRUIT CULTURE FOR SMALL HOLDINGS. By J. Cranston. (Messrs. Jakeman & Carver, Hereford.)

Another work by an expert, seemingly called for by the present increase in the cultivation of hardy fruits. The methods advocated are, as might be imagined, just those we should expect to find, coming, as they do, from so well experienced a cultivator as Mr. John Cranston, and they do not differ in essentials from those advocated by many other writers of note on the same subject. As befits

good recipes for ridding fruit trees and bushes from insects are given, including those in which arsenic in some form is largely used; and together with these are given cautions with regard to the use of these substances.

Select lists of varieties of Apples, Pears, Plums, Damsons, Cherries, Currants, Gooseberries, Strawberries, and Nuts, complete this very useful handbook.

HAVERING PARK, ROMFORD.

ROMFORD contains some good private gardens, one of the best amongst which is the beautifully-situated residence of Mrs. McIntosh at Havering Park. The place, too, possesses historical interest, for as records tell us in the time of Edward the Confessor, 1042 to 1066, the Liberty of Havering-atte-Bower came prominently into notice. This monarch spent a great part of his time at Havering, which was his favourite resort, where he either built a new palace or renovated the old one of his predecessor.

Here he often lived, and here it is said he died. This palace, which was for ages closely associated with our ancient royalty, was delightfully situated in an extensively and charmingly-wooded undulating park. The residence commanded a view, more or less, of five counties, Middlesex, Surrey, Kent, Herts, and Essex, and also of the River Thames. This royal park, doubtless, from some specially favourite retreat of delightful shade which it contained, was distinguished

by the name of Bower, reminding us of Rosamond's famous bower at Woodstock, and hence from time immemorial the village with its ancient Elm which was growing four centuries ago, and is still standing on the village green (?) that was in days of yore a part of the royal gardens, has been known as Havering-atte-Bower.

The extent of Havering Park of to-day is about 1500 acres, and Pines, Oaks, Elms, and Hollies are the trees which do best here, particularly Pines and Hollies; an avenue of *Sequoia gigantea* about half a mile in length, is an especial feature of the place.

There is a nice range of glass, and here Peaches were noted as doing particularly well, some 120

HOME CORRESPONDENCE.

LILIES.—We send you a box of cut Lily blooms, taken mostly from plants growing out-of-doors, *L. speciosum* Kratzeri, *L. s. Melpomene*, *L. s. macranthum*, and *L. tigrinum* Fortunei. Owing to the persistent drought, Lilies out-of-doors in the open have this year had a bad time of it. The flower-spikes are short, and the blooms are poor in substance; but as regards pot-culture, where moisture has been freely given, it is quite different, and the spikes and blooms are good. *Lilium nilghirricum* has flowered very freely with us, and very early, but requires to be both started and finished under glass. Our imported bulbs reached us late in the spring in

translucent like deep sea-water; and secondly, the numerous large processes of a rich orange-yellow, which fringe these green axes, and occupy the centre of flower. It is a beautiful flower for ladies' wear, specially for those of a dark complexion; on in a decorative point of view, for a room, a couple of blooms well backed by foliage of dark green, such as that of the cut-leaved scented *Geraniums*, are very effective. We feel convinced that this Lily will become a great favourite with the fair sex. We have also enclosed a small spike of *Gladiolus Lemoinei* Sophia Buchner grown from "spawn" planted last November. *Gladioli*, too, owing to the drought, have done badly, and the spike would have been twice the size in ordinary weather. It is a new and good form, and a good doer. *Wallace & Co.*

STRAWBERRIES IN OCTOBER.—There appear to be no limits to the peculiarities of this extraordinary season, and it may interest your readers to hear that on October 1, I picked a handful of perfectly ripe Strawberries in my father's garden at Sonning, near Reading, Berkshire. I may add that the plants are not protected by glass, and are not sheltered by the walls of the garden. We only require a few days warm sun to enable us to have Strawberries on the table in the second week in October. Is it likely that this second crop will have any effect upon next year's fruit? *Henry T. C. Knox*. [Yes, unfavourable. *Ed.*]

RETAINING WALLS FOR PEACHES AND NECTARINES.—Good Peaches and Nectarines can be grown in the open, I am sure, without the expensive retaining walls of brick, as recommended by Mr. Turton in his calendrical remarks on p. 367. If the climate is not suitable for successful culture, the use of brick walls to confine the roots will not be of any service. If the border is 4 feet or 6 feet wide, the roots can easily be kept within this space by digging out a trench every second or third year at the front of the border as deep as the roots go. These periodical root-prunings are of great advantage in Peach and Nectarine growing out-of-doors, inducing fibrous roots to form much better than retaining walls would do. If the border is wider than 6 feet, and vegetables or flowers are grown on it, the necessary trenching and digging will answer the purpose of checking the extension of the Peach tree roots. *S.*

DO LARGE ONIONS KEEP WELL?—I for one contend that large Onions keep well when properly harvested and stored in a suitable place. Last season our bulbs of *Ailsa Craig* Onion, many of which weighed 1½ lb., kept in a plump state longer than any other variety, not excepting *Brown Globe*, which is looked upon as one of the best keepers. They were suspended, singly, from the rafters of a cool shed where frost does not penetrate. *E. M.*

THE WEATHER IN NORTH DEVON.—The favoured climate of Devon and Cornwall is a matter frequently mentioned in your columns, but it is not so highly favoured at all seasons as is represented; for instance, on the night of the 21st ult. we had thunder with tremendous hail-storms, which cut up vegetation sadly, and spoiled a great number of plants in pots. On some farms the green crops have very severely suffered; but it appears that the area of the storm did not extend very far. *North Devon.*

CODDLING IN GARDENING.—Is it a fact that any of the Onion tribe need to be stored in frost-proof places? My experience leads me to contend that such care of them is totally needless. My father, a most observant man, and first-class gardener for a quarter of a century in a north country garden, had to store his Onions and Shallots in a room that had a slate roof, walls 1 foot thick, and single board doors, no ceiling, and hit-and-miss shutters. In this room the bulbs froze as hard as a stone in some hard winters under a 6-inch covering of hay, but they were not spoiled by that, and he had Onions as late in the season as anyone. The room had a board floor, and stood above the Potato cellar, so that it was perfectly dry. We coddle our things too much nowadays. For instance, in those days shrubby *Calceolarias* were a good deal used in bedding, much more so than now; and the cuttings of these, in some cases forgotten varieties, were put in October into pots of sandy soil, 20 to 24, in a 48-pot, the soil being surfaced with white sand. These pots were bedded in fine coal-ashes in hand-glasses, and stood on the north side of a wall, where they remained all the winter without more protection in hard weather than a mat or a little litter thrown over them. By the spring they were rooted, and were potted off, and grown



FIG. 70.—CYPRIPEDIUM CHARLESWORTHII.

Upper sepal white, veined with rosy-purple; lower sepals greenish-white; petals and lip yellowish, tinged with brown; stamens white; leaf longitudinally spotted above, transversely beneath. (See ante, p. 403, in our last issue.)

dozens having been picked from one house alone; the principal varieties grown being Dymond, Dr. Hogg, Bellegarde, and Mr. Gladstone. Grapes are grown with remarkable success. A magnificent specimen of *Davallia Mooreana* is considered to be the finest in the country, being 13 feet through; and an *Adiantum cuneatum* is noteworthy as being 10 feet through, and many of the plants grown in the houses are fine examples of cultural skill.

Hardy fruit outdoor crops were observed as fairly abundant; and some cordon Pears were carrying good crops; the varieties being Pitmaston Duchess, Beurré Hardy, Louise Bonne of Jersey, and Clapp's Favourite.

Dahlias in the various sections are particularly well grown, as is evidenced by Mr. Ocock's recent successes at public exhibitions, and to whom a word of praise is justly due for his excellent management of a beautiful and historic place. *J. B.*

a dry, shrivelled condition; they, much to our surprise, plumped up rapidly, and began to shoot. They have now flowered freely, much better than could have been anticipated, showing that this Lily is really a very vigorous one under proper treatment, but that a cold, sunless summer does not suit it. The scent is very peculiar, being like that of honey. *L. Henryi* is a remarkable Lily; it has been grown by us in pots out-of-doors, and in the open ground. It is a grand doer. We received our bulbs from China in the middle of March last; they soon began to move, and were above-ground some six weeks later than those established at Kew. They are now in full flower, again some six weeks later than those in the open at Kew. This Lily has evidently a very hardy constitution: it can stand drought well, roots very freely, has dark green foliage, and numerous flowers. It is from these points, and from its novel colour, a grand Lily for the hand of the coming hybridiser. There are two grand points about this new form that we wish to emphasise, its very beautiful broad dark green central axis,

on for planting-out the year following. As compared with present methods of raising Calceolarias, there seems to have been a whole year's labour for nothing; but it was only in that way that good bushy profusely-blooming plants of these shrubby species and varieties could be obtained so far north. And what would most present day gardeners think of the practice of keeping *Hoya bella* in a cold vinery after flowering till say the end of January? Yet such was the case, and the plant responded to the treatment by abundance of bloom. *Delta*.

FRUITS: BOTH SIDES OF THE QUESTION.—

Until about three years ago we managed to have a garden of some kind, generally in the town, and always small, the growing of fruit being out of the question, and, of course, we had to depend entirely on the market for this. We are, and always have been, large users of fruit and vegetables, and have had, for townfolks, a very good knowledge of the different varieties, but in spite of this, we have always had an instinctive preference for the largest and best-looking samples. Coming into an old garden stocked with fruit trees, we were at first surprised that so many of the trees, Pears especially, should bear such small and poor-looking fruits, and it is only by experience and knowledge of the best methods of keeping and ripening, we have discovered that the small and insignificant-looking fruit was really the best, and far preferable to the fine samples we were accustomed to purchase. This reminds me of my old friend, Mr. Fogg, who said of his Cucumbers, "Bless you, we don't grow 'em to eat; we grow 'em for market;" and there are two very clear sides to this question. If for sale, appearance is everything; if for private use many of the poorest and shabbiest-looking varieties are better worth care and attention. It is very rarely that one variety will serve both purposes well. The fault, as regards small fruit, is increased by the method of mixing different varieties. In one hamper to-day in the market, I saw a mixture of at least four kinds, two of these being Beurré Capiaumont and Easter Beurré, the mixture being retailed at 1½d. per lb. If the Capiaumont had been separated, properly shown, and named, they would have easily fetched double the price, if not more. The bulking and mixing of varieties does more than anything to bring English fruit into disrepute. Foreign fruit comes over separated, and correctly named; users learn the names and varieties, and naturally ask for what they know, passing over better fruit of home growth because it is unnamed, unknown, and exhibited with no more care than a load of Potatoes, good, bad, and indifferent, ripe and unripe being mixed up in one general mass, which only commends itself to children with halfpennies, because it is cheap. Good Capiaumont Pears, English grown, would take the highest rank if they were only known, and sold separately under their correct names for identification by regular users. *Thos. Fletcher, Grappenhall, Cheshire*.

THE ORIGIN OF DAHLIA PARAGON.—We observed in the *Gard. Chron.* of September 23, p. 365, that a correspondent has an idea that we were the raisers of the single-flowered Dahlia Paragon, although we have never before published any statement as to the way it came into our hands. At the Dahlia Conference held at the Crystal Palace, and presided over by the late Shirley Hibberd, Mr. H. Cannell made a long statement concerning the matter, after which no one should have assumed that we raised it from seed. Its history briefly is this:—A gentleman, a customer of ours, who was about to remove from Yorkshire to Sevenoaks, called at the nursery in September, 1877, and described the splendours of a single-flowered Dahlia which he thought no one else possessed, and said that he should be pleased if we would take care of it for him. It had been a great treasure of his for fifty years, but that in consequence of his great age he did not think he should enjoy it much longer. We accepted the tubers, and we have had ever since three plants ready for him, should he call again, so as to be able to carry out our promise; but he has not called again, and not knowing his address, we can only conclude that he is deceased. *H. Cannell & Sons, Swanley*.

RATE OF GROWTH OF CONIFERS.—I recently measured a tree of *Sequoia* (*Wellingtonia*) gigantea which I saw planted in 1863, and which was then about 4 feet high. It is now 58 feet high, and the circumference of the stem at 2½ feet from the surface is 8 feet 10 inches. A *Cedrus Deodara*

growing a short distance away, which was planted at the same time, is 49 feet high, and the stem at 2 feet from the surface is 46 inches in circumference. The above are growing at Wierton House, near Maidstone, at the top of a hill, the soil a medium loam, resting on limestone. *W. H. Divers, Ketton Hall Gardens, Stamford*.

GENTIANA ACAULIS FLOWERING TWICE IN ONE YEAR.—Is it not unusual for this plant to flower twice in one year? We have at the present time, September 20, fully-expanded blossoms of this Gentian on plants growing on the rockery, and which flowered well in May. *E. M.*

STOCKS FOR ROSES.—Last February, in looking through the propagating-houses at Messrs. Keynes, Williams & Co.'s nurseries in Castle Street, Salisbury, Mr. W. H. Williams drew my attention to the difference in the growth of Roses worked on the Polyantha Rose as compared with that of the same varieties grafted at the same time on the Manetti stock. Although the growth of the extensive batch of worked pot Roses which I then had the pleasure of seeing was most satisfactory, and the point of "union" scarcely perceptible, the growth of the Roses worked on the Polyantha was decidedly more vigorous than that of those worked on the Manetti; the pots were also better filled with roots. Mr. Williams said that his firm experienced difficulty in obtaining a sufficient quantity of the Manetti for stocks, and in answer to my inquiry as to the price of the Polyantha Rose in view to its adoption as a stock, he said that large quantities of it could easily be raised from seed every year by growers to meet the demand at a small cost. This being so, we may reasonably look forward to obtaining more vigorous, and consequently longer-lived pot Roses in the near future than we have been having, as up to the present time pot Roses, under the most favourable treatment have proved to be much too short-lived. *H. W. Ward, Longford Castle, Salisbury*.

BIGNONIA CHERERE AND B. TWEEDIANA.—Amongst the many species of Bignonias grown in the Riviera Gardens, there are none to rival these two beautiful species. The former is at present rather uncommon, but where seen in its full beauty it is a sight which is rarely excelled. When once it arrives at the age of flowering, that is, in three or four years, the amount of blossom it produces is astonishing; in fact, it is rarely seen out of flower, although it blooms more profusely during the autumn and spring months. I saw last spring at Mentone a whole hedge composed of nothing but this climber, and it was quite ablaze with its large panicles of orange-scarlet flowers. It delights in growing in the full sunshine, and does as well in our heavy granite soil. Our climate is rather too cold for Allamandas, but in Bignonia Tweediana we have everything to be wished for as regards size of blossoms and colour, and the species is seen at its best when running over terrace-walls; and when out of flower, its long, bean-like seed-pods, more than 1 foot in length, have a quaint look. One thing is evident about our Riviera climbers, that they have sufficient sun to ripen their wood, and they often have suffered from lack of water. The latter remark may be applied forcibly to our own greenhouse climbers, many of which, especially the Bignoniacæ, are rarely seen to advantage. In many cases, I may venture to state, they are over-watered, and to compensate the lack of sunshine, dryness at the root would often be the means of inducing them to flower better than they do. I find that many of the climbers do not require so much water as is generally supposed; and, in fact, it really does them good to let them suffer. *Riviera*.

RETARDED GROWTH IN A PEAR-TREE.—Your correspondent, H. D. Hearn, in giving an account of his Williams' Bon Chrétien Pear-tree (p. 340, of *Gardeners' Chronicle* for September 16) not coming into bud the first year after planting, goes on to say, all he had spoken to about it had never heard of anything of the sort before. It may interest your correspondent, as well as others to know, that, in Kent, some years ago, I remember having had a large-trained Pear-tree of Marie Louise transplanted from a north wall to a south one. The work of removal took place in the month of November; the tree was about twenty years old, had ten tiers of branches 16 feet long, and it required four men to carry it. The tree was well planted and well cared for during the spring and

summer following the transplanting, but no signs of growth were visible, not even plumping of the buds the first year; and I well remember also, that many jeers were thrown out by passers-by, one saying, the idea of thinking of transplanting with any chance of success such a large fruit tree, and placing it against a south wall, too. The tree, I had syringed with water occasionally, for the purpose of keeping the bark plump, which had the desired effect. The year following the transplanting, the tree had the appearance of being dead to people passing at a little distance from it; but the second year after the planting, it had developed a large number of blossom-buds, which it was necessary to reduce in number, only leaving a tenth of them, and only a few dozen fruit was allowed to mature. The third year after transplanting, the tree had got good root-hold, and bore ten dozen of excellent fruit. The fourth year the crop was large, and quality good; and fruit taken from the tree the fourth year after planting won three 1st prizes open to all England, in the autumn of that year in the single dish class for Marie Louise variety, and an Award of Merit at Chiswick, during the Pear Conference then being held. This particular tree has produced as many as ten dishes of fruit, winning firsts, open to all England within the last few years. *Robert Smith*.

A SINGULAR NEST.—A few days ago, when the men were employed in cutting the dead wood out of a *Euonymus* tree on the wall, they found a blackbird's nest. On picking it to pieces, they discovered forty-eight wire pegs interwoven with the nest. These being of two sizes, the patient little bird had bent the slightest of the "hairpins," as we familiarly call them here, into waving lines, and then dexterously wattled them in all round. They were counted in presence of the writer and two other ladies. The nest ought to have been preserved intact, and exhibited as a proof of reason and reflection on the part of the blackbirds, who have built in the same place for several years. The gardener had frequently missed his pegs from Verbenas, Carnations, and other flowers, but certainly he was not prepared to look for them, still less to find them, in a blackbird's nest! *H. M. E., Newbold, Leamington, September 20*.

COLLETIA BICTONENSIS.—This curious and hardy (in Devon) shrub is flowering extremely well this year, and I noticed to-day it was crowded with bees, extracting the pollen from its curious little creamy-white flowers. Cuttings root readily of half-ripened wood, placed in well-drained pots, and stood in a cold greenhouse. *J. M., Bicton*.

A FINE VARIETY OF TOMATO.—Referring to your notice of the above in last week's *Gardeners' Chronicle*, p. 401, I can fully bear out what you say of the Tomato sent for your inspection by Messrs. Cobban & Son, Rotherham. A few weeks ago, I had the pleasure of inspecting two span-roofed houses, each 150 feet long, that were planted with this and all the leading varieties in commerce, and its superiority for cropping and massiveness of individual fruits over the other varieties was abundantly apparent. I have seen very fine crops of Tomatos in different establishments throughout the country, including the Royal Horticultural Society's Gardens, Chiswick, when the Vegetable Conference was held there, but have not met with a variety to equal the one under notice for productiveness, handsomeness, and weight of fruit, many of which weigh more than 1 lb. each. Wherever Tomatos are grown, whether for private use, market, or exhibition, this one will take a leading place. *J. H.*

THEA VIRIDIS (TEA-PLANT).—A bush of the above, 8 feet high, and 4 feet through, is thickly in bloom in these gardens. The flowers are not unlike those of a single-flowered Camellia, of a creamy-white, and they appear at the tips of the current season's shoots. The tropical summer, no doubt, has caused the plant to flower so freely. *J. Mayne, Bicton, Devon*.

ONOSMA TAURICA.—This is a plant of much attractiveness, and deserving of special notice. We have had it growing on a small rockery which is fully exposed to the western sun, and despite the excessive drought, it flowered for six or eight weeks with great freedom. It is a pretty graceful plant of 6 inches in height, and forming compact tufts of lanceolate, hairy leaves. The flowers are hand-shaped, bright golden yellow, and produced in long terminal cymes. The plant is perfectly hardy, is

specially adapted to the rocky and the front of herbaceous borders, and should be propagated by cuttings in early spring. *Q. Read, Hampton, Evesham.*

PEASGOOD'S NONSUCH APPLE.—This variety has done well in this neighbourhood. We to-day saw fruit grown in the gardens of Cote House (Mr. Bannister, gardener), on a bush tree, one fruit weighing 1 lb. 12 oz., two fruit weighing 3 lb. 7½ oz., six fruit weighing 8 lb. 13½ oz., and twelve fruit weighing 15 lb. 13 oz. *Jas. Garaway & Co., Durdham Down, Bristol.*

THE ARRANGEMENT OF HARDY FLOWERING PLANTS IN THE GARDEN.—At this time of the year the planting and dividing of herbaceous plants will occupy the gardener's attention, and these plants may be grown in formal beds and borders, and are beautiful everywhere; the planting of them in long, narrow borders is not generally to be admired. The most enjoyable way of planting them is in recesses, which may be of different sizes—here a nook and there a nook, some in the full sunshine, others in the shade, amid trees and shrubs. In the latter position may be planted such plants as dislike being disturbed at the root, as well as bulbs that may be left in the ground from year to year. There is in most large gardens no difficulty in finding a place for everything worth growing. Some look well in masses all of one colour, whilst others are best when mixed. Within the past few years much floral wealth has been afforded the planter, as, for instance, Pæonies, herbaceous and the Moutan or tree varieties, which when planted in masses, and well cultivated, have few equals. Lilies of all kinds again, Teas and hybrid perpetual Roses, and the old-fashioned climbers should not be omitted. The white and red Provence, the Moss, and the old summer Roses; white Jasmine, Honeysuckle, Wallflowers, Clove-scented and other Carnations, Lavender, Rosemary, Southernwood, white patches and banks of Lily of the Valley, Violets, &c. Sweet Briar is nice when used for hedges, or left to grow at will at the back of a group, in which stage it is always an attractive plant. The tall and stately Hollyhocks, Larkspurs, Pampas Grass, Yuccas, &c., and large masses of the Japanese Anemone, are always pleasing to the eye. The old-fashioned type of Musk, hardy Heaths, London Pride, and the alpine Phloxes should be planted in patches suitable to them. The above are only a few of the many beautiful plants available for the beautifying of the flower garden, and they should always be included where possible. Plenty of scope will be found for the display of climbing and creeping plants. A growing demand and increasing love for plants and flowers are penetrating into every home of the rich and the humble folk, and it is by increasing the above class of plants that the million can be supplied with flowers fresh and cheap. All who have gardens, large or small, should fill their gardens with a suitable selection, properly and tastefully arranged. They will then reap the full enjoyment a garden can give. *A. Evans, Lythe Hill.*

SOCIETIES.

CRYPTOGAMIC SOCIETY OF SCOTLAND.

SEPTEMBER 19, 20, 21.—The nineteenth annual conference of this Society was held at Moffat on the above dates. Colonel Stirling, of Gargunnoch, presiding. Moffat is widely known as a popular health resort, its mineral waters having long been famous. Whatever benefit these may confer on the invalid, must be greatly enhanced by its delightful atmosphere and beautiful scenery. In the immediate neighbourhood there is a charming variety of scenery, of wooded hills, ravines, and streams. The hill scenery is peculiar to the south of Scotland. It lacks the rugged character of most of the Scottish mountains. There is much sameness in its great green billows; yet its quiet pastoral beauty has a charm of its own. The whole district is rich in associations, lying as it does between the land of Burns and that of Scott and Hogg, the "Etrick Shepherd." It forms part of the old border-land, which has been celebrated in romance and song.

At the business-meeting of the Society a valuable paper on the "Mosses, Hepaticas, and Lichens of the Moffat District," by Mr. James McAndrew, New Galloway, was submitted. Mr. D. A. Boyd also contributed "Notes on various Micro-fungi observed in

the Killin District, Perthshire." A lengthened discussion took place on the publication of the Society's Records, and it is hoped that, ere long, its *Transactions* may contain a first instalment of these. We would take this opportunity of appealing to English botanists to aid in a work which must prove invaluable to them, by joining the membership of the Society.

By the kind permission of the various proprietors, excursions were made to the neighbouring woods. Raehills Glen and Lochwood Tower—a ruin which is surrounded by Oaks, whose gnarled trunks are the growth of centuries; Garpel Linn, Craigielands, Dumcrieff, Gallowhill, and Gardenholm, were all visited, and proved fruitful fields for the Cryptogamic botanist. Many species of great interest were gathered. The following may be noted:—Mosses: *Tortula lævipila*, Brid.; *Hypnum patientiæ*, Lindl.; *H. crista-castrensis*, Linn. Lichens: *Stictina fuliginosa* (Dicks.), Nyl.; *Lobaria pulmonaria* (Linn.), H. Hon.; *Parmelia conspersa* (Ehrb.), Ach.; *Nephromium lusitanicum* (Schaer.), Nyl. Fungi: *Agaricus virosus*, Fr.; *A. pterigenus*, Fr.; *A. hæmorrhoidarius*, Kalch.; *Fistulina hepatica*, Fr.; *Tremellodon gelatinosum*, Pers.; *Kneiffia setigera*, Fr.; *Anthina flammea*, Fr.; *Helvella elastica*, Bull.; *Hypomyces rosellus*, Tul.; *Ustilina vulgaris*, Tul.

It is worthy of note that *Tremellodon gelatinosum*, one of the most beautiful of fungi when well-developed, has not hitherto been found in Scotland, except in Dumfriesshire. A single specimen, finer than any since met with, was sent to the fungus show at Dumfries in 1883. It was found in several places at Moffat.

In most districts of Scotland during the past season, owing, doubtless, to continued drought, fungi have been conspicuous by their absence. We were fortunate at Moffat in compiling much longer lists of species than we had anticipated.

The next annual conference of the Society will be held at Stranraer, Wigtonshire. *J. S., Glamis.*

DEVON AND EXETER GARDENERS' ASSOCIATION.

SEPTEMBER 27.—The annual business meeting was held on the above date, at the Guildhall, Exeter, under the presidency of Major Tracey, of Pytte House, one of the Vice-Presidents of the Association. There was a large attendance of members.

Major Tracey, in opening the meeting, spoke of the good that was being done by the Society, the interchange of ideas and theories of cultivation being of great value to the members, who, for the most part, were working gardeners.

The committee's annual report, read by the Hon. Secretary, Mr. A. Hope, stated that it was with a sense of gratification that the committee presented a favourable report of the work of the past year. To show the scope of the work and the wide variety of subjects treated, a list of them was given, and the report proceeded to state that the subjects were of a practical and interesting character to the members. The most valuable feature was that in all cases the essayists were specialists in the particular subject in hand. This naturally added considerable weight to their opinions and the conclusions arrived at. The discussions which followed were eminently practical. As was reported at a meeting of the Association, the County Council did not accede to the application of this Association for a grant towards technical instruction in gardening, but the fact that a sum has been granted in some other districts for a similar purpose leads the committee to hope that the Association—one of the most important of its kind in the county—may in the near future be recognised as a proper medium through which to further the benefits of technical education in horticulture in this neighbourhood, especially in the direction of hardy fruit-growing. The papers delivered during the session have been published. The report then made reference to the visits made by the members to the gardens in the neighbourhood, and the outings proved as educational as they were social. The expenses incurred in this connection were borne entirely by those taking part in them. No part of the funds of the Society were used for that purpose. Since the last report the Association had become possessed of a large number of books on gardening, thus forming the nucleus of a good library. They were indebted to the Library Committee of the Albert Memorial Museum, through Mr. Dallas, for many of these. Thanks were also due to Miss Crocker, of Bovey Tracey, for her handsome gift of books. The committee also ex-

pressed their indebtedness to the Mayor and City Council for the use of the Council Chamber, and to the Rev. Dr. Dangar for the use of the Lecture Hall of the Training College on one occasion. Thanks were given to the local and London Press for notices of the proceedings of the Society; also to several gentlemen who showed interest in and subscribed to the funds of the Society. Both as regards the numbers on the roll of membership (over 100), and the balance in hand (upwards of £20), the position of the Association is a satisfactory one, and it now enters on its third year of existence with every prospect of success.

Mr. W. Mackay (Hon. Treasurer), presented a report. The subscriptions for the year amounted to £23 13s. 6d., against £20 8s. 6d. last year; and the balance in hand was £20 12s. 3d.

On the motion of the Chairman, the report and accounts were adopted.

The election of office-bearers for the year was then proceeded with.

Mr. Hope moved that Sir Dudley Duckworth-King, Bart., of Weir House, be elected President for the ensuing year, which was carried unanimously.

The name of Mr. James Dallas, Honorary Curator of the Albert Memorial Museum, was added to the list of Vice-Presidents, and the present Honorary Secretaries (A. Hope and T. E. Bartlett), and Hon. Treasurer (W. Mackay) were re-elected. "*Devon and Exeter Daily Gazette*," September 29, 1893.

NATIONAL CHRYSANTHEMUM.

NEW CHRYSANTHEMUMS.—Two meetings of the Floral Committee of the above Society have recently been held, at which new Chrysanthemums were submitted for approval. First-class Certificates of Merit were awarded to Mr. E. Rowbottom, Priory Road, Hornsey, for Edwin Rowbottom, an early Japanese fit for exhibition, good in size, of the type of Madame C. Desgranges, but reflexed like Avalanche—in colour, bright yellow; also to Mr. Norman Davis, Lilford Road Nursery, Camberwell, for a reflexed Japanese, named Samuel Barlow, of the colour of Margot, but with twisted petals; dwarf growth, only 2½ feet high, and a very promising English seedling. Another early Japanese of a promising character, as a decorative variety, named M. Gustave Grunerwald, white, with slight tinge of yellow, was shown both by Mr. N. Davis and Mr. W. Piercy, and the committee wished to see both varieties again. At a subsequent meeting held on September 27, M. Gustave Grunerwald was shown again by Mr. Davis, he having a dwarf bushy plant that was profusely bloomed. It was awarded a First-class Certificate of Merit as an early-flowering decorative variety. Mr. Davis also showed H. Shoosmith (Japanese), the colour a shade of primrose-yellow, changing to white; petals broad and solid, reflexed as regards the basal, the centre ones incurved. As only one bloom was expanded, the committee desired to see it again.

A First-class Certificate of Merit was unanimously awarded to Mr. R. Owen, Castle Hill Nursery, Maidenhead, for Mrs. C. B. Myers (Japanese), a large reflexed bloom, white, the centre primrose-yellow, of very fine character.

Mr. W. J. Godfrey, nurseryman, Exmouth, sent two Japanese varieties, one an English seedling, Devonshire Lass, pale cream, with a slight yellow centre, the centre petals yellow—a promising variety, which the committee wished to see again; and Madame Edouard Rey, one of M. Calvat's raising, pale amaranth, or deep pink or rose, the broad incurved petals having a silvery reverse—a very promising bloom, which the committee wished to see again. Mr. E. Beckett, The Gardens, Aldenham House, Elstree, sent delicatum, a blush "Japanese", with thread-like petals, reflexed, full, and very pretty. A First-Class Certificate of Merit was also unanimously awarded to Mr. E. Rowbottom, The Priory Gardens, Hornsey, for Japanese President Bovil (Calvat), magenta, Rose, or pale amaranth, with a golden reverse; a very fine reflexed flower of excellent quality.

INTERNATIONAL EXHIBITION AT LIEGE.

THIS recent exposition, organised by a federation of the Horticultural Societies of Liège, has succeeded beyond all expectation. We will give here a brief account of the principal exhibits; a complete list would prove too long, although there is much which merits notice. Among the numerous exhibits from the well-known firm of Jacob Makoy

et Cie., and occupying the place of honour, are ornamental plants, such as *Chamærops arborescens*, a distinct variety with deeply-cut leaves; *Pandanus ornatus*; a large specimen of *Rhopala corcovadensis elegans*; *Dracena lentiginosa*, not widely known, but useful for trade purposes; *Carludovica Drudei*, very decorative; and *Eugenia oleifolia*.

Among a number of large and beautiful Palms, we may mention *Phoenix rupicola*; *P. macrocarpa*, a handsome and rare species; *Kentia Forsteriana*, and an excellent specimen of the rare *Thrinax graminifolia*. Of great beauty were the dozen fine specimens of *Araucaria*, furnished with leaves from base to crown; the rare *A. Niepraschki Regeliana*, also rare; *A. excelsa gracilis*, not in commerce; and *A. Cunninghami glauca*, in full beauty; these were the most noteworthy. A fine specimen plant of *Araucaria Rulei* was shown, a sample of good cultivation. Among the best of the greenhouse Conifers, also from Jacob Makoy et Cie., we noted the rare *Dammara hypoleuca* and the curious *Araucaria brasiliensis grandis*. The "plantes d'appartement" included among others a *Cycas neo-Caledonica*, very ornamental and pleasing; and an exceedingly decorative plant of *Rhopala corcovadensis elegans*. There was a very praiseworthy lot of forty miscellaneous plants from the same firm, containing some choice specimens; we may name *Anthurium Kerchovi*, from A. ornatum \times Veitchi, and not yet in commerce, chiefly remarkable for the size of the leaf, the plant is very fine; a pretty *Carludovica elegans*, *Cupania flicifolia Makoyana*, much more elegant than the type, and we are told more easily multiplied; fine specimens of *Spathiphyllum Ortgiesi* and *Dieffenbachia Fournieri*, this latter not yet in the market; *Dracena Douceti*, and a good example of *D. regia*. Among the most beautiful greenhouse plants with coloured foliage, we may enumerate *Ananassa penangensis* var., *Curculigo recurvata* fol. var., *Croton Hanburyanus*, *Philodendron corsinianum*, *Nephtytis picturata*, a beautiful group of *Abutilon*, *Souvenir de Bonn*, and *Dracena fragrans aureo-striata*. The Bromeliads from this firm included *Vriesia Lubbersi*, very rare; *V. Crousseana*, not yet in commerce; *V. leodiensis*, and *V. Quintusiana*, very interesting. Among their new plants there were several worth notice. In the first place a promising *Dracena* which will take a high place for grouping purposes; it is an introduction from Fernando Po, and dedicated to M. Francis Büchner, a nurseryman of Munich, and general president of the international jury of the Liège Exhibition. *Dracena Büchneriana* is remarkable for long and fine leaves of dark green colour, glossy, coriaceous, undulated, the sides whitish, and very decorative—the largest leaf was nearly 5 feet across. We should also mention *Strobilanthes Dyeriana* (from the East Indies), *Pandanus Baptisti* (Oceania), with beautiful leaves striped with yellow—one of the best plants in the market; *Begonia decora* (Penang), of compact habit, with pretty leaves, with pale yellow-green veins, the intermediate spaces bearing little risings tipped with hairs. These excrescences are of a rich reddish-brown bronze colour, or purplish-brown, gradually shading into deep metallic green. *Vriesia Quintusiana* (Brazil) bears broad leaves with dots of brown on them, and is very ornamental; so are *Tradescantia reginae*, *Peperomia metallica*, *Smilax argyrea*, and *Hypolytrum Schroderianum* (Brazil). This latter resembles certain *Pandanus* in habit, the leaves are tinged with purple at the base with purple veins. We noted also *Hoplophytum Maranta iconifera argentea*, and *Heliconia Lubbersi* (Columbia), a capital plant, leaves satiny, olive green, shaded with a deeper tone, and most brilliant towards the centre of the blade, which seems as if made of satin; the midrib rose-carmine, bordered four-fifths from the base with white, merging little by little towards the tip into pure white; the petiole and the under-side of the blade claret-coloured. This firm also showed many fine collections of Orchids; we may name *Vanda Kimballiana*, *Oncidium papilio*—very fine, *Cattleya gigas imperialis*, *Lycaste Skinneri*, *Odontoglossum biconense*, *O. hastilabium*, *Cattleya Dowiana aurea*, *Vanda cœrulea*, *Cypripedium nitidissimum*, *C. Ashburtoniae majus*, *C. Harrisianum Wal-laerti*, *C. bellatulum Marie*, *C. ænanthum superbum*, *Odontoglossum Leonie*, and *Oncidium incurvum*, a well-grown specimen, with nineteen flower-stems, and about 2500 blooms. There was also a collection of exotic Ferns, which gave a good idea of these beautiful plants; there were the new *Pteris Wallichii*, *Woodwardia radicans cristata*, *Nephrolepis platyphylla*, the pretty *Stenochlæna scandens*, and *Gonio-*

phlebium neriifolium. The Crotons were excellent in cultivation and colouring; the Cannas included some good novelties. In a word, the firm of J. Makoy et Cie. staged most praiseworthy exhibits, and won the prix de l'honneur of the floricultural section.

Among the exhibits of other growers, we should notice a well-grown *Phrynium Lubbersi* and fine specimens of *Dracena Baptisti* and *D. Bergmanni*, from M. Jos. Chaumont, who staged twenty-five *Heliotropes* in bloom, remarkably well cultivated, and eliciting from the jury an increase in the value of the medal, which was awarded *par acclamation* and *avec felicitation*. M. Debeur, an amateur, sent some excellent things, notably *Washingtonia robusta*, *Sabal palmetto*, and *Cocos Romanzoffiana*, all good plants. A nurseryman, M. Marvet-Postula showed, among other plants, a fine *Pritchardia robusta*, and a tall *Areca sapida*, also a fine plant of *Dracena fragrans* fol. aureo-striata, *Phyllotanium Lindenii*, and *Strobilanthes Dyeriana*, *Cocos campestris*, some fine Cannas, Pinks, flowering *Chrysanthemums*, *Bouvardias*, *Pentstemons*, &c. Another Liège firm, Joirisset Frère, was also noticeable for the number and excellence of their exhibits, which included *Selaginellas*, tuberous *Begonias*, zonal *Pelargoniums*, *Fuchsias*, *Dahlias*, *Bouvardias*, *Lantanas*, *China Asters*, &c. MM. Duriez Frères sent some good things; in the mixed collection were *Rhapis humilis*, *Asparagus tenuissimus*, of unusual size; a very fine *Pteris Rex*, *Dracenas*, among which was *D. Lindenii*, noticeable for its beautiful colour, and *D. Douceti*; there were also greenhouse plants with coloured foliage of which *Phyllotanium Lindenii* superbum was the most ornamental, and exotic Ferns; also large and handsome specimen plants wonderful for cultivation and freshness, the most worthy of note were *Nephrolepis Davallioides furcata*, *Didymochlæna pulcherrima* and various varieties of *Adiantum*. The fifteen exotic Ferns from M. J. Chaumont fils were notable for freshness, good cultivation, and variety.

Miltonia Blunty Lubbersiana, from M. Jules Hye, is a valuable Orchid; the flower is large, peculiarly spotted, of a rich deep colour—the specimen bore four flower-stems, with a dozen blooms. *M. Moreliana superba* was remarkable for the size of its divisions and the darkness of their colour; *Cypripedium giganteum*, which won distinction at the Ghent meeting, obtained here also a First-class Medal. This exhibition proved a great success, thanks to the united efforts of all its promoters in this important horticultural centre. *Ch. de Bosschère*.

THE APIARY.

DRIVEN BEES.

BEES driven from straw skeps that can generally be obtained in most country districts in the autumn, are very useful for making fresh colonies or strengthening any stocks in the apiary that are weak. In utilising them to make fresh colonies, they should, if possible, be put on built-out combs, and if the latter are stored, so much the better. Five or six pounds of driven bees treated in this way, will make a good stock for next year. If it is required to make driven bees build combs, they should be obtained as early as possible, preferably in August, and there will then be time for brood to be raised, and a fair number of young bees to go into winter-quarters, as the temperature will in that month be favourable for comb-building. The great difficulty in August, however, is to get the bees, as cottagers generally think it too early to part with them, and are not inclined to have their honey taken until they are satisfied that there is no more to be gathered. As a matter of fact, hives decrease in weight in most districts as soon as the Lime trees and White Clover have done blooming. If driven bees are required for strengthening weak stocks, great care should be taken in uniting, as this is very risky work if not properly done. The safest way is to put the driven-bees on combs, and stand them for a few days in a hive by the side of the stock to which it is wished to unite them. Then late in the evening the frames may be lifted out with the bees on them and transferred, after dusting each lot with flour.

Uniting weak Stocks.—Stocks that are weak and not likely to live through the winter should be united, choosing the evening for the operation. If the hives do not stand close enough together, to save the time and trouble of bringing them nearer at the rate of 3 feet a day if the entrances are closed, and the bees

shut in for three or four days with bits of perforated zinc, the hives may be placed anywhere without the bees going back to their old stands.

Self-hivers.—Should it be found after the experience gained from another swarming season that self-hivers are to take a place amongst the necessary appliances required for successful bee-keeping, a very ingenious invention has been patented by Mr. Hovard, and will, no doubt, come to the front. The arrangement consists of a drawer, the bottom being covered with queen-excluding perforated zinc, which fits beneath the floor-board of the hive. The queen is prevented from leaving at swarming time through the entrance to the hive being covered with queen-excluding zinc, her only exit being down a wire cone, which conducts her through the floor-board into the drawer beneath. The bees go out and cluster, and as the queen does not join them, they return in search of her, and simply remain in and about the drawer, so that they are practically made to swarm underneath their own hive. The drawer is also a splendid drone-trap, by means of which every drone in the hive can be caught, and destroyed without trouble; but it becomes a question if a colony of bees without drones would ever attempt to swarm, so diverse would it be to their natural instinct, so that the invention may possibly solve the present apparently insuperable difficulty of preventing swarming. *Expert*.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending September 30.	ACCOMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 1, 1893.	Below 42°, difference from Mean since January 1, 1893.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ina.					
0 3 —	38	6	+ 543	— 54	3 +	176	34.2	31	25	
1 3 —	41	4	+ 333	— 20	2 —	142	19.1	26	37	
2 1 —	57	0	+ 414	— 62	2 +	121	14.9	30	33	
3 0 aver	78	0	+ 484	— 38	1 —	116	13.3	30	44	
4 1 +	75	0	+ 636	— 50	1 —	114	14.0	35	42	
5 0 aver	90	0	+ 557	— 43	5 +	111	14.8	38	46	
6 0 aver	60	0	+ 489	— 63	4 +	140	26.4	20	37	
7 0 aver	78	0	+ 696	— 91	9 +	130	21.0	24	37	
8 0 aver	85	0	+ 694	— 70	2 +	117	21.7	39	43	
9 1 +	72	0	+ 567	— 104	3 +	152	24.0	31	33	
10 1 +	83	0	+ 607	— 100	2 +	132	22.1	28	36	
* 1 +	109	0	+ 818	— 52	4 +	124	19.3	41	57	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 30, is furnished from the Meteorological Office:—

"The weather continued very changeable and unsettled, with heavy falls of rain at almost all the western and extreme northern stations, and frequent sharp showers in the south and east. Thunderstorms were experienced at some of our south-eastern stations at the close of the period.

"The temperature was rather below the mean in the north and east of Scotland, but elsewhere it was

about its normal value. The highest of the maxima, which occurred on the 27th over England, and on the 28th over Ireland and Scotland, ranged from 68° in 'Scotland, E.,' and the 'Midland Counties,' to 59° in 'Scotland, N.' The lowest of the minima were experienced during the early days of the period, when the thermometer fell to 25° in 'Scotland, N. (at Lairg), to 30° in 'Scotland, E.,' and 'England, S.W.,' to 31° in 'Ireland, S.,' and to between 33° and 37° in most other districts; in 'England, N.W.,' however, the lowest reading was 40°, and in the Channel Islands, 46°.

"The rainfall was a little less than the mean in 'Scotland, E.,' 'England, E.,' and the 'Midland Counties,' but in all other districts there was an excess, that in 'England, N.W.,' being very large. At Stonyhurst the aggregate fall for the week was as much as 4.04 inches.

"The bright sunshine was less than the normal amount in most districts, the percentage of the possible duration ranging from 41 in the Channel Islands, 39 in 'England, S.W.,' and 38 in England, S., to 24 in 'England, N.W.,' and 20 in 'Scotland, W.'"

MARKETS.

COVENT GARDEN, October 5.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

PRICES rule as last week.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Aran, per doz. bl. ... 6 0-9 0	Orchids:—
Aster, dozen bun. ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Bouvardias, per bun. ... 0 6-1 0	Odonoglossum
Carnation, doz. bun. 4 0-9 0	crispum, 12 blms. 2 0-6 0
dozen blooms 1 0-2 0	Peas, Sweet, various,
Chrysanthemums, 12	doz. bunches ... 3 0 6 0
bunches ... 4 0-8 0	Pelargoniums, scar-
doz. blooms ... 0 6-2 0	let, p. 12 bun. 3 0-6 0
Cornflower, 12 bun. 1 0-2 0	— 12 sprays ... 0 6-0 9
Dahlias, doz. bun. ... 2 0-4 0	Poppy, doz. bunches ... 1 6
Eucharis, per dozen 4 0-6 0	Primula, dble. p. bun. 0 6-1 0
Gardenia, per dozen 3 0-6 0	Pyrethrum, 12 bun. 2 0-4 0
Heliotrope, 12 sprays 0 3-0 4	Roses, doz. bunches 3 0-8 0
Lilium lancifolium,	— Tea, per dozen 0 6-2 0
p. doz. blooms 3 0-6 0	— coloured, dozen 2 0-4 0
— Harrisii, p. doz. 2 0-5 0	— yellow (Maré-
Maiden Hair Fern,	chals), per doz. 1 6-6 0
12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-1 6
Marguerite, 12 bun. 1 6-3 0	Stocks, per bunch ... 0 4-0 6
Mignonette, 12 bun. 2 0-4 0	Sunflower, various,
Myosotis, 12 bunches 2 0-3 0	dozen bunches ... 2 0-6 0
Fansy, per doz. bun. 1 0-2 0	Tuberose, 12 blms. 0 4-0 6

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Peaches, per doz. ... 2 0-8 0
Orbs, per 100 lb. ... 30 0- ...	Pine-apples, St. Mi-
Grapes, per lb. ... 0 6-3 0	chael ... 2 0-5 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ficus elastica, each 1 6-7 6
Aspidistra, per doz. 15 0-30 0	Foliage plants, doz. 12 0-42 0
— specimen, each 7 6-21 0	Fuchsia, per doz. ... 4 0-6 0
Asters, dozen pots 4 0-9 0	Heliotrope, per doz. 4 0-6 0
Begonias in pots, doz. 8 0-12 0	Hydrangea, per doz. 12 0-24 0
Balsams, per doz. 3 0-6 0	Ivy Geranium, doz. 4 0-6 0
Campanula, per doz. 6 0-12 0	Lilium Harrisii ... 18 0-24 0
Chrysanthemums, doz. 6 0-9 0	— lancifolium, dz. 12 0-18 0
— large plants, each 1 6-2 0	Marguerite, per doz. 6 0-12 0
Cyperus, per dozen 4 0-10 0	Mignonette, doz. pots 4 0-6 0
Dracena, each ... 1 0-5 0	Palms, various, each 2 0-10 0
Erica caffra, per doz. 9 0-15 0	— specimens, each 10 6-84 0
Evergreen Shrubs, in	Pelargonium, p. doz. 6 0-12 0
var., per dozen ... 6 0-24 0	— scarlet, p. doz. 3 0-6 0
Ferns, various, doz. 4 0-9 0	Solanums, per doz. ... 9 0-12 0
— small, per 100 ... 4 0-6 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 6- ...	Lettuces, per doz. ... 1 6-2 0
Beet, red, per dozen 2 0-3 0	Mushrooms, punnet 0 9-1 0
Carrots, per bunch ... 0 4-0 6	Mustard and Cress,
Cauliflowers, each 0 3-0 6	punnet ... 0 2- ...
Celery, bundle ... 1 0-1 3	Parsley, per bunch ... 0 2-0 3
Cucumbers, each 0 2-0 6	Shallots, per lb. ... 0 3- ...
Endive, per dozen 1 3-1 6	Tomatoes, per lb. ... 0 3-0 6
Herbs, per bunch ... 0 3-1 0	Turnips, per bunch ... 0 4-0 6
Leeks ... 0 4- ...	

POTATOS.

Trade continues in a very unsettled state, and prices very low, except for very best samples, which are readily picked up at from 85s. to 95s.; Medium, 55s. to 70s.; Black Lands, 40s to 45s. J. B. Thomas.

SEEDS.

LONDON: Oct. 4.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that to-day's market presented no special feature of interest,

Orders for Trifolium still come to hand; prices have now fallen to a very low level. Winter Tares are much wanted; quotations very firm. Rye is steady. For Canary seed there has lately been a revived and greatly improved consumptive demand; values in view of the extremely light stocks held, exhibit great strength. There is no change in Mustard and Rapeseed. Blue Peas and Haricot Beans meet a better inquiry.

FRUITS AND VEGETABLES.

BOROUGH: October 3.—Quotations:—Cabbages, 4s. to 7s.; Cauliflowers, 5s. to 8s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 4s. to 5s. per bag; Damsons, 1s. 6d. to 2s. 6d.; Plums, 2s. 6d. to 3s. 6d. per half-sieve; Apples, 2s. to 8s. per bushel.

STRATFORD: Oct. 4.—There has been a good supply of all kinds of produce at the above market during the past week, and a brisk trade was done at the undermentioned quotations:—Cabbages, 4s. to 8s. per tally; Savoy, 5s. to 7s. 6d. per tally; Cauliflowers, 9d. to 2s. per dozen; do., 3s. 6d. to 9s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; do., 40s. to 50s. per ton; Carrots, household, 45s. to 55s. per ton; cattle-feeding, 30s. to 42s. 6d. per ton; Mangels, 22s. 6d. to 26s. per ton; Swedes, 27s. to 30s. per ton; Onions, English, 120s. to 130s. per ton; Dutch, 5s. to 5s. 6d. per bag; Porto, 6s. to 6s. 6d. per box; Apples, English, 2s. to 4s. 6d. per bushel; Brussels Sprouts, 3s. to 4s. per sieve; Scarlet Beans, 3s. to 3s. 6d. per sieve; Celery, 9d. to 1s. 3d. per bundle; Horseradish, 1s. to 1s. 9d. per bundle; Cucumbers, frame, 1s. 3d. to 2s. 6d. per dozen.

FARRINGTON: October 4.—Quotations:—Cauliflowers, 5s. to 8s.; Cabbages, 4s. to 7s. per tally; Turnips, 1s. to 2s. 6d.; Parsley, 2s. to 2s. 6d.; Carrots, 2s. to 3s. per dozen bunches; Onions, 4s. to 5s. per bag; Horseradish, 1s. 6d. per bundle.

FARRINGTON: October 5.—Quotations:—Apples, 2s. 6d. to 3s. 6d.; Pears, Calabasse, 6s. to 7s.; common, 2s. 6d. to 3s. per bushel; Melons, 3s. to 4s. 6d. per case; Grapes (Almeira), 11s. to 13s. per barrel.

POTATOS.

BOROUGH AND SPITALFIELDS: October 3.—Quotations ranged between 40s. and 100s. per ton.

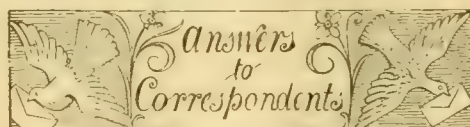
STRATFORD: October 4.—Quotations:—Dark-lands, 42s. to 50s.; light do., 45s. to 60s.; Sutton's Abundance, 65s. to 80s.; Hebrons, 70s. to 90s. per ton.

FARRINGTON: October 5.—Quotations:—Hebrons, 80s. to 100s.; Regents, 60s. to 80s.; Magnums, 45s. to 60s.; other kinds, 40s. to 60s. per ton.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

BELLADONNA LILY.—Will some of our readers who have been successful in flowering the Belladonna Lily in pots, kindly afford "W. F." details of method of culture.



BULBS PERFORATED BY TWITCH: P. M. T. This is not an uncommon appearance, but how it was effected was for a long time a puzzle. The explanation now accepted is that the twitch secretes a fluid at the tips which softens and dissolves the coats of the bulb, and allows the grass to penetrate; see fig. 71.

CARROTS: W. G. The roots have been eaten probably by wire-worms.

EQUISETUM ARVENSE: L. The blocking of drain pipes by the roots of this plant is not uncommon. We know of no means of checking it, save by continuing to drain the field. As the land gets dry, the weed will die out. It will be better to use rubble stones instead of pipes, making a V-shaped bottom to the drain, placing sods or brushwood over these.

GRAPES: W. H. M. The best white Grape for a mixed house is Foster's Seedling. Muscats are often a failure in such a position. A variety called Lady Hutt, of recent raising, is considered a very good Grape, and is a first-class keeper.—E. K. The berries are in every case badly shanked, which accounts for their shrivelling and falling-off. The causes will be found at the root, probably—roots very deep in the soil, a soured soil, waterlogged border, entailing loss of the finer roots; these are the usual causes, but shanking may be due to overcropping, or sudden check to

growth. Without seeing the Vines and the border, we cannot do more than indicate the probable causes. It may be taken for granted that perfectly healthy Vines are not afflicted with shanking. The leaves sent were thin, small, and covered with red-spider in the case of one of them, and the wood was not robust.

NAMES OF FRUITS: (Some delay has unavoidably occurred in furnishing the names.) A. B. 1, Beurré Clairgeau; 2, next week; 3, Pitmas-ton Duchess; 4, Beurré Bachelier; 5, decayed.—W. B. S. 2, Swan's-egg; 3, Hayshe's Victoria; 4, rotten; 5, not known; 6, White Doyenné.—H. G. B. Pear Sanguinole, or Blood-pear.—F. Bat. Fruit all bruised beyond recognition.—D. E. 1, not recognised; 2, Rymer; 3, Alfriston; 4, Red Autumn Calville; 5, Easter Beurré very early; 6, rotten.—P. G. 1, Waltham Abbey Seedling; 2, Ribston Pippin; 3, Cellini; 4, Hawthornden; 5, Catshead; Pear Beurré de Capiaumont. B. & S. Apple Tower of Glamis.—J. T. A. 1, Cox's Pomona; 2, decayed.—

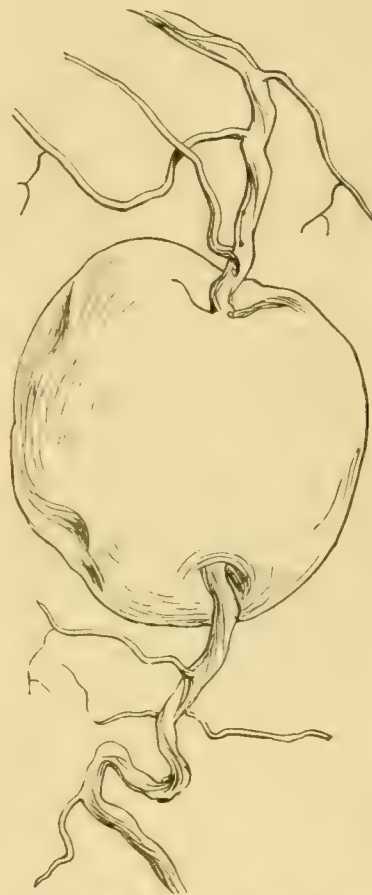


FIG. 71.—POTATO PERFORATED BY COUCH-GRASS ROOT.

W. H. B. Not known, most probably a local variety.—C. B. 1, Fondante d'Automne; 2, not recognised; 3, Marie Louise; 4, Beurré Boac. F. H. C. Apple too small to be of any value; name certainly not known.—W. G. L. 1, Beurré Diel; 2, Duchesse d'Angoulême; 3, Bezi Goubault; 4, Glou Morceau; 5, not recognised, most resembles Souvenir du Congrès; 6, Scarlet Nonpareil.—Oxon. The specimens received were all rotten, excepting No. 3, and this we cannot determine.—M. H. 1, Bergamotte d'Esperen; 2, Napoleon; 3, Marie Louise d'Uccle; 4, rotten; 5, Beurré d'Amanlis; 6, Cellini.—J. F. Apple Small's Admirable, Plums too far gone (send other Pears or Apples now).—J. R. W. 1, Red Autumn Calville; others rotten.—W. Milford. 1, Souvenir du Congrès; 2, Belle de Bruxelles; 3, Beurré Rance; 4, Autumn Bergamotte; 5, Catillac; 6, Easter Beurré—Cedars. 1, Yorkshire Greening; 2 and 3, Dumelow's Seedling; 4, Manks Codlin; 5, not known; 6, Court Pendu Plat.—J. G. 1, Jefferson; 2, Gravenstein; 3, Hawthornden; 4, Cox's Pomona; 5,

not known, a miserable kind; 6, Stone's Apple; 7, Beurré Diel; 8, Maréchal de la Cour.—*J. R. B.* 1, Blenheim Orange; 2, Cellini.—*H. N. O.* 1, Napoléon; 2, Beurré Bosc; 3, Duchesse d'Angoulême; 4, Easter Beurré; 5, Bergamotte d'Esperen; 6, Marie Louise.—*F. H. O.* 1, Doyenné du Comice; 2 and 3, Beurré Superfin; 4, Duchesse d'Angoulême; 5, not known.—*F. Waterman.* 1, Lewis's Incomparable; 2, a local seedling, most probably.—*A. J. N.* Barchard's Seedling.—*W. Parnell.* 1, Minshall Crab; 2, Golden Reinette; 3, not quite sure of; 4, American Mother.—*W. G. T.* 1, Court Pendu Plat; 3, Beauty of Kent; 4, Queen Caroline; 5, King of the Pippins.—*J. T., Appleby.* Apple Small's Admirable.—*S. W. S.* Pear Duchesse d'Angoulême. *W. Rawlings.* 1, General Tottleben; 2, Pitmas-ton Duchess; 3, Bass Pool; 5, Marie Louise; Apples: 2, rotten.—*J. E. Don.* 1, Louise Bonne of Jersey; 2, Marie Louise d'Uccle; Beurré Bosc; 4, Maréchal de la Cour; 5, not known; 6, Ribston Pippin.—*Mc.* Beurré Bachelier.—*J. W. Smith.* 3, Louise Bonne of Jersey; 6, Marie Louise d'Uccle; 7, Napoléon; others decayed—all past their season.—*C. E. S.* 1, Lady Henniker; 2 and 8, Blenheim Orange; 3, Bedfordshire Foundling; 4, King of the Pippins; 6, Dumelow's Seedling; 7, Winter Peach; 11 and 12, King of the Pippin; others not recognised.—*X., in biscuit-box.* 1, Louise Bonne; 2, Thompson's; 4, Flemish Beauty; 5, Yellow Buckland; 6, Wadhurst Pippin.—*W. Lowther.* Apple Duchess of Oldenburgh, much decayed; 4, Beurré Clairgeau; 5, Williams' (Bon Chrétien); 6, not recognised.—*W. G. S.* Peas-good's Nonsuch.—*W. W.* Manks Codlin.—*Anon.* 1, Landsberger Reinette; 2, Cambus-nethan Pippin; 3, Pear Knight's Monarch; 5, Beurré Rance; 6, Charlotte de Bromer; 7, Apple Cox's Orange Pippin.—*E. W. C., Putney.* 1, Cellini; 12, Winter Hawthornden; 10 and 11, King of the Pippins; 6, Grenadier; 16, Lord Gros-venor; 9, Royal Somerset; 18, Winter Peach; 4, Norfolk Beeing; 5, Blenheim Orange; 8, Pear Marie Louise, others decayed, or too small. Re-ceived with thanks, your postal-order, value 5s., for naming fruits. Order has been sent to the Gardeners' Orphan Fund.

NAMES OF PLANTS: *A. B.* 1 and 2, varieties of *Nerine curvifolia* (Fothergilli); 3, *N. sarniensis*; 4, *N. corusca major*.—*W. M. L.* *Smilax lanceo-lata*, probably; we cannot determine without flowers, and it was a wretched scrap that was sent.—*K. and B.* *Chrysanthemum maximum*, true. The *Helianthus* and the *Coreopsis* we cannot name from the specimens sent, they are all good.—*Workshop.* 1, *Quercus cerria*; 2, apparently a *Cratægus*; 3, 4, perhaps a *Cerasus*; we cannot tell from the leaves only.—*Q. R.* *Ecceomocarpus scaber*.—*F. D. and S.* *Helianthus multiflorus*, a good form.—*G. A. M.* 1, *Escallonia macrantha*; 2, *Pernettya mucronata*; 3, *Kalmia angustifolia*; 4, *Rosa moschata*; 5, *Forsythia viridissima*; 6, *Ligustrum lucidum*.—*F. R.* Should address the Editor. The Publisher's department is financial, and quite distinct from the editorial: 1, *Agave americana variegata*; 2, *Solanum jasminoides*; 3, specimen insufficient, may be *Libonia floribunda*; 4, *Clematis flammula*; 5, *Tecocium fruticosum*; 6, *Griselinia littoralis*.—*D. Wallace.* *Viburnum opulus*. British shrub.—*F. W. R.* The labels were displaced in opening the parcel. The one with oblong fruit we take to be a form of *Cratægus coccinea*, the other with globular fruit we cannot match exactly. We think it also may be a seedling form of *coccinea*.—*E. M. C., Kingstown.* *Liparis longipes*.—*F. C. S., Coventry.* 2, *Phyl-lanthus nivosus*; 1, *Cœlogyne fimbriata*.—*W. L., Glasgow.* *Begonia heracleifolia*.—*H. D., Sydney.* *Dendrobium atro-violaceum*, New Guinea; *D. macrophyllum* alias *Veitchianum*.—*W. S. C. P.* 1, *Sisyrinchium bermudianum*; 2, *S. graminifolium*; 3, *Gladiolus punctatus*.

ROMNEYI COULTERI: *G. M.* Yes, often.

COMMUNICATIONS RECEIVED.—*C. B., Troyes.*—*Dr. Coniventz,* Dantzig.—*C. W. D.*—*H. D.*—*J. C. Harvey,* Los Angeles.—*F. R.*—*W. N.,* Johannesburg.—*N. L.*—*B. C.*—*G. F. W.*—*P. B.*—*C. T. D.*—*A. H. K.*—*Wallace & Co.*—*H. G. G.*—*G. S. B.*—*H. J. S.*—*C. B.* See our notices this week.—*F. C. S.*—*A. H. T.*—*Constant Reader.*—*Cigarette.*—*J. W.*—*R. P.*—*J. H.*—*J. S. U.*—*M. T.*—*Q. R.*

FRUITS RECEIVED.—*W. P.*—*J. W.*—*W. T. & Co.*—*W. W.*—*J. J. F.*—*C. B.*—*G. H.*—*T. S.*—*E. Allen,* and others.

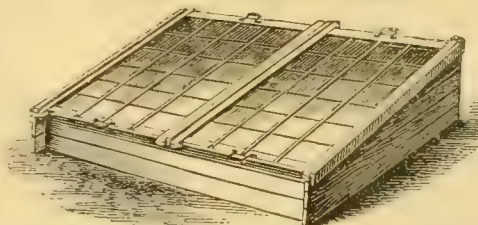
SPECIMENS RECEIVED.—*W. Cragg*—*A. W. Wilson.*

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2 "	8 ft. by 6 ft..		3	0	0
3 "	12 ft. by 6 ft..	PRICES,	4	2	6
4 "	16 ft. by 6 ft..		5	5	0
5 "	20 ft. by 6 ft..	CARRIAGE	6	7	6
6 "	24 ft. by 6 ft..		7	10	0
		PAID.			

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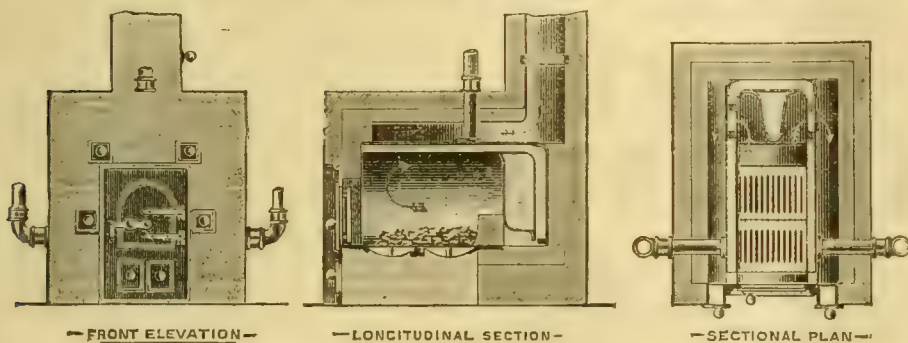
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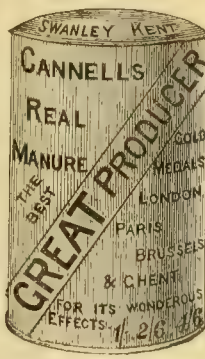
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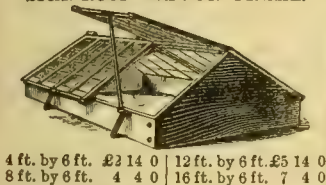


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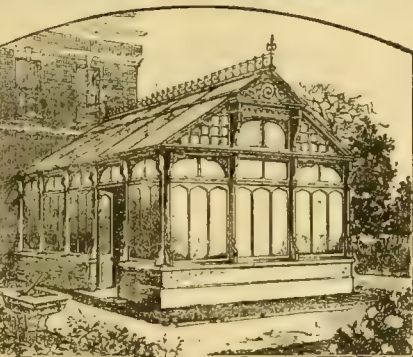
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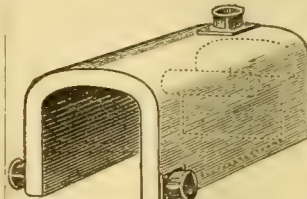
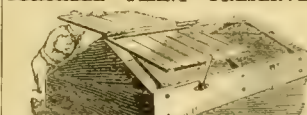


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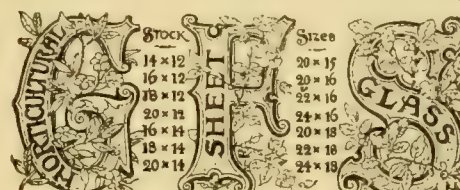
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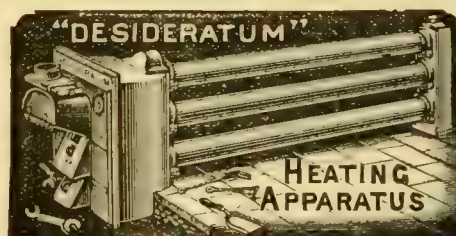
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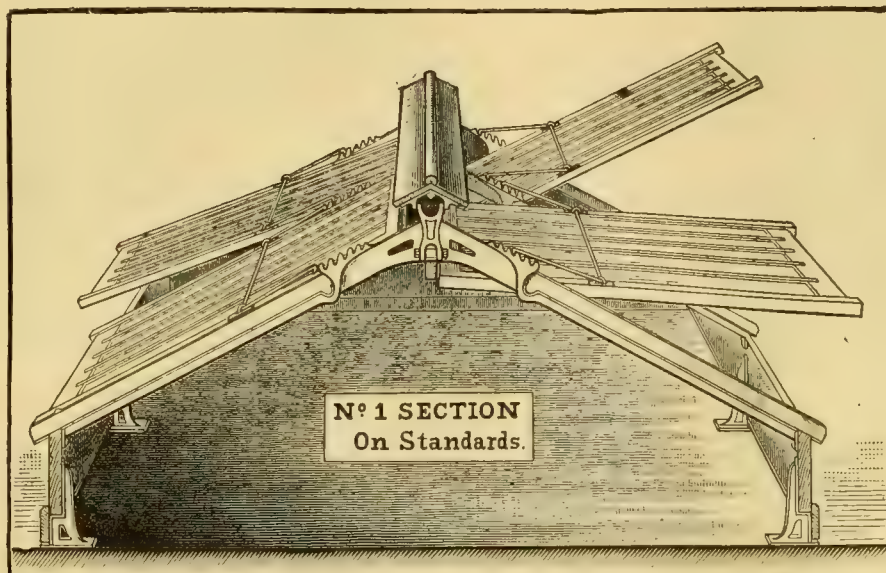
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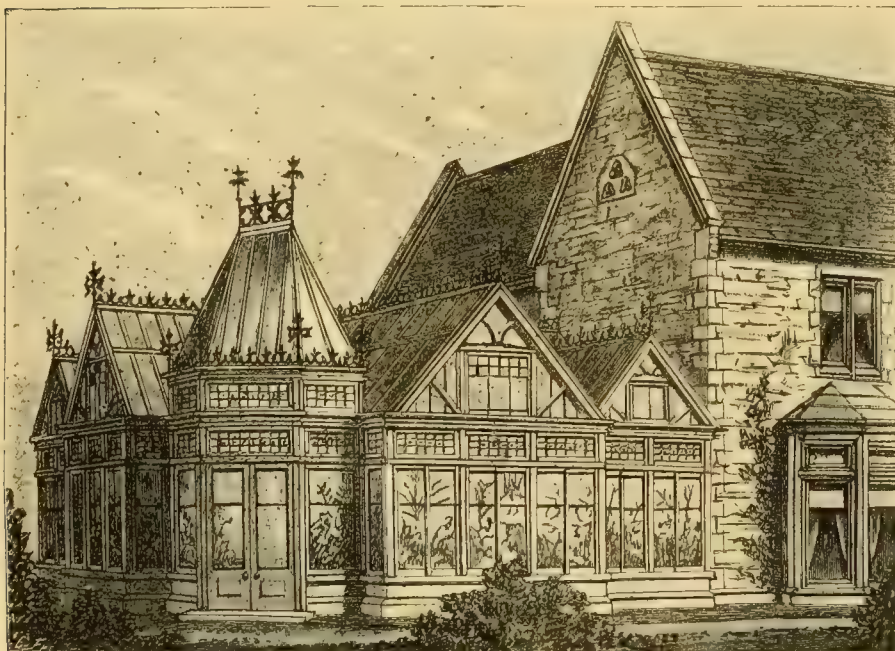
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2755.

No. 355.—VOL. XIV. { THIRD
SERIES. }

SATURDAY, OCTOBER 14, 1893.

{ Regt. as a Newspaper. { PRICE 3d.
WITH SUPPLEMENT. { POST FREE, 3½d

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TECHNICAL HORTICULTURE.

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SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

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The Best Winter blooming Carnation. MISS JOLIFFE IMPROVED.—Fine Stocky plants, per dozen, 24s.; 2nd size, 12s. "LOADSTONE" and HELEN JULIET, School of Gardening, Hemel Hempstead, Herts.

WILLIAM POTTEN'S CATALOGUE of ROSES, FRUIT TREES, EVERGREEN and FLOWERING SHRUBS, &c., can now be had post-free on application. Camden Nurseries, Cranbrook, Kent.

BORDER CARNATION (Ketton Rose), the best kind for bedding, very hardy, and flowers abundantly. The Trade supplied. Also, other good hardy kinds. LIST free from W. H. DIVERS, Ketton Hall Gardens, Stamford.

ORCHIDS.—Many rare and choice Cattleyas, Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST. W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N.

WANTED, 50,000 CALCEOLARIA CUTTINGS, Golden Gem. W. TYLER, 117, Angel Road, Edmonton.

WANTED, a few thousand 2 and 3-year-old CRABSTOCKS, good clean stuff; also a few hundred PEAR and QUINCE, same age.—Apply to H. LANGSTON, Fruit Grower, Marston, Pembroke, Herefordshire.

WANTED, VINES in large quantity. Muscats, Canon Hall Muscats, Gros Colmar. State age, and price for cash.—L. Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, YELLOW CALCEOLARIA CUTTINGS.—State quantity and price to C. COX, Angel Road, Edmonton, N.

WANTED, good CUTTINGS of GOLDEN EUONYMUS and CALCEOLARIA (Golden Gem). State price per 1000 to—J. LION, Park Nursery, Stanmore, Middlesex.

Orange Trees.

WANTED, large Specimens for a Conservatory. Must be in good health and condition. Quote number, size, and price, to WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

WANTED, 200 strong ARUMS, for flowering. State lowest price for cash. On offer, a quantity of ADIANTUM CUNEATUM, suitable for 3 and 4-inch pots, fine stuff, 6s. per 100. STRAWBERRY RUNNERS, of Thury, Paxton, Noble, Napier, and John Ruskin, 2s. 6d. per 100, all for cash with order. W. CONNELLY, Lyme Regis.

WANTED, at once, STANDARD BEECH, 10 to 12 feet high, with straight stems, not less than 6 inches in circumference a foot from the planting-line, with plenty of good fibrous roots, optional whether trimmed or not; also, COTONEASTER MICROPHYLLA, with shoots not less than 2 feet.—Price and particulars to ROBERT STANLEY, The Gardens, Rushmore, near Salisbury.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for LIST, free.

P. McARTHUR, The London Nursery, 4, Maida Vale, London, W.

RASPBERRY CANES.—Baumforth's Seedling, 9s. per 100, 70s. per 1000; Norwich Wonder, and Fastolf, 5s. per 100, 40s. per 1000. Strong Dutch RED CURRANTS, 2s. 6d. per dozen, 10s. per 100. R. H. BATH, Osborne Farm, Wisbech.

ORCHIDS.—New, Rare, Cheap.—Imported and Established. CATALOGUE just published, post-free on application. FRED. HORSMAN AND CO., Colchester.

Dutch and other Bulbs.

E. H. KRELAGE AND SON'S superior Dutch, Cape, and all other Exotic Bulbs and Plants, cheap, guaranteed true to name, free delivery, Novelties, &c., see New Illustrated Descriptive BULB CATALOGUE (463), revised and enlarged to 100 pages, which will be sent free on application to E. H. KRELAGE AND SON (Nurserymen to the Royal Netherlands Court, and to H.R.H. the Grand Duke of Luxembourg), Bloemhof Nurseries, Haarlem, Holland.

Prize Cob Filberts.

MR. COOPER, Western Elms, Reading (late of Calcot Gardens), is the largest grower of Prize Cob Filberts in the Kingdom; 20,000 fine young Trees now ready for Sale. Pamphlets and Price Lists on Application.

LOVELS' YORKSHIRE STRAWBERRIES.

25, 1s.; 100, 3s. 6d.; 1000, 25s. Carriage paid for Cash with Order. Descriptive LIST free.

W. LOVEL AND SON, Strawberry Growers, Driffield.

LARGE PALMS.—Two LATANIA BORBONICA in tubs, with sixteen to eighteen fronds, 12 to 14 feet across, and about 14 feet high, including tub; One PHENIX DACTYLIFERA, eighteen to twenty fronds, about 15 feet high, including tub; Two KENTIAS, in 15-inch pots, about 4½ feet high, and 5½ feet across. For prices apply to GARAWAY AND CO., Dardham Down Nurseries, Clifton, Bristol.

To the Trade.

IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order.

E. D. SHUTTLEWORTH AND CO., LTD.,

Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our specialty—really good stuff grown for the Trade.

HORTICULTURAL SHADINGS, NETTINGS, TIFFANY, WADDINGS, COTTON WOOL for Packing Flowers, CANVAS, TWINES, &c., manufactured and supplied wholesale by JOSEPH COOKSON, 21, New Cannon Street, Manchester.

GISHURST COMPOUND, used since 1859 for Red Spider, Mildew, Thrips, Greenfly, and other blight; 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake, for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

J. WEEKS & Co., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings, Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers.

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Stanmore.
(Entrance opposite Mr. Butt's Farm.)
CLEARANCE SALE.

MESSRS. PROTHEROE & MORRIS will **SELL** by AUCTION on the Premises, Stanmore Park Gardens, Stanmore, a quarter of a mile from Stanmore Station, L. & N.W. Railway, on **MONDAY NEXT**, October 16, at 12 o'clock, by order of Mr. Morle, a large quantity of well-grown **GREENHOUSE, HERBACEOUS**, and other **PLANTS**, consisting of 2000 Roses, Hybrid Perpetuals, and Teas; 1000 Cyclamen, 1500 Lilium Harrisii, and candidum; 100 half specimen Palms, 150 Azalea indica and mollis, in 32-pots; five specimen Eucharis, two plants of Anthurium Wardii, Crotons, Callas, Bouvardias, Primulas, Camellias, Ferns, Tuberoses, Heaths, Aspidistras, Climbers of sorts, and many other plants; magnificent Standard Bay Trees, a quantity of new Lights and Frames, Capital Florist's Market Van and Effects.

May be viewed Saturday prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Woking, Surrey.

About a mile and a half from Woking Railway Station. **TWO DAYS' SALE** of thriving **NURSERY STOCK**, which has been carefully prepared for removal, by order of Mr. R. Collyer.

MESSRS. PROTHEROE & MORRIS will **SELL** by AUCTION, on the Premises, the Cart House Lane Nurseries, Woking, on **MONDAY** and **TUESDAY NEXT**, October 16 and 17, at 12 o'clock each day, 1506 Scotch FIRS, 1½ to 6 feet; 2000 Spruce FIRS, 1½ to 5 feet; 500 Border SHUBS, 2½ to 6 feet, beautifully grown, many of them fine specimens; very fine Standards of Water's Golden and other Variegated HOLLIES; 4000 CONIFERS, of sorts, in various sizes; 1000 RHODODENDRONS; 9000 BOX PRIVET, and LAURELS; 3000 Flowering SHRUBS; Standard Ornamental TREES; 1000 Silver BIRCH, 10 to 15 feet; PLANES, LIMES, &c.; 1000 Paul's Double Scarlet THORN, Standards and Pyramids; 6300 strong QUICK, 2 to 4 feet; 2000 Irish IVIES, staked; 2000 Standard and Pyramid FRUIT TREES, Apples, Pears, and Plums; and other Nursery Stock, fully described in Catalogue.

The Lots may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

West Drayton.

ENORMOUS SALE OF FRUIT-TREES.

Splendidly grown, and fit for immediate Planting. Important to Market Gardeners, Fruit Growers, and Nurserymen.

NINTH ANNUAL SALE.

MESSRS. PROTHEROE & MORRIS are instructed by Messrs. J. Smith & Son to **SELL** by AUCTION, on the Premises, The Nurseries, West Drayton, Middlesex (ten minutes' walk from West Drayton Station, G.W.Ry.), on **TUESDAY** and **WEDNESDAY**, October 31 and Nov. 1, at 12 o'clock precisely each day—

62,000 FRUIT TREES,

Specially grown for Market Gardeners, Fruit Growers, &c., and comprising the best and most profitable Market Sorts, including—

24,000 **HALF-STANDARD APPLES**, Consisting of Smith's Improved Keswick Codlin, Early Julien, Warner's King, Wellington, Yellow Ingestrie, Bramley's Seedling, Pott's Seedling, Duchess of Gloucester or Duchess Favourite, Reynolds's Pippin, Duchess of Oldenburgh, Worcester Pearmain, Lord Derby, Lady Sudeley, Lord Suffield, Mr. Gladstone, Keswick Codlin, Eokingville Seedling, Stirling Castle, &c. 820 **STANDARD APPLES** of sorts.

200 **Half-Standard CHERRIES.** 300 Bush **MORELLO CHERRIES.**

25,000 **HALF-STANDARD PLUMS**, Comprising Victoria, Blue Gage, Grand Duke, Pershore, Rivers' Early Prolific, Czar, Sultan, New Orleans, Cox's Emperor, Gisborne, Pond's Seedling, Autumn Compote, White Magnum Bonum, &c.

4000 **STANDARD PLUMS,**

Including Victoria, Gisborne, Prince of Wales, Pershore, and others.

3580 **HALF-STANDARD PEARS,**

amongst them Brown Beurre, Pitmaston Duchess, Late Windsor, and Hessel.

4600 **CLUSTER DAMSONS**, Standards and Half-Standards.

40,000 **CURRENTS**, Black Naples.

30,000 " " Red Cluster.

2,000 **GOOSEBERRIES**, Lancashire Lad.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, of Messrs. J. SMITH AND SON; SIPSON, Harmondsworth, Slough; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The Auctioneers desire to call special attention to this unusually important Sale, as it is so seldom such an opportunity presents itself for securing well-grown Fruit Trees in large quantities and of such sorts as Messrs. Smith & Son find from their long and extensive experience to be best adapted for Market Purposes. Messrs. Protheroe & Morris can with confidence recommend intending purchasers to attend the Sale, as the catalogue comprises the most extensive and finest lot of Fruit Trees they have ever had the pleasure of offering by Auction.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.

5000 **LOTS SOLD WEEKLY.**

MESSRS. PROTHEROE & MORRIS will **SELL** by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class **HYACINTHS, TULIPS, CROCUS, NARCISSUS** and other **BULBS** from Holland; also **ROMAN HYACINTHS, LILIAM CANDIDUM** and other bulbs for early forcing, allotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

Hextable, near Swanley Junction, Kent.

(About 20 minutes' walk from Swanley Junction Station). **ABSOLUTE CLEARANCE SALE** of the whole of the extensive and valuable Collection of **ESTABLISHED ORCHIDS, CHRYSANTHEMUMS**, and other **PLANTS**, also the **LEASE** of the **NURSERY**, by order of Messrs. Pitcher & Manda, who are giving up the European Branch, in order to devote their entire attention to their American Nursery. The whole for Sale positively without the slightest reserve.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Messrs. Pitcher & Manda, to **SELL** by AUCTION, on the Premises, The United States Nursery, Hextable, near Swanley Junction Station, on **TUESDAY**, October 24, and **FOLLOWING DAYS**, at half-past 12 o'clock precisely, absolutely without reserve, the whole of the valuable, extensive, and well-grown collection of

ESTABLISHED ORCHIDS,

comprising about

1500 **CYPRIPEDIUMS,**

many of them choice and rare varieties, and forming one of the best stocks in the Trade, including—

C. Arnoldianum, very rare	C. Amesianum
C. Bergenianum	C. Arthurianum, several
C. Bartlett	C. calanthum, several
C. cneliense	C. Gadsellianum superbum
C. Chas. Canham	C. grande atratum
C. Leeannum superbum, several	C. Harrisonianum superbum
C. leucorrhodum, several	C. Niobe, Short Hill variety
C. Morganian, 12 plants	C. pavonum, several
C. macropterum	C. orphanum
C. Schrodere splendens	C. Spicerianum

CYPRIPEDIUM INSGNIS, in extra fine varieties, possibly the best in the country.

200 fine hybrid Seedling **CYPRIPEDIUMS**, unflowered.

3000 **CATTLEYAS** and **LELIAS**, amongst them *Cattleya Trianae* alba (true).

Cattleya Trianae Smithae, the darkest variety; *Cattleya* species (new), not yet flowered; *Cattleya labiata* Gravesiana, C. Mendeli, Mossiae, and speciosissima; *Laelia autumnalis* alba (true), L. a. Forstermanni, L. purpurata, grand varieties; L. albida sulphurea, L. Eyermannii.

ODONTOGLOSSUM CRISPUM,

splendid variety, established; also semi-established and imported plants. *Odontoglossum luteo-purpureum*, Harry-anum, *Vexillarium* (quantity), *Rosii majus*, *Inseleyi Leopardium*, *tigrinum*, &c.; *Oclogyne cristata* alba (several).

CYMBIDIUM LOWIANUM MANDAIANUM (pure yellow), **SOBRALIA XANTHOLEUCA.**

SOBRALIA, PRINCESS MAY (New).

MASDEVALLIAS, a fine collection; **TRICHOPIA LAUVIS**, **DENDROBIUM NOBILE NOBILIUS** and **COOKSONI** (several), **D. NOBILE SANDERIANA**.

DENDROBIUM REBLINGIANUM, new hybrid, the entire stock in England.

DENDROBIUM AINSWORTHII, &c.

An unusually fine collection of over

2000 **CHRYSANTHEMUMS,**

a special feature at this Nursery, grown for exhibition blooms, and including many new Seedlings.

A good lot of **Rare NEPENTHES** and **SARRACENIAS.**

A large quantity of **ADIANTUM CUNEATUM VARIEGATUM** (New), and many other plants.

Bay Cob, Light Cart, Van, quantity of Lights and Frames, Flower Pots, Erection of Office, Office Furniture, and the whole of the **UTENSILS** in Trade. Also the **LEASE** of the **NURSERY** (ten years unexpired), including eight Greenhouses, heated by 2270 feet of hot-water piping; Stabling and Sheds. Held at the extremely low rental of £20 per annum.

May be viewed one week prior to Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call particular attention to this important Sale, comprising, as it does, such a large number of rare and valuable **CYPRIPEDIUMS** and other **ORCHIDS**, the whole for absolute Sale without the least reserve.

Tottenham.

GREAT ANNUAL SALE of immense quantities of **NURSERY STOCK**, by order of Mr. T. S. Ware.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will conduct the above important **ANNUAL SALE**, on **TUESDAY**, November 7, at 11 o'clock, when, amongst large quantities of other Stock, the following items will be mentioned:—

25,000 **NAMED CARNATIONS** and **PICOTEES.**
10,000 **HAR MAJESTY'S PINKS.**
5,000 **NEW CARNATIONS.**
20,000 **HOLLYHOCKS.**

250,000 **BERLIN CROWNS LILY OF THE VALLEY.**
100,000 **SEAKALE, ASPARAGUS, and RHUBARB**, a great feature at this Nursery, &c.

Fuller particulars will appear.

Uxbridge.—Expiration of Lease

Important TWO DAYS' CLEARANCE SALE of about 4 Acres of **NURSERY STOCK** by order of Mr. Charles Turner, in consequence of the Lease of this portion of the Land being about to expire.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nurseries, Uxbridge, on **MONDAY** and **TUESDAY**, November 13 and 14, at 12 o'clock, the whole of the unusually well-grown **NURSERY STOCK** on this portion of the Land, comprising Limes, Chestnuts, and other fine **Avenue Trees**; *Acubas*, *Laurels*, *Yews*, *Hollies*, and a large assortment of splendidly-grown **Conifers**.

Further particulars will appear.

Tuesday and Wednesday Next.

THE LANGFORD PARK COLLECTION OF ORCHIDS.

Collected regardless of expense, in superb condition, and comprising exceedingly well grown **ODONTOGLOSSUM ALEXANDRE**, best type, mostly unflowered, and many marked varieties; **CATTLEYAS**, **MASDEVALLIAS**, **DISA GRANDIFLORA**, **LELIA ANCEPS ALBA**, with spikes; **SOBRALIA VIRGINALIS**, **DENDROBES** in variety; **CYPRIPEDIUMS**, **VANDAS**, and many choice species of **ANGRECEUMS**, in spikes, too numerous to mention.

MESSRS. PROTHEROE AND MORRIS have received instruction to **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **TUESDAY** and **WEDNESDAY NEXT**, October 17 and 18, at half-past 12 o'clock each day.

On view morning of Sale, and Catalogues had.

Sunningdale (close to the Railway Station).

THREE DAYS' ABSOLUTE CLEARANCE SALE of beautifully-grown **NURSERY STOCK**, the whole in splendid condition for removal. Important to those extensively engaged in planting.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on **MONDAY**, October 23, and **TWO FOLLOWING DAYS**, at 12 o'clock precisely each day, by order of Mr. C. Noble, a fine lot of Bush and Standard **RHODODENDRONS**, various sizes, choice named kinds; also Hybrid Seedlings and Ponticum; well-budded **AZALEAS**, many thousands of **CONIFERS**, from 2 to 8 feet, all in first-class order for making evergreen hedges, blinds, screens, and general planting; several thousands of young and vigorous Standard and Bush **FRUIT TREES**, Red, Black, and White **CURRENTS**, a good selection of Flowering and Ornamental **SHRUBS**, from 2 to 7 feet, allotted to suit all buyers, several thousands of Oval-leaved **PRIVET** and **LAURELS**, from 1 to 5 feet, and other **STOCK**.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Hollamby's Nurseries, Groombridge, Tunbridge Wells.

GREAT UNRESERVED SALE of valuable **NURSERY STOCK**, all recently transplanted, and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the premises as above, by order of Mr. Edwin Hollamby, on **THURSDAY** and **FRIDAY**, October 26 and 27, at 12 o'clock each day, 350,000 **CONIFERS**, Climbing, Dwarf, and other **ROSES**, **LARCH**, and Scotch **FIRS**, **ASH**, Spanish **CHESTNUTS**, strong transplanted **QUICK**, named and other **RHODODENDRONS**, **AZALEAS**, **CARNATIONS**, hardy climbers; extra strong **SEAKALE** for forcing, &c.

May be viewed any day prior to Sale. Catalogues may be had at the Nurseries, and of the Auctioneers and Valuers, 67, and 68, Cheapside, London, E.C.

Toddington Nurseries, near Winchcomb,

GLOUCESTERSHIRE.

GREAT SALE of **NURSERY STOCK**, by order of the Toddington Orchard Company, Ltd., in Liquidation, comprising large quantities of **FRUIT** and **FOREST TREES**, **SHRUBS**, &c., also **PEACH TREES**, **CARNATIONS**, **PERNS**, and **ROSES**, all in pots.

The **Fruit Trees** include Standard and Half-standard, and Bush **Apple** and **Pears** of leading sorts, **Gisborne** and **Pershore** feathered **Plum Trees**, **Black** and **Red Currents**.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, on the Premises, The Nurseries, Toddington, near Winchcomb, on **WEDNESDAY**, November 8, at 1 o'clock precisely.

May be viewed one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

West Dulwich.

Near Dulwich Station, L. C. and D. Railway, and Gipsy Hill, L. B. and S. C. Railway.

CLEARANCE SALE of **GLASS ERECTIONS** and **PLANTS**, by order of H. Sutherland, Esq., who has sold the residence, and is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, Lyndhurst, 29, Alley Park, West Dulwich, on **MONDAY**, October 23, at 1 o'clock precisely, the **ERECTIONS** of Four **GREENHOUSES**, **PITS**, **HOT-WATER PIPING**; also the whole of the well-grown **STOVE** and **GREENHOUSE PLANTS**, a splendid lot of Maidenhair **FERNS**, Summer house, Garden Tools, and Effects.

May be viewed Friday and Saturday prior to the Sale. Catalogues had on the premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.—Imported Orchids.

400 **PHALANOPSIS GRANDIFLORA AUREA.**

5 cases of **CYPRIPEDIUM NIVEUM.**

1 case of **CYMBIDIUM MEASURESIANUM.**

From Messrs. Walter Kemsley & Co., for Unreserved Sale.

Two cases of **LELIA PURPURATA**, fine masses.

A consignment of **LELIA ALBIDA.**

Also 200 lots of **ESTABLISHED ORCHIDS** from various sources.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY NEXT**, October 20, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

Monday Next.

200 AZALEA INDICA and MOLLIS, 100 PALMS, DRACENAS, and FICUS from Belgium, fine healthy plants; also English-grown LILIES, NARCISSI, IRIS, FREESIAS, new CARNATIONS, CALLAS, CANNAS, PINKS, CLEMATIS, IVIES, ROSES, 40 lots of Greenhouse FERNS, TEA ROSES in pots, HARDY BULBS, PLANTS, &c.

MESSRS. PROTHEROE and MORRIS will sell the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, October 16, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.**IMPORTANT UNRESERVED SALE.**

9200 LILUM AURATUM
1500 " SPECIOSUM RUBRUM
500 " ALBUM
1800 " KRAMERI
900 " ELEGANS, best red
600 " LONGIFLORUM

Splendid bulbs, being the contents of 150 cases just arrived from Japan, the first consignment of the season.

3000 LILUM HARRISII from Bermuda
1600 " COLCHICUM (SZOVITZIANUM), received direct.

100,000 PALM SEEDS,

direct from Brazil, consisting of 52,000 LATANIA BORBONICA, 3000 ARECAS, 18,000 GEONOMAS, and about 27,000 other PALM SEEDS.

400 AZALEA MOLLIS**150 " INDICA,**

RHODODENDRONS, ASPIDSTRAS, PALMS, and OTHER PLANTS from Belgium.

30,000 BERLIN CROWNS LILY OF THE VALLEY, received direct, and 100 lots of special HYACINTHS, TULIPS, and other DUTCH BULBS, all first-class roots; also a large assortment of CARNATIONS, NARCISSUS, and various HARDY BULBS.

MESSRS. PROTHEROE and MORRIS will sell the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, October 19, at 12 o'clock.

On view morning of Sale, and Catalogues had.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Monday Next.

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, October 16, a Grand Importation of BULBS, from Mr. H. Homan, of Noordwijld, Holland.

Tuesday Next.**SPECIAL SALE OF DUTCH BULBS.**

MR. J. C. STEVENS will sell by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 17, at half-past 12 o'clock precisely, a fine CONSIGNMENT of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, from reliable Growers in Holland, and specially lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

Wednesday Next.

50,000 Berlin LILY OF THE VALLEY Crowns, just received; 20,000 fine BULBS of LILUM HARRISII from Bermuda, 5000 African TUBEROSES, 1000 SPIRÆA JAPONICA, 30,000 SCILLA SIBERICA, 100,000 Early White ROMAN HYACINTHS, &c., from France; 5000 LILUM CANDIDUM, fine Collection of CARNATIONS, PINKS, PICOTEES, VIOLETS, &c.; 300 well grown ROSES, GLADIOLI, ANEMONES, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 18.

On view morning of Sale, and Catalogues had.

Thursday, October 26.**SPECIAL SALE OF ORCHIDS.**

MR. J. C. STEVENS begs to announce that he will hold a SPECIAL SALE of Orchids at his great Rooms, 38, King Street, Covent Garden, on THURSDAY, OCTOBER 26, and will be glad to RECEIVE LISTS and Particulars for Advertisements not later than THURSDAY NEXT.

Sales at Birmingham.

MESSRS. JAMES and BAXTER hold SALES at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—

EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.

EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other Bulbs.

EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THURSDAY, at 11.30 A.M.—Azaleas, Camellias, Palms, Dracenas, and other Plants from Belgium; Roses, General Nursery Stock, Carnations, Dutch and French Bulbs.

EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut Flowers. EVERY THIRD THURSDAY, at 12 o'clock.—Established and Imported Orchids.

All Catalogues post free.

Messrs. JAMES and BAXTER conduct Sales and Valuations of Nursery Stock, Live and Dead Farming Stock, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

Wednesday Next.

MESSRS. JAMES and BAXTER will sell by AUCTION, at their Sale Rooms, 12, Bull Ring, Birmingham, on WEDNESDAY NEXT, October 18, at 12 o'clock, a large and varied Collection of ESTABLISHED and IMPORTED ORCHIDS, by order of Messrs. F. Sander & Co., St. Albans. Catalogues post-free. Commissions carefully executed, and purchases despatched.

Moxhull Hall, Erdington, near Birmingham.

MESSRS. JAMES and BAXTER are instructed by Henry Fisher, Esq., J.P. (who is shortly leaving the neighbourhood), to sell by AUCTION, without reserve, on the premises, The Gardens, Moxhull Hall, Erdington, on WEDNESDAY, October 25, 1893, at 12 o'clock, the very fine Collection of ORCHIDS, SPECIMEN PALMS, STOVE and GREENHOUSE PLANTS.

Catalogues may be obtained from Mr. DAVIES, the Head Gardener, on the Premises; and of the Auctioneers, 12, Bull Ring, Birmingham.

Milford Nurseries, Milford, near Godalming, Surrey.

ANNUAL SALE.

Highly important FOUR DAYS' SALE of first-class NURSERY STOCK.

MESSRS. MELLERSH have received instructions from Messrs. Maurice Young & Son to sell by AUCTION, on the Premises, the Milford Nurseries, Milford, near Godalming, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, October 17, 18, 19, and 20, at 11 for 12 o'clock each day, without reserve, a large quantity of exceptionally well-grown NURSERY STOCK, lotted to suit all classes of buyers, comprising 2500 Specimen Evergreens and Conifers from 2 to 8 feet, consisting of Piceas, Abies, Pinus, Cupressus Lawsoniana, Fraserii, Erectas, Youngii, Coruella, &c.; Thuja, Cedrus deodara, Aucubas, Laurels, Hollies, Golden Junipers, Golden Yews, &c.; 2500 English Yews (1½ to 3 feet), 200 Standard Rhododendrons, with good heads; a large quantity of Named, Hybrid, and other Rhododendrons (1 to 3 feet); Azalea mollis and pontica, Green Hollies (1 to 3 feet), hardy Heaths, several thousand Standard, Pyramid, and Trained Fruit Trees, Standard and Pyramid Thorns, Flowering Crabs, Ornamental Deciduous Trees, &c.; Standard and Dwarf Roses of the leading kinds, Tea Roses in pots, Clematis, Ivies, Ampelopsis, Honeysuckle, Passion Flower, &c.; 150 large Specimen Standard Hollies, and a quantity of General Nursery Stock.

Messrs. MELLERSH, Auctioneers and Surveyors, Godalming and Guildford.

Great Doods, Reigate, Surrey.

Preliminary Announcement.

To ROSE GROWERS, HORTICULTURISTS, and Others.

MESSRS. JOHN LEES and BURCHELL are instructed to sell by AUCTION, on the Premises, early in November, the important Stock of about 1000 EXHIBITION ROSE TREES, established by the late A. J. Waterlow, Esq., for many years one of the most successful exhibitors of Roses at the Crystal Palace and other Shows. Also STOVE and GREENHOUSE PLANTS, SPECIMEN FERNS, FRUITING VINES, STRAWBERRY PLANTS, SHRUBS, &c. Offices—

17, Wool Exchange, London, E.C.; and Reigate, Surrey.

FREEHOLD.—TO BE LET, or SOLD,

HOUSE and 2 Acres of LAND, between Weybridge, Addlestone, and Cherry. A good opportunity for a Nursery Florist or Market Grower. Three quarters of a mile from two stations, with a population of 16,000. Apply to—
W. DALE, Addlestone Moor, near Weybridge, Surrey.

To Fruiterers and Greengrocers.

THE LEADING RETAIL BUSINESS in one of the best South Coast Watering-places IS FOR DISPOSAL, in consequence of the death of Owner. Returns over £3000. First-class Premises opposite Town Hall, leased at £170 a year. Certain supply from 30 acres of Garden. Horses and Vans at valuation.

For full particulars and price apply to W. DAY AND SONS, Estate Agents and Valuers, Maidstone.

LONDON, S.W., in main Thoroughfare, close to Station. FOR SALE, through ill-health, the LEASE of a prominent FLORIST'S SHOP, beautifully fitted up, and nine-roomed Residence, with garden, at back, together with the Good Will. Good Trade attached. Lease sixty-nine years. Low Rent, £35.—X. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a good ROCHFORD CONICAL and other BOILERS, Slate and Iron TANKS, a quantity of 2, 3, and 4-inch ELBOW SYPHONS and VALVES, &c., MARKET VANS, and useful articles. Must be cleared. Apply by letter first to J. LANCASTER, Barnett Cottage, Leytonstone, E.

FOR ORCHIDS and GARDENERS

to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World—30 minutes from St. Pancras.

FOR SALE, Souvenir de Malmaison CARNATION LAYERS, well-rooted, 500 Germania, good strong layers, out of pots, all at 30s. per 100; or 4s. per dozen. J. LITTON, Grosvenor Cottage, Bath.

Plants Shipped to all Parts.

WATSON and SCULL, 90, Lower Thames Street, London, E.C., give special attention to the reception and forwarding of Plants and Botanical Specimens to and from all parts of the World. Be particular, and have them consigned to our Care, and save Expense and Delay.

Dealers in Virgin Cork, Raffia, Bamboo Canes, Garden Sticks, Palm Seeds, &c.

ORCHIDS of every Description from 1s. each. Hundreds of varieties at 2s. Rare Plants at low Prices. Specimens sent on approbation. Satisfaction guaranteed. Catalogue free.—The Leeds Orchid Co., Roundhay, Leeds.

DOUBLE WHITE NARCISSUS.—Splendid strain, 17s. 6d. per 1000, on rail. Sample 50 free by post for 1s. 9d.; 100 for 3s. Cash in all cases with order.

J. J. CLARK, Goldstone, Brighton.

EXHIBITIONS.**KENT COUNTY CHRYSANTHEMUM SOCIETY.**

THE SIXTH GRAND EXHIBITION of CHRYSANTHEMUMS and other FLOWERS and FRUIT, will be held at the RINK HALL, BLACKHEATH, on November 1 and 2, 1893. Over One Hundred Pounds in Prizes.—All particulars to

JOHN CARVILLE, F.R.H.S., Hon. Sec., 83, St. John's Road, Lewisham High Road, S.E.

CRYSTAL PALACE.

ANNUAL CHRYSANTHEMUM SHOW, FRIDAY and SATURDAY, November 3 and 4.

For Entry Forms and Schedules, apply to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close Friday, October 27.

THE TIVERTON CHRYSANTHEMUM SOCIETY

will hold their NEXT SHOW of FRUIT and FLOWERS on THURSDAY, November 9.

R. P. COSWAY, Hon. Sec.

SCOTTISH HORTICULTURAL ASSOCIATION.

GRAND CHRYSANTHEMUM SHOW, to be Held in WAVERLEY MARKET, November 16, 17, and 18. NEARLY FIVE—HUNDRED POUNDS IN PRIZES.

Schedules and all information from the Secretary—17, South Frederick St., Edinburgh. ROBERT LAIRD.

THE WEST OF ENGLAND CHRYSANTHEMUM SOCIETY.

The ANNUAL EXHIBITION will be Held in

THE GUILDHALL, PLYMOUTH, on November 14 and 15. Over £150 in Prizes.

£33 for 24 Japanese, 24 Incurves, and other Valuable Prizes.

For Schedules, apply—

Messrs. WILSON and DAMERELL, Hon. Secs., 4, North Hill, Plymouth.

To Gardeners and Others.

WANTED, OFFERS OF WOOD, in Rough state, suitable for Cutting-making, of the following:—

Laurustinus, Silver and Golden Euonymus, also Green; Laurels of sorts, Oval-leaved Privet, Gum Cistus, Aucubas, Escallonia, Ivy Maderensis variegata, Gold-n Oval-leaved Privet, Veronica gracilis, V. Andersoni variegata, V. glauca, V. imbricatis.

COLIN KILMISTER, Maudlin Nursery, Steyning, Sussex.

C. AND J. TUFFIN are now largely extending their Commission Business in Choice Cut Flowers.

Intending senders can have boxes and labels as desired.—4, Cross Court, Catherine St. W.C. & Covent Garden Market.

Covent Garden Market.

CHAS. E. COOPER, WHOLESALE FLORIST and COMMISSION SALESMAN, 31, Russell Street, Covent Garden, and 370, New Flower Market, W.C., is open to receive consignments of choice Cut Flowers, Ferns, Foliage, &c. Also the Provincial Trade supplied at market prices. For terms and further particulars, apply as above. Price List on application. Telegrams, "LAPAGERIA, London." Bankers, The National Bank, Limited, Charing Cross Branch.

CARNATIONS.—Strong-rooted Layers of Ruby Castle, 25s. per 100; dozen, 4s. Old Crim-on Clove (very fine stock), 20s. per 100; dozen, 3s. "LOADSTONE" and HELEN JULIET, the Lady Florists, School of Gardening, Hemel Hempstead, Herts.

PEACHES and NECTARINES, Standard and Dwarf-trained Trees, well ripened Heads, fibrous Roots, CHERRIES, stout Standards, fruiting Ferns. All kinds of FRUIT and ROSE TREES, Wholesale and Retail.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

PALMS, FERNS, &c.—FERNS in Variety.—ARALIAS and CYPERUS NATALENSIS in 4½s, 6s. per dozen; LARGE A. CUNEATUM in 4½s, 6s. and 7s. per dozen; PALMS in variety, and FICUS in 4½s, 12s. per dozen; PALMS, fine stuff, in large 6½s, 5s. per dozen; FERNS and CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order.

LANE and MARTIN, 227, Brixton Road, London, S.W.

PERNS! FERNS!!—Trade.—Great Annual Sale. Surplus Stock. 200,000 Stove and Greenhouse in 2½-inch pots, 11s. per 100, 200 for 20s.; 10 best selling sorts in 5-inch pots, 5s. 6d. per dozen; strong seedling, 4s. 6d. per 100. Large A. cuneatum, very fine tops, value in fronds, 6s. and 8s. per dozen. Cyperus, Aralias, Greivellae, Solanums, 6s. per doz.; Palms, Ficus, and Dracenas, 1s. each. P. tremula, and A. cuneatum for making large plants quickly, 16s. and 20s. per 100. Packed free and put on rail for cash with order.—J. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

LILAC CHARLES X. and Virginalis, grown in pots, splendid plants, £4 to £5 per 100, finely grown, and covered with buds.

TREE PEONY.—20,000 plants (in all the best sorts), 12 sorts, our choice, true to name, well-grown grafts, from 1 yr., 16s.; 2 yr., £1 to £1 10s.; 3 or 4 yr., £1 9s. to £2.

HERBACEOUS PEONY.—Per 1000 (250 best sorts), 12 sorts, our choice, true to name, 8s., 10s., 20s. and more according to the novelty of the sorts: 100 in 50 or 100 sorts, our choice, £3 5s. to £4, according to the novelty; 1000 in 100 sorts, our choice, £15; 1000 without name, mixed, £15; 1000 White sorts, £30; 1000 Red or Pink, or Mixed colours, £18 to £20.

100,000 TEA-ROSES (Dwarf), grown in pots, strong plants, £2 to £2 8s. per 100.

100,000 TEA-ROSES (Dwarf), grown Outdoors, Grafted on Seedling Briars, strong plants, £2 to £2 8s. per 100. These lots comprise the largest and finest plants ever offered.

LEVÉQUE ET FILS, Nurserymen, 69, Rue de Liégat, Ivry-sur-Seine, near Paris.

Leeds Corporation.—To Gardeners, Nursermen, &c.
TENDERS WANTED for about 6000 TREES and SHRUBS, for Armley Park. Specification and quantities may be obtained at the City Engineer's Office. Tenders to be sent to the Town Clerk's Office, Town Hall, Leeds, endorsed "Trees for Armley Park," not later than October 19.

To Nurserymen.
THE STREATHAM BURIAL BOARD are prepared to receive TENDERS for the SUPPLY and PLANTING of TREES in their Cemetery at Garratt Lane, Tooting.

For forms of Tender apply to the Undersigned, to whom Tenders should be delivered not later than 12 o'clock noon on Thursday, the 19th inst. The Board do not bind themselves to accept the lowest or any Tender.

A. B. C. BELLAMY, Clerk to the Board,
 Vestry Offices, 8, Shrubby Road, Streatham, Oct. 12, 1893.

Poplar Union.—To Nurserymen.
THE Guardians of the Poor of the Poplar Union are desirous of receiving TENDERS for PREPARING BEDS in the WORKHOUSE YARDS, and PLANTING with TREES and SHRUBS. About 50 trees and 100 shrubs will be required.

Further particulars may be obtained on application to the Clerk of Works, at the Workhouse, High Street, Poplar, any day except Saturday, between 2 and 4 P.M.

The Tenders will be considered on Wednesday, Oct. 18, 1893.
 G. HERBERT LOUGH, Clerk to the Guardians.
 Union Offices, High Street, Poplar.

DOUBLE NEAPOLITAN VIOLETS.—Magnificent, fine large clumps, just coming into flower. Will flower all the winter; 12s. per dozen; 2nd size, 9s. per dozen; good clumps, 6s. per dozen; Czar ditto, half above prices. Cash.—FOREMAN, Stanmore Park Gardens, Stanmore.

FOR SALE, to make room, Four CYCAS REVOLUTA, one with 6-feet stem; one C. CIRINALIS, nice plants; and a few stock plants of NEPENTHES. Or will EXCHANGE for HARDY PLANTS.—GARDENER, Leonardslee, Hortham.

MARGUERITE CUTTINGS, from the open, following varieties:—Halleri maxima, Ceth of Gold, Etoile d'Or, and Etoile de Lyon, 3s. per 100, 25s. per 1000.
 BETHELL, Whiteley's Nurseries, Billington Heath, Uxbridge.

WHITE WATER-LILIES.—A quantity of the above for sale Cheap. Price per dozen or 100 on Application.—JOHN HOOPER, Seedsman and Florist, Chichester.

ASPARAGUS of fine quality.—For Forcing: 5-yr. old, splendid roots, 12s. 6d. per 100; 6-yr. old, extra fine selected, 15s. per 100. For planting: 3-yr. old, 25s. per 100; ditto, selected, 35s. per 100. All quotations are free on rail, and for cash with order. My Asparagus always makes the very top price at Covent Garden.
 J. J. CLARK, Market Gardener, Goldstone, Brighton.

VIOLETS.—Marie Louise, Comte Brazza, Double Neapolitan, Grand Clumps ready, Winter-blooming, 12s. per dozen; Czar, 6s. per dozen.
 "LOADSTONE" and HELEN JULIET, School of Gardening, Hemel Hempstead, Herts.

CARNATIONS.—Miss Joliffe Improved, best winter-blooming, flesh pink, fine bushy plants in 5-inch pots; also La Neige, best white. Price on application. Germania, best yellow, in 60's, fit for 48's or planting-out at once, 30s. per 100. Cash with order.
 CRANE AND CLARKE, The Nurseries, March, Cambs.

20 per Cent. Reduction.
STRONG STRAWBERRY PLANTS, in Pots, or as Runners, can now be supplied without delay at reduced prices, except new ones.
 GEORGE BUNYARD AND CO., Maidstone.

ALL GOODS DELIVERED FREE on board, London, Antwerp, Rotterdam. **£ s. d.**
 LILUM HARRISII, 5—7 in. circ., per 1000 bulbs. 6 5 0
 " " 7—9 in. " " " 11 10 0
 " " 9—11 in. " " " 22 10 0
 " AURATUM, 7—9 in. " " " 8 7 6
 " " 9—11 in. " " " 11 10 0
 TUBEROSES, Pearl, select 4—6½ in. " " 1 10 0
 " " seconds, 3—4 in. " " 1 2 6
 Prices for GLADIOLUS, &c., on application.
 F. W. O. SCHMITZ AND CO., Jersey City, N.J., U.S.A.

MILLER'S DAFFODILS, best and cheapest.
 —Single Daffodil (Lent Lily), 13s. 6d. per 1000, 1s. 6d.; 100; Pheasant's Eye (Poeticus), 13s. 6d. per 1000, 1s. 6d. per 100; Double Yellow Daffodils, 4s. per 100, 37s. 6d. per 1000, Biflorus, 15s. per 1000, 1s. 9d. per 100; Double Butter and Eggs, 35s. per 1000, 3s. 9d. per 100; Campanella Jonquils, 27s. 6d. per 1000, 3s. per 100; Mixed Daffodils, all sorts, 17s. 6d. per 1000, 2s. per 100; Mixed Poly. Narcissus, all colours, 50s. per 1000, 5s. 6d. per 100. Cash orders, 10s. upwards, free. Bulb Catalogue free.
 F. MILLER AND CO., 267, Fulham Road, London, S.W.

Palms! Palms!! Palms!!!
J. W. SILVER, F.R.H.S., begs to call attention to his immense Stock of the above, in all sizes and best leading kinds, and offers, in large and well established clean and healthy plants, Phoenix rupicola, Kentia Belmorian, Fosteriana, and australis; Cocos Weddelliana, Geonoma gracilis, Corypha australis, Latania borbonica, Pthosperma Cunninghamii, Areca Baureii, and Scaevola elegans, in 3-inch pots, 4s. per dozen; in 5-inch pots, from 12s. to 21s. per dozen. Catalogues and Packing free. Most extraordinary value.—J. W. SILVER, F.R.H.S., Nurseryman, Seed, Bulb, and Plant Merchant, and Horticultural Sundriesman, Streatham and Norbury Nurseries, S.W.

ANTHONY WATERER

Invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted; the girth of the stem is taken at 4 feet from the ground:—

ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
 " WIERII LACINIATUM, 10 to 14 feet, girth 3 to 5 inches.
 " NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
 " REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
 " SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
 " WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
 BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
 BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
 CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
 CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
 " Double White, 14 to 16 feet, girth 6 to 8 inches.
 " Scarlet, 12 to 18 feet, girth 4 to 10 inches.
 " Brioti, 10 to 14 feet.
 ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
 " Guernsey, 16 to 18 feet, girth 7 to 9 inches.
 LINES, 12, 16, and 20 feet, girth 3 to 10 inches.
 " EUCHLORA or DASYSTYLA, 12 to 14 feet, girth 4 to 6 inches.
 " Silver-leaved (Tilia argentea), 12 to 14 feet, girth 5 to 6 inches.
 LIQUIDAMBAR, 6 to 10 feet.
 MAPLE, Norway, 12 to 16 feet.
 OAK, English, 12 to 14 feet, girth 4 to 5 inches.
 " Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
 POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
 SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
 " Purple, 14 to 16 feet, girth 6 to 7 inches.
 THORNS, Double Pink, 8 to 10 feet.
 " Paul's Scarlet, 8 to 10 feet.
 " Double White, 8 to 10 feet.

WEeping TREES.
 BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
 " Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
 BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
 " Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
 ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
 LARCH, Weeping, Pyramids, 8 to 10 feet.
 Knap Hill Nursery, Woking, Surrey.

ENGLISH YEWS—ENGLISH YEWS FOR HEDGES.

ENGLISH YEWS, 2 to 2½ feet, at 9s. per dozen; 50s. per 100.
 " 2½ to 3 feet, at 12s. per dozen; 70s. per 100.
 " 3 to 4 feet, at 18s. per dozen; 120s. per 100.
 " 4 to 5 feet, at 30s. per dozen; 200s. per 100.
 " 5 to 6 feet, at 42s. per dozen.
 Every plant a perfect specimen. Excellent roots.
 Special quotation for large quantities.

JOHN PERKINS & SON,
 52, MARKET SQUARE, NORTHAMPTON.
 Nurseries, BILLING ROAD.

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That will bear regularly, purchase Apples worked upon our Paradise Stock. We have 70,000 to select from, and shall be pleased to show them to visitors.

TRAINED TREES A SPECIALTY.

J. R. PEARSON & SONS,
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 ESTABLISHED 1782.



CUTBUSH'S MILL—
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 —Everyone can readily grow Mushrooms, and by using this Spawn will ensure success. All growers speak in high praise of the quality. Numerous Testimonials. None genuine unless in sealed packages, and printed cultural directions enclosed with our signature attached.
 Price, 6s. per bushel, 1s. extra for package; or, 1s. per cake, free per Parcel Post.

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SPECIAL CULTURE OF FRUIT TREES AND ROSES.

A LARGE AND SELECT STOCK IS NOW OFFERED FOR SALE.

The Illustrated and Descriptive Catalogue of Fruits, post-free, 3d.

The Descriptive Catalogue of Roses, post-free.

THOMAS RIVERS & SON,
 THE NURSERIES,
 SAWBRIDGEWORTH, HERTS.



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COLLECTIONS OF BULBS

CONSIST OF THE FINEST SELECTED

HYACINTHS, TULIPS, CROCUS, LILIES, SNOW-DROPS, Etc.

Prices, 5s., 7s. 6d., 10s. 6d., 15s., 21s., 42s., 63s., and 105s. each; Carriage Free.
FIVE PER CENT. DISCOUNT FOR CASH.

For full particulars of contents of these Boxes, and Lists of the Best Bulbs of the Season, see

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RAPESEED and AGRICULTURAL WHITE MUSTARD.
H. AND F. SHARPE have to offer fine samples of RAPESEED and WHITE MUSTARD, suitable for Field Culture. Special quotations and samples on application.
 SEED GROWING ESTABLISHMENT, WISBECH.

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WILLIAMS'	for	AZALEAS.
WILLIAMS'	for	CAMELLIAS.
WILLIAMS'	for	HEATHS.
WILLIAMS'	for	EPACRIS.
WILLIAMS'	for	BOUVARDIAS.
WILLIAMS'	for	SOLANUMS.
WILLIAMS'	for	CYCLAMENS.
WILLIAMS'	for	CARNATIONS.
WILLIAMS'	for	LILACS.

Williams' for all kinds of Winter-flowering Plants.

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B. S. WILLIAMS & SON,
 Victoria and Paradise Nurseries,
 UPPER HOLLOWAY, LONDON, N.

THE BEST BULBS

AT CHEAPEST RATES.

EXTENSIVE COLLECTIONS OF
 Hyacinths, Tulips,
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ALL THOROUGHLY RIPENED.
 Descriptive Catalogue, No. 428, Post Free on Application.
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DICKSONS CHESTER

Bulb Growers

CHRYSANTHEMUM EXHIBITION.

NORMAN DAVIS begs to intimate that his magnificent Exhibition of these popular flowers is now open, free of charge. No one interested in Chrysanthemums should fail to visit this, "the oldest and best trade show," (Open all Sundays in October for private inspection only.)

Notwithstanding the splendid Novelties distributed by me last season, and which are giving such unbounded satisfaction all over the country, I feel confident that the present season's Novelties will surpass all previous introductions. Scores of splendid Novelties in all fantastical shapes, and remarkable for their distinctness, are now opening.

CHRYSANTHEMUM NURSERIES, LILFORD ROAD (Near Loughborough Junction), CAMBERWELL, LONDON, S.E.

N.B.—500 Plants of the New "GOLDEN VIVIAND MOREL," and almost as many "WILLIAM SEWARD," are alone worth a visit.

F. V. RASPAIL GERANIUM.—Strong-rooted Cuttings, £2 10s. per 1000, or 6s. per 100. Cash with order.—P. BOULTON, Beechenlea Nursery, Swanley.

Important to Mushroom Growers.

CUTHBERT'S SPECIALITE MUSHROOM SPAWN. Always alike; most productive. Hundreds of testimonials. Per bushel, 5s. R. AND G. CUTHBERT, Seed, Bulb, and Plant Merchant, Southgate, N. Established 1797.

ON SALE, under value, Fifty choice CHRYSANTHEMUM PLANTS, in 10-inch pots; prime condition; height, 3 to 5 feet. Also 700 strong-rooted GERANIUM CUTTINGS.—Apply—"LADY," Bryn-Llewelyn, Festiniog, N. Wales.



For Market and Private Growers. ORNAMENTAL TREES, SHRUBS, ETC.
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DUTCH BULBS!
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See our Special Wholesale CATALOGUE of BULBS. Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILIUMS, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,
SEED AND BULB MERCHANTS.
EXETER STREET, STRAND, LONDON, W.C.

NO MORE LONG PRICES
FOR BULBS ONLY
FINEST QUALITY.
J.R. PEARSON & SONS
CHILWELL NURSERIES
NOTTS

TO NOBLEMEN'S GARDENERS, or where "Spring Bedding" is carried out on a large scale.—We have a grand lot of Plants of every kind, specially prepared and transplanted: 100 assorted plants, as sample, 10s.; or, 500 for £2 2s. 6d. Carriage paid. Price LISTS free. "LOADSTONE" AND HELEN JULIET (the Lady Florists), School of Gardening, Hemel Hempstead, Herts.

Old-Fashioned and Garden Roses.

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(ROLFE, N. SP.)

Exhibited and unanimously awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, and pronounced by every one to be the most beautiful and charming *Cypripedium* introduced, causing quite a sensation at the Drill Hall, on Tuesday, September 26, 1893.

The special feature of this novelty is the dorsal sepal, which is quite distinct in appearance and colour to any other known *Cypripedium*, which will render it exceptionally valuable to the hybridist.

The *Gardeners' Chronicle* says:—"There was a more than usually interesting show of Orchids, but by far the most novel and beautiful exhibit was a plant of *Cypripedium Charlesworthii*, Rolfe, n. sp., First-class Certificate, an entirely new species, imported by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and exhibited by them for the first time, the exhibit coming in for a great amount of attention and admiration. The plant in growth somewhat resembles *C. Spicerianum*, and the flowers, which are borne on scapes about 3 inches in height, are unlike any other known species. The beautiful flat, upper sepal is $2\frac{1}{2}$ inches wide, broadly orbicular, white, tinged, and veined over its surface with light rosy-purple; the apex alone showing a white marbling. The lower sepals are about 1 inch broad, greenish-white. The petals, which resemble those of *C. insigne*, are plain-edged, over $1\frac{1}{2}$ inch long, yellowish, tinged with brown; the lip also somewhat resembles that of the *Sylhet* form of *C. insigne*, and is similar in colour to the petals. The staminode is very singular, resembling pure white porcelain, the protuberance in the centre being conical in form, and not a single spur, as in *C. insigne*. It is an extraordinary and beautiful species."

The *Garden* says:—"A First-class Certificate awarded to *Cypripedium Charlesworthii*, Rolfe, a distinct and decidedly novel species, which cannot be compared with any that we can call to mind. The plant is of dwarf habit, the flowers each having a remarkably fine dorsal sepal, extra large, measuring about $2\frac{1}{2}$ inches each way; the colour a pale pink, suffused with purple, and having a lighter network towards the extremities; the petals are shaded with greenish-brown, so also is the pouch, which is rather small. A greater novelty amongst the species of the Slipper family has not been seen for a long time. From Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford."

The *Journal of Horticulture* says:—"A very remarkable introduction from the East Indies; it is a distinct and beautiful species, very dwarf, with long narrow leaves. The flower stem is only 3 to 4 inches long; the lip is short, green, heavily suffused with bronzy-brown, and the dorsal sepal is very noteworthy—it is broad and rounded, and the colouring is a beautiful soft rose, delicately veined; the staminode is pure white. A feature of the leafage are the rows of dots on the reverse side. The species is a great acquisition (First-class Certificate)."

The *Gardening World* says:—"An interesting collection of Orchids was exhibited by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, including a handsome new species, named *Cypripedium Charlesworthii*, from the East Indies."

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THE
Gardeners' Chronicle.

SATURDAY, OCTOBER 14, 1893.

TRINITY GROVE.

TRINITY, unlike to Granton and Newhaven, is the residential marine suburb of Edinburgh. The road to Newhaven from Trinity is lined with walled-in residences, embosomed in trees. This close-surrounding of trees, so commonly seen in Edinburgh suburban residences, must be detrimental, one would think, to the health of the owners, for sunlight and free circulation of air, as necessary for human beings as for plants, are excluded by the thick umbrage. Long use has made the residents and their predecessors callous to their gloomy surroundings. Trinity Grove is quite a different place to its neighbours. There is a line of trees along the wall that bounds the pleasure grounds, to act as shelter from the east and north winds, otherwise it is open to every wind that blows, and the sunlight is freely admitted. It was formerly the sea-side residence of Mary, Queen of Scots, and an old Vine on the front of the house is said to have been planted by her own fair hands. As the selection of vegetables was very limited in those days, Nettle-tops were considered a great delicacy, and were grown in frames to prolong their season and improve the flavour. At the beginning of this century Trinity Grove was purchased by Ballantyne, the well-known publisher of the time. The title-deeds were signed by Sir Walter Scott, and are still in the hands of the present owner.

Sir Walter was a constant visitor, and used to stay for days together. On one of these visits he is said to have declared himself as the author of *Waverley*. He evidently enjoyed the quiet peaceful seclusion of the old place, with its memories of Mary Stuart, and association with congenial friends.

Entering by the lodge, the house appears as a low two-storied building, having an embayment at one corner, covered with creepers, and with a narrow border, grass-edged, under the wall, filled with bright flowers, from which an old-fashioned Fuchsia with its tiny leaves and flowers protrudes at regular intervals. The grounds here consist of a circular lawn with ornamental trees all round, the trees showing signs of great age. A tree of *Pinus excelsa* has six strong branches, which are growing out from a limb resting on the ground, where they have re-rooted, and then turned upwards, and become much branched. The tree had evidently been checked in its growth when quite young. A Portugal Laurel is quite tree-like, with a thick limb growing out of it; and an old Box tree is supported by six stems coming out of the ground. A magnificent old Poplar near the gate, leaning over at quite

an angle of sixty degrees, must be very ancient, and Queen Mary may often have meditated on affairs of State under the chequered shade of its branches. A *Cupressus macrocarpa* has also a tree-like appearance, going up straight for about 50 feet. In the centre is a round mass of named varieties of *Rhododendron hybridum*.

Yew hedges, as is natural in an old demesne like Trinity Grove, abound, and were planted to conceal the kitchen garden. The main walk, 180 yards by 3 yards, perfectly straight, has this Yew hedge on one side, and is lined the whole distance with standard Hollies, *Rhododendrons*, and Box alternately. Arches are cut in it, affording glimpses of herbaceous borders, and in the centre of the walk standard scarlet and white Thorns, Lilac (white and purple); and copper Beech, have been planted close to the hedge in the kitchen garden. They afford a great contrast of colour, and also act as a shelter to the standard fruit trees. The effect of this long vista of standard shrubs, although rather formal, is imposing, and it harmonises well with the formal lawn that accompanies it the whole distance. Two old wide-spreading Pear trees are a standing protest against all formality; *Veronica salicornoides* formed a round carpet under the first of the standards.

The conservatory, with a range of houses attached, is built out into the middle of the lawn. In front were three triangular beds filled with *Pelargoniums*. In the centre of one of them was an Adam's Needle (*Yucca gloriosa*), which I had the pleasure of seeing in flower. A border of flowers surrounds the conservatory wall. The back row of this border consists of *Salvia patens*, whilst *Gazania splendens* and blue and white *Lobelia* form the front rows. Entering the house, the first thing that catches the eye is a basket filled with Maidenhair in the centre; and an Ivy-leaved *Pelargonium* hanging gracefully down, the soft pink clusters contrasting prettily with the green foliage. The stage all round was very bright with flowering plants, some very large double *Petunias* being very striking. On the roof is a *Lapageria rosea*, and in the centre are *Camellias*. A very effective greenhouse plant is *Pleroma* (*Lasiandra*) *Fontanesiana*, with flowers of a deep purple hue. The Heath-house adjoins the conservatory. A *Dasyliion Hookeri*, flowered in the past summer, throwing up a spike 3 feet high, which bore a panicle of purple-coloured tubular flowers with yellow stamens. *Calanthe Masuca*, an evergreen terrestrial Orchid, was producing when I saw it, a scape of mauve-coloured flowers about 1½ feet high. According to Paxton's *Flower Garden*, this Orchid was introduced by Rollison in 1842, and has never been figured. In the stove were some fine specimens of *Asparagus prostratus* (*plumosus*), and the variety *p. nana*. A curious form of *Odontoglossum grande* was in flower, the labellum having concentric half-rings of light purple. A *Dendrobium suaveolens* yearly throws up from eight to ten flower-spikes, and Mr. Mackenzie has counted 200 flowers on this plant at one time.

The Fernery is also connected with the conservatory. The whole roof is covered with the scarlet pendent racemes of *Passiflora princeps*; it was the most gorgeous sight I ever saw. This *Passiflora* is in flower, more or less, all the year. In the winter it flowers on the old wood, and in the summer and autumn on the young wood. Mr. Mackenzie finds that if he keep the house at a temperature of 65°, its flowers do not drop. He also picked a spray with about ten of its scarlet flowers, the apical flowers not expanded, and hung it against a branch of *Asparagus*, than which nothing more effective for decoration could be desired. An enormous basket Fern, *Goniophlebium subauriculatum* (see fig. 72), has fronds 7 feet long, and nearly as many feet in diameter; it cannot be compared in length of fronds to one exhibited at the late show in Edinburgh, which had fronds 12 feet long. *Pleopeltis stigmatica* and *Adiantum amabile* are desirable Ferns for basket-work—at least, the examples in this house seemed to prove it. There is also a large specimen of the *Asparagus prostratus* (*plumosus*

cristatus); quite a little plant was certificated by the committee of the Scottish Horticultural Association, the committee not recognising that it is a mere sport. In the Rose-house the roof is covered with *Roses Belle Lyonnaise* and *Niphetos*. This *Niphetos* is as vigorous as a strong *Maréchal Niel*, and produces large globular flowers. The stage is devoted to *Azaleas* and greenhouse *Rhododendrons*. Round the brick-support of the house are borders of dwarf *Roses*, and in front are beds of *Ledum canadense* and the Mediterranean Heath.

An oblong border on the other side of the grounds to the house, near the gardeners' cottage, contains many choice shrubs. *Biota occidentalis* and Golden *Retinosporas* alternate at fixed distances the whole way. The fresh, light green of the *Biotas* (many of them have attained to a great thickness) make a striking contrast to the gold of the *Retinosporas*. *Thuia Standishii* has a yellow tint all the year round, unlike the Golden Scotch Fir, which only assumes that hue in the winter. *Cornus mas variegata* is of a different habit to the Variegated *Acer*, one being compact in growth, the other straggly, but they form a contrast. A thick rounded bush of *Berberis Darwinii*, I was told, was quite a sight in the spring, as it was completely draped with its Orange-flowers. Low masses of Ivy, *Pernettyas*, gold and silver Hollies, and *Cupressus macrocarpa*, add to the general effect. A *Pinus excelsa Clanbrasiliana* has a corner to itself. In the centre are bushy evergreen and deciduous trees.

Hedges of Holly and Privet divide the kitchen garden near the house into plots. Under the hedges by the walks, are old-established herbaceous borders. The hot, dry season had just suited the *Phloxes*, the scarlet varieties literally glowed in the sunlight. The Pink Woodruff formed a pink and green mass. A Yew square forms a rosary; and as they are protected, the dwarf *Roses* were bearing a second crop of bloom. Ulrich Brunner, Merveille de Lyon, Comtesse de Paris, John S. Mill, were the freest flowering autumn *Roses* in this border. In the same plot were rows of tall bushy Cactus and single-flowered *Dahlias* in splendid health. The flowers were of such a great size, and showed so great variation of colours, that I asked Mr. McKenzie if they were new varieties. "No," he answered, "they were here when I came."

The kitchen garden proper has walls on two sides, Yew and Holly hedges form the other two boundaries. By the side of the main walk are standard Apples, and standard Gooseberries alternately. Lord Suffield, Keswick Codlin, Ecklinville and Midlothian Seedling, Apples that never fail to bear heavy crops annually. The Gooseberries and Currants are threaded over in winter with a Royle's Garden Webber, an implement that ought to be more extensively used than it is (see fig. 71 in *Gard. Chron.*, vol. ix., 1891, p. 309), as it does its work in a very short period of time, and saves much time. Heavy crops of tall-growing winter vegetables gave proof of the depth and richness of the soil. The borders are lined with *Polyanthus*, *Auriculas*, and *Pansies*; and in the spring the kitchen garden presents a very gay appearance. Although Mr. Mackenzie has very little assistance, the garden is a pattern of neatness, and everything under his charge shows cultural skill and special knowledge. Gardening seems to run in the family, for his two brothers are gardeners. The eldest was gardener to the late Sir William Siemens, and is now gardener to Lady Siemens. *Vagabond*.

NEW OR NOTEWORTHY PLANTS.

GLADIOLUS PLATYPHYLLUS, Baker, n. sp.*

This fine new tall broad-leaved *Gladiolus* has been imported in a living state by Herr Max Leichtlin from Transkeian Kaffraria, from the same district in

* *Gladiolus platyphyllus*, Baker, n. sp.—Folius brevibus firmulis viridibus late ensiformibus, caule sequepedali, spica laxa elongata secunda, spathe valva exteriori magna oblonga, perianthio tubo curvato infundibulari. Spatha breviori, limbo tubo aequilongo flavido striis crebris subtilibus rubris percurso, segmentis superioribus oblongis acutis, arcuatis dorso convexis, segmentis inferioribus oblanceolatis reflexis multo minoribus, genitalibus perianthio distincte brevioribus.

which Herbert's long-leaved *Gladiolus oppositiflorus* has recently been re-discovered. In the shape of the flower it resembles *G. dracocephalus* and *G. Quartinianus* (*Bot. Mag.*, t. 6739). The flowers have a yellow ground-work, and fine vertical close red veins. They vary in colour a good deal, the predominant ground hue being between old-gold and ochre-yellow. The leaves are broader than in any other known species, whence the name. Leaves firm, green, broadly ensiform, the lowest reaching a length of a foot above the sheathing base, and a breadth of 2 inches at the middle. Stem stiffly erect, 1½ feet long, bearing four or five leaves, with long sheathing bases. Spike very long, round, varying from half a foot to above a foot in length; outer spathe-valve green, oblong-complicate, 2 inches long in the lower flowers. Perianth-tube arcuate, narrowly funnel-shaped, nearly 2 inches long, ½ inch in diameter at the throat; limb as long as the tube, yellow, with very fine close vertical veins of red; upper segments oblong, acute, ½ to ¾ inch broad, standing firm, and crowded together, concave on the back; three lower segments much smaller, ob-lanceolate, reflexed, plain yellow at the throat; stamens ½ inch shorter than the upper perianth segments. *J. G. Baker*.

CONIFERS AND TAXADS.

THE brief announcement in these columns of September 30, p. 401, that a systematic review of the genera by Dr. Maxwell T. Masters, has just been published in the *Journal of the Linnean Society*, will scarcely convey to those interested in Conifers, to whom that Journal is not accessible, anything like an adequate idea of its importance, either in its scientific aspect, or as affecting the nomenclature of Conifers in general. It is, as the author informs us, "the outcome of a comparative examination of the morphological characters of all the genera of Taxaceæ and Coniferæ, as far as he has been able to accomplish it. In most cases, living plants have been examined, and in all instances the available museum and herbarium specimens have been studied, and the literature relating to them referred to." How comprehensively and efficiently this has been done, the synopsis itself bears the most ample evidence, and by it our knowledge of this grand family of trees and shrubs is carried to the farthest point yet reached. Thirteen years have elapsed since the publication of Mr. Bentham's revision of the Order in the *Genera Plantarum*, but it was evident from the first to those who had made the Coniferæ a special study, that Bentham's revision, with all its excellencies, and they are many, would eventually fail to satisfy the requirements of science, or the needs of a practical nomenclature. Both requirements are for the time met by Dr. Masters' revision, which will, without doubt, be generally, if not universally, accepted. The lines laid down by Bentham have been mainly followed, but many and important deviations have been made, but always, in the judgment of the writer, in the right direction.

The main object of the present article is to point out where Dr. Masters' systematic arrangement of the Conifers and Taxads differs from that of Bentham, and thence help to prepare the way for the acceptance of some inevitable changes in nomenclature which must result from these deviations, purposely omitting all technicalities and controversial points.

The most noteworthy change is the restoration of Lindley's Taxaceæ as a distinct order from the Coniferæ proper, and which had been reduced to tribal rank both by Parlature and by Bentham. Dr. Masters distributes the Taxaceæ into two tribes, *Salicuriaceæ* including the genera *Ginkgo*, *Cephalotaxus*, and *Torreya*, a very natural group, thus restoring *Cephalotaxus* to its proper place from which it had been removed by Bentham and referred to Taxodineæ (*Taxodium*, *Sequoia*, &c.), with which it has very little in common. The second tribe *Taxineæ* is a far more extensive group, and for scientific purposes is divided into two sub-tribes, of which the Yews proper are the type of the first, with

which are joined the Australian genera *Pherosphaera* and *Phyllocladus*, and the more widely dispersed *Dacrydium*.

The *Podocarpus* furnish the type of the second sub-tribe, and with these are associated the curious *Saxegothæa*, the monotypic *Microcachrys* (probably an oversight of the founder for *Microcandrya*), and the New Zealand genus *Stachycarpus*, the species of which were previously referred to *Podocarpus*.

Turning to the true Conifers, the first group dealt with is the Cypress tribe (*Cupressineæ*),

by different botanists, most of them on very trivial grounds, is restored almost to its original circumscription; and, although still a polymorphic genus, it is from the broader point of view a fairly natural one. Gardeners and amateurs will thenceforth rejoice that they may continue to call that useful and wonderfully polymorphic tree, popularly known as Lawson's Cypress, *Cupressus Lawsoniana*, its neighbour and near ally, *C. nutkaensis*, and our old friend the white Cedar, *C. thyoides*.

With these, of course, are joined the two Japanese

is restored to its former place, and this inappropriate name, as well as *Chamaecyparis*, will doubtless disappear in time. The second tribe, *Taxodineæ*, remains as it was, except that the monotypic *Glyptostrobus*, which Mr. Bentham had merged in *Taxodium*, is restored; and *Cunninghamia* is removed to the *Araucarineæ*, which tribe also, with this addition, remains as it was. The important tribe *Abietineæ* undergoes no change in extent, but the number of the genera is increased on account of the recent flowering in Europe of *Larix Kämpferi* and *Abies Fortunei*, proving that the first-named is not a true Larch, nor the second a true *Abies*; they are thence restored to generic rank under the names of *Pseudolarix* and *Keteleeria* respectively.

The writer is reluctant to prolong an article already too lengthy, but a word of regret must be uttered on one point, and one only, viz., that the names *Pseudolarix* and *Pseudotsuga* should be retained, when so good an opportunity offered itself for substituting better. There is nothing false about these trees, for they are beautiful realities; the first name was the coinage of a writer on Conifers who seriously believed that *Biota* was derived from *bi*, two, and *otis*, an ear (*sic*, *Pinetum*, p. 49); and the second is a mongrel word, half Greek, half Japanese—a union that philology revolts against. Such names are thorns in the flesh; they bring discredit on the science that takes them up—they are flouted by scholars, and sneered at by the multitude. Dr. Masters' labours among Conifers have been fruitful in many valuable results, and all interested in this wonderful family, will be grateful to him for having undertaken them. A. H. K.

NOTES FROM CHISWICK.

OUT-DOOR GRAPES.—Very probably passed by unobserved by many visitors to Chiswick Gardens are the varieties of Grapes grown on a south-west wall, and generally fruiting well this season, the fruits being ripe, well coloured, and, with some sorts, very sweet. Of course, it would not do to regard the present season as an average one so far as out-door Grapes are concerned, but, at least, these fruit have ripened as well, and the crop has been as abundant, on walls as at any time during the past fifty years. How Grapes have fared at Cardiff, or elsewhere, planted *à la* vineyard, it would be interesting to learn. Certainly, were the wall-grown produce of the season consumed only in the making of wine, sparkling champagne of the best French brands might be abundant, especially with the aid of the big crop of cider Apples which has marked the season. But we may well hope that much of the abundant out-door Grape crop has been put to less ignoble uses than the making of bastard champagne, and that thousands, to whom as a rule Grapes are metaphorically sour, have this year been able to have a fill of sweet, if not very large ones. It is true, that for 6d. per lb. we can purchase in town shops good Spanish Grapes in plenty, finer, but not sweeter, than have been grown on our cottage walls. These foreign Grapes, however, seldom get into the rural districts, and the dwellers there naturally find all the more pleasure in gathering and consuming fruit of their own Vines, even though they may not in the markets or shops fetch a higher return than from 2d. to 3d. per lb. If it be true that good outdoor Grape seasons come but seldom, at least we should not be discouraged any the more from striving to obtain varieties that do offer some advance in prolificacy, in colour, in size of bunch and berry, and especially in sweetness, on those old varieties with which we have so long been familiar. The Vines at Chiswick seem to be capable of furnishing something useful in the direction named, especially the American sorts, which, apparently of some other species than *Vitis vinifera*, have entire leaves of a thick or leathery nature, and comparatively smooth. Some of them are, so far as the flavour of the fruit is concerned, worthless; and yet there are some diverse varieties trained in festoon fashion up columns and along chains close to the

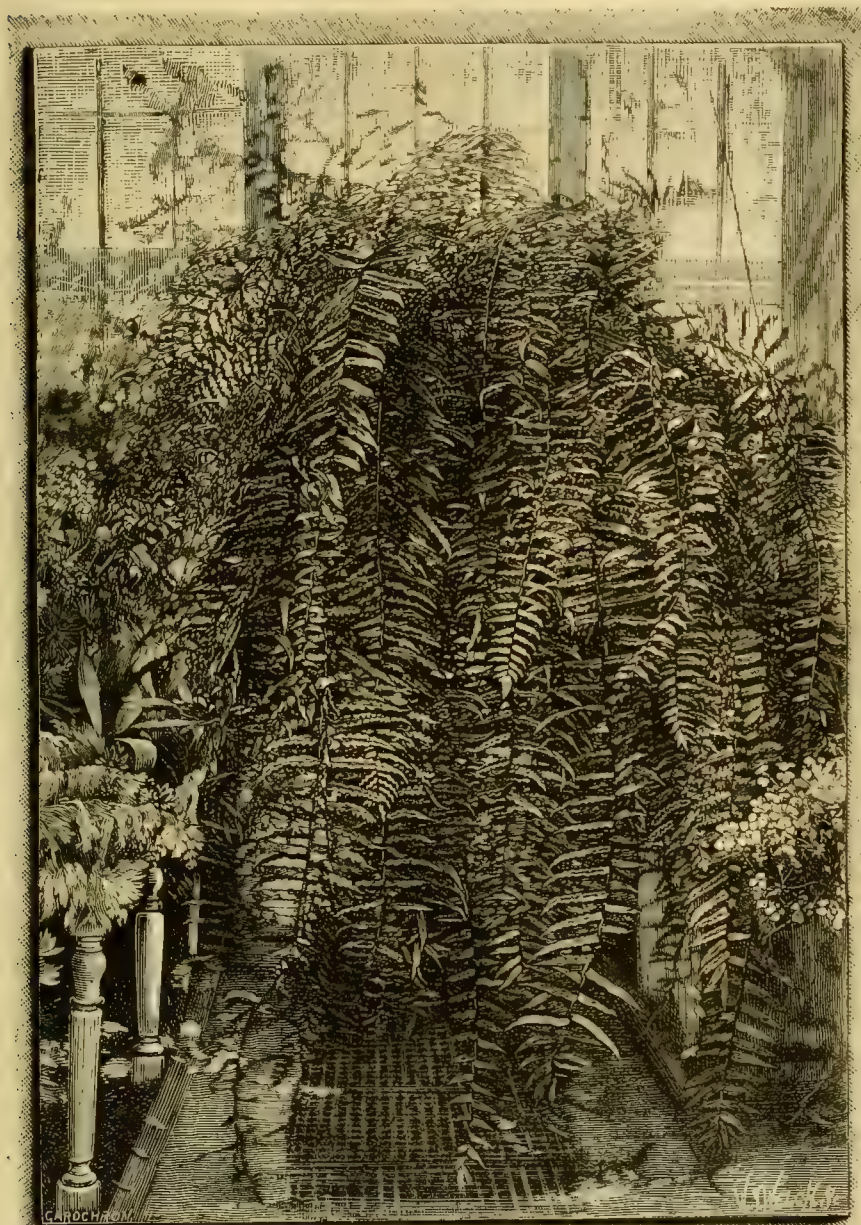


FIG. 72.—GONIOPHLEBIUM SUBAURICULATUM. (SEE P. 456.)

hitherto the most difficult and perplexing to the botanist of all the tribal divisions. Here we have the greatest advance yet made in the systematic arrangement of the included species, numbers of which have been bandied about from one genus to another, to the no small inconvenience and, perhaps, disgust of planters. The sub-tribal divisions of this large group need not be specified here, and the Australian and subtropical genera may also be passed over. The Junipers remain intact, but in the *Thuia* group some notable changes are made. The genus *Cupressus*, after various dismemberments

species called *Retinospora*; but as it has been oft repeated, *Retinospora* has no claim to generic distinction, and it has, since the introduction of the type species, been made to include a hodge-podge of forms, gathered from three or four different genera. The Japanese *Thuopsis* is also brought under *Cupressus*, and perhaps rightly *Thuja* proper is now restricted to the old North American *Arbovitæ*, its big brother on the other side of the continent, the Japanese species, *T. Standishii* or *T. japonica*; and lastly, the Eastern Asiatic species, upon which Endlicher founded the genus *Biota*,

rockwork, which are almost loaded with black clusters of fruit, and present a most ornamental appearance. On the wall near by, however, are some of greater excellence. One of the best is a striking red-berried Grape—a prettier red, perhaps, than is found on any of the Frontignans. This is named Virginus, having medium-sized, handsome clusters of good-sized and perfectly-finished berries, that are very sweet, and it is well worthy of general cultivation. Another excellent deep-red variety is Brighton, the berries fleshy, sweet, and very nice; that, too, is well worth growing largely. Moore's Seedling has good clusters of fine black Grapes, peculiar in flavour, and richly coloured. Of other dark Grapes, Miller's Burgundy has a great crop of very black bunches; Esperione has the largest bunches, the berries well-coloured, but rather acid; Chasselas rose, reddish-black, very sweet and mild flavour, carrying a heavy crop. Gammynoir is also here, but not doing very well; this is a black Grape, and is the chief variety grown in the Castle Coch Vineyard. White's Royal Muscadine has a good crop of fair-sized bunches, quite ripe; Dutch Sweetwater is poorly fruited, it sets badly; Duchess, an American white, strong grower, but not a great cropper; and Jefferson, one of the cut-leaved varieties, the berries carrying some reddish tints. A very striking Vine, for it was not fruiting, is Trahuria; it has deep claret-red leafage that is thickly set on the shoots, and should where it does well, make a very valuable addition to hardy climbers giving colour—it does not seem to be a strong grower. All these hardy Vines were originally planted in a heated house, but they were out of their element, and refused to thrive; they evidently like best to be in the open air. A. D.

THE HERBACEOUS BORDER.

FREE FLOWERING HERBACEOUS PLANTS.

A FEW plants on the borders here deserve noticing for the freedom with which they are flowering this autumn: these are, *Aster Amellus* bessarabicus, *A. longifolius*, *Anemone japonica*, *A. j. alba*, or *Honorine Joubert*, *Harpalum rigidum*, and *Helianthus multiflorus*, single and double. Some of these generally flower well, but I never remember observing such profusion as this season. Most of them have been in bloom for several weeks, and should the weather keep mild they will last for some time longer. *Honorine Joubert*, the white variety of *Anemone japonica*, does not appear to grow so freely or flower abundantly in some gardens, although here it is remarkably good, and this autumn it has produced a profusion of bloom and is still throwing up flower-stems. Two other plants that do not flower very well some seasons, as they come into flower rather late, are doing so this year, viz., *Aster novæ-angliæ* and *Pyrethrum uliginosum*. J. S. Upex, Wiggan-thorpe, York.

DICTAMNUS GIGANTEA.

Amongst the many beautiful hardy flowers that have adorned our herbaceous border during the past summer, none have exceeded in interest this charming *Dictamnus*. It is far more attractive than either *Dictamnus albus* or *D. angustifolius*. We first saw this fine *Dictamnus gigantea* in the gardens of Sir Edmund G. Loder, Bart., whose residence then was Flore House, near Weedon, and who had the largest collection of rare hardy herbaceous plants in the district. It was the finest plant in bloom at that time in Sir Edmund's collection, and was a most striking object in the herbaceous border. We searched all our English catalogues for this *Dictamnus*, but in vain, though ultimately found it offered for sale in Messrs. Ant. Roze's catalogue of Overveen, Holland. We purchased two plants the following autumn, but they were so small that it required four years' growth before they rewarded us with a sight of their beautiful flowers. They throw up erect stems about 2 ft. high; the leaves are pinnate, with heart-shaped leaves, clothing the stem from the base upwards. The flowers are borne

in long terminal racemes, rosy-red, of surpassing beauty. They will succeed in any deep and fairly rich soil; making handsome plants, and they are exceedingly attractive in the herbaceous-border. *Quintin Road, Hampton, near Evesham.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT "THE BIRKS," ESKBANK, MIDLOTHIAN.

ESKBANK, the residence of George Douglas, Esq., bids fair to become as famed among Orchid growers as it was some years ago among enthusiastic Grape growers, because of the enormous bunches of Trebiano Grape produced there under the careful treatment of Mr. John Curror, the gardener, one of which grown in 1875, and exhibited at the Edinburgh "International" show that autumn, weighed 26 lb. 4 oz., and still bears the "record" as the heaviest bunch known to have been produced in Britain. Although the Vines at The Birks are now much past their best in the two houses devoted to them, the Orchids, which have been steadily growing up alongside of them in two or three houses of moderate dimensions, are now getting into fine specimens in grand health, and flowering to perfection under Mr. Curror's judicious management. Some of the finest specimens have been appearing regularly at the Edinburgh flower shows, and carrying off high honours for some years past. The lot of four which won the 1st prize in a strong class at the recent show at Edinburgh, were specially notable, comprising a grand specimen of *Oncidium incurvum*, with forty long graceful spikes of its beautiful lilac-tinted flowers, computed to have had about 12,000 individual blooms, and measuring through the mass over 7 feet in diameter, a truly grand display. *Miltonia spectabilis* Moreliana, about 2 feet across, and a picture of health, bore about thirty flower scapes, more than half of which were open; *Cologyne Massangeana*, had a couple of dozen of gracefully-drooping spikes of creamy-white flowers; and last, but by no means the least interesting, *Vanda cœrulea*, about 18 inches high, with every leaf in perfect health, and bearing two spikes, with eighteen richly-coloured flowers—quite a gem among Vandas. These formed a splendid group for an autumn show; but the collection at The Birks is, perhaps, stronger in the spring, when the choice collections of *Cattleyas*, *Dendrobiums*, *Lælias*, and the like, are in their full panoply of bloom. Many of the finest varieties of these are grown with great success by Mr. Curror, who, it is needless to say, is a close observer of their habits, likes and dislikes, and he and his worthy employer are alike keen orchidists. D.

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.

This noble introduction of Messrs. F. Sander & Co. was a great favourite from the first, and each year it increases in favour. It is difficult to imagine a more beautiful or more useful flower. At St. Albans there is a fine show of this variety, and that other fine introduction, *Cattleya labiata* vera, which is our best and showiest autumn Orchid. Of *Dendrobium Phalænopsis Schroderianum*, Mr. Jas. Cypher, of the Queen's Road Nursery, sends two charming made-up sprays, in which the flowers are all different, ranging from nearly white to rose and crimson. Mr. Cypher says of them:—"I am sending made-up sprays of that grand Orchid, *Dendrobium Phalænopsis Schroderianum*, showing over twenty distinct varieties, and at the same time giving an illustration of their splendid effect when properly worked up for ornament. I have now about 2000 blooms open on plants arranged in a span-roofed house 40 feet long. Perfect wreaths of bloom of all shades extend from end to end, some spikes having over twenty fully-expanded flowers."

DENDROBIUM PHALÆNOPSIS STATTERIANUM.

A fine dark crimson form of this comes from Mr. J. Cooper, gardener to John Mills, Esq., Bisterne

Park, Ringwood. The plant is said to have stems 2 feet 4 inches long, four spikes of thirteen flowers each, and it must be a fine object. It is singular that this section produces variations of dark colour only, while the recent importations of the *Schroderianum* type run much into light forms, and seem to promise a fair sprinkling of white ones.

PLANT NOTES.

KALANCHÆ GRANDIFLORA.

THERE are two totally different plants passing current in gardens at the present time under this name. One is *K. grandiflora*, Wright & Arn. *Prodr.*, p. 350, an Indian species with bright yellow flowers, a short corolla tube, and unspotted leaves. This is figured in *Bot. Mag.*, t. 5460, and described by C. B. Clarke in Hooker's *Flora of British India*, vol. ii., p. 415. The other is *K. grandiflora*, A. Rich. *Fl. Abyss.*, vol. i., p. 310, an Abyssinian species, with whitish flowers, a very long corolla tube, and leaves conspicuously spotted with brown. This has lately been introduced into cultivation for the first time, and is figured under the name of *grandiflora* in the *Gartenflora*, tab. 1594. The name *grandiflora* belongs rightfully to the Indian species, and I described the Abyssinian plant not long ago in these columns under the name of *Kalanchæ marmorata*. J. G. Baker.

LENGTH OF LIFE IN PHALÆNOPSIS.

In common with most Orchid-growers, I have experienced great difficulty with *Phalænopsis*, and have failed to make them increase year by year, and form large vigorous plants. When speaking the other day to a well-known grower, who has collected Orchids in various parts of the world, he told me that the reason why large and old plants of *Phalænopsis* are hardly ever seen is, because in their own country the duration of their life does not exceed a few years. I should like to know whether this is an acknowledged fact; as if it be so, it throws considerable light upon the cause of the general failure in their cultivation. S. Courtauld.

REARING OF CITRUS AND DECIDUOUS TREES FROM SEED.

(Continued from p. 394.)

THE PEAR.—The remarks given on the importation of Apple seedlings apply to Pear seedlings as well. Pear seeds are not so easily obtained as Apple seeds, not because there are not enough Pears produced, but because they are peculiarly liable to prove defective. Seeds gathered from the Winter Nelis Pear have, so far, given the best satisfaction in California.

Growers have reported repeated failures to germinate in Pear seeds obtained from dealers. This is, no doubt, because they are gathered from all sources, care not having been taken to prevent the germinating power of the seeds from becoming destroyed in allowing the fruit to ferment before separating the seeds from the pomace; acetous fermentation takes place, and the germ in the seed is injured by the acid. Another reason is, that the seeds are extracted from unripe fruit, and are necessarily imperfect.

Pear-seeds are injured in many ways, but the principal ones are being kept too moist for a long time, and by allowing them to become too dry. Pear-seeds soon after being collected from the pulp should be separated from each other by mixing with sand. The seeds are taken from the fruit as soon as it becomes quite soft, by sifting them from the pomace, and before becoming dry, or immediately thereafter, are mixed with two or three times their bulk of sand, and are thus kept till spring before being planted. After the first season's growth the plants are taken up and sorted, and then re-planted in the nursery, or the larger ones are grafted indoors, and then transplanted.

PLUM.

The Plum used for stocks can be propagated in two ways—viz., by planting the seed or by cuttings. There are several varieties of Plums that can be used for stocks, but the Myrobalan, or Cherry Plum, has proved the best adapted as a stock for Plums and Prunes. There are other varieties that can be used equally as well, were it not that they put forth numerous suckers, so much so as to render the stock in time valueless. The Myrobalan Plum does not sucker, and thrives in moist soils which are heavy and hold the moisture too long for other stocks, such as the Peach, Apricot, Almond, &c., to thrive. It also thrives in dry soils, but it is best adapted for heavy soils, such as are suitable for the Pear, or in situations which are too wet for other kinds of fruits. However, many have fallen into the error, because this stock is so enduring, of planting it in soils too poor to be altogether suitable for its culture, and on this account the trees have not reached perfection or become profitable bearers. This tree, as do all others, requires the elements and conditions suitable for its culture, but it will endure more hardship, and where the better conditions are supplied its returns are greater.

Plum pits are kept in sand until spring, when they are planted either in seed beds or in drills.

QUINCE.

The Quince is readily propagated, either by planting the seed or cuttings. The latter method is, however, mostly practised, it being accomplished so easily. The seed should never be allowed to get thoroughly dried before it is planted. As soon as taken from the fruit, it should be preserved in moist sand until spring, when it should be planted in a well-prepared seed bed; or it may be sown in drills, as are Pear and Apple seeds.

Quince seeds are not very easily obtained, as the fruit is not grown in such large quantities as the Apple and Pear. The fruit, when obtained, must be cut to extract the core in which the seeds are. They cannot be left to rot, as are Apples and Pears, as decay sets in too slowly; and while many Quinces commence to rot very soon, yet one side generally remains intact, and to wait until that part decays would be too long a time for the seed to remain in the mass of sour and fermented pulp. Propagating by the cuttings system, has so far been the most practised, and almost exclusively. The system of multiplication by cuttings is probably the best for the Quince. The cuttings grow very readily, and make thrifty growth, and can be budded the same year of planting. The cuttings are taken from the trees early in the autumn, and are planted in January or February, or even later, but the sooner they are planted the better, as the Quince puts forth roots quite early.

Large cuttings take root equally as well as the small ones, but the small ones are preferred, as they make a thriftier and healthier stock. Large cuttings have the disadvantage of requiring at least two years of growth for the formation of a complete root-system. Often a large cutting is taken up the winter after planting with the end only partly callused, and the part where rootlets have not begun to form generally dries or rots away, the rootlets then only forming on one side of the cutting. In small cuttings a root forms at the end, and the wound soon grows over; the small root pushes its way downward, and throws out numerous laterals, which give the cutting a system of roots equal to plants grown from seed. The cuttings are made 12 inches long, preference being given to those measuring from a quarter to half an inch thick, and about 12 inches long. They are planted deep, allowing only about 2 inches of the cutting above-ground; and after the soil is well pressed around them, the loose crumb is hoed against the cuttings on either side, covering the parts exposed, to prevent the sun from scorching them, and thereby causing the ends to die back.

When the cuttings put forth shoots, these make their way through the loose soil. It is better to

allow all the shoots to grow undisturbed for a time, as the trimming prevents the development and formation of roots.

Generally, a cutting puts forth several shoots, and in a month or so the most of them seem to stop growing, while one or two take the lead and keep on growing; these are the ones to leave, and which become the stock.

When these shoots are seen to take a start ahead of the rest, the others can be shortened, but should not be cut off entirely, as they aid materially in keeping the sap flowing. If the suckers are removed too soon, this may give the cutting a too-sudden check, and stop its growth for the season. In such event the cutting might as well be pulled up, as it will only remain in the ground lingering between life and death, and, if allowed to grow, will never make a thrifty tree.

WALNUT.

The cultivation of Walnut seedlings is simple, but requires care and attention in all the points bearing on their germination. The nuts are placed in sand, preparatory to planting, as follows:—A frame, consisting of 10 inch boards, is placed on the surface of the ground, and half filled with sand. The nuts are then spread thickly (a layer of nuts 6 inches deep), and covered with about 3 or 4 inches of sand. An embankment of earth is made all round the frame to prevent the nuts from drying. The nuts are examined from time to time, and as soon as they indicate or show signs of germination, are planted in nursery rows. *J. J. Willis, Harpenden.*

FORESTRY.

FORESTRY AT EARL'S COURT.

At the opening of the exhibition in May, though in advance of most other sections, the Forestry Department was in an obviously incomplete state. The preliminary arrangements were not made sufficiently in advance, and the consequence is that, though all praise is due to Mr. George Cadell, the Director, for what he has managed to accomplish, the exhibition has still too fragmentary an appearance. There are lamentable gaps in the collection; and what specimens there are, give, as it happens, rather the impression that for large sound timber we must go to our colonies in the southern hemisphere, and that British trees are chiefly noticeable for their malformations and diseases. The specimens sent by Her Majesty, however, do not contribute to this impression, so far as one section of the kingdom is concerned, for it would be difficult to surpass the beauty of the table-top of Scots Fir, or the vigorously healthy appearance of the planks and logs of the same wood sent by Mr. Michie from Balmoral. Windsor Great Park is characteristically represented by various trees bored by wood-peckers, struck by lightning, and suffering from the development of double leaders. There is a specimen of Herne's Oak and some other finely-grained wood rich in the colour of incipient decay. The antiquity of other trees is evinced by the complete overgrowth of incised dates. It was from this park that the diseased Pine was sent, from which the interesting brood of *Sirex juvenicus*, now shown near by, was hatched; whilst its larger animals are represented by several fine pairs of antlers and the leg of a red-deer caught in the fork of a Thorn tree. Following the strict order of precedence, we pass from Her Majesty's collections to the contribution of the Prime Minister. Interesting, however, as Mr. Gladstone's axe is to many, foresters in general can hardly fail to be more attracted by the specimens sent by one of "Her Majesty's Opposition," Lord Carnarvon's magnificent set of trees from Highclere. They are only four in number, but such a four! There is a well-cut and displayed butt of each, and a good plank. *Picea Menziesii*, 45 years old, contained 80 cubic feet of timber; *Pinus Strobus*, 100 years old, 110 feet; *P.*

Laricio, 60 years old, 111 feet; and the Douglas Fir, 60 years old, 169 feet. We should, however, have first mentioned the series sent by the various Government departments. The Forest of Dean is fairly well represented, specimens even of the fossil trees of its coal measures being included; but a large number of the exhibits are excrescences and cup-shakes, which have a merely pathological interest. The New Forest, on the other hand, is hardly represented at all, nor apparently is the Admiralty, though Woolwich Arsenal sends an interesting gun-carriage wheel and some saddle-trees, showing the various stages of manufacture; and the Small Arms Factory sends gun-stocks of Italian walnut, and lances of Ash and Bamboo. The trustees of the British Museum lend a series of small specimens of woods from Windsor Forest, and the South Kensington Museum sends the historic specimens used by Captain Fowke in his experiments on breaking-strength; but neither of these sets is as well shown as the sixty named Japanese woods, exhibited by the Edinburgh Museum of Science and Art. Most of the Colonial Governments, however, who exhibit, send series that altogether eclipse our own. The Cape colony is mainly represented by some sleepers of various native woods used in the Government railways; and the few small specimens of the magnificent woods of Tasmania at once recall the fine trophy from that island in the Exhibition of 1862, and call attention to the fact that the authorities at Kew, who have so fine a series of colonial woods in their care, have not contributed to this exhibition. There are some very fine planks of New Zealand timbers, besides a large slab of Kauri Pine, lent by Sir Walter Buller; but the most complete collection is that of over one hundred named and described timbers from New South Wales.

The promoters are, we believe, indebted to the Imperial Institute for some of these collections, as also for the block of Douglas Fir squared, over 5 feet in the side. India is, as we have suggested, but poorly represented. Lieutenant-General Michael, one of the pioneers of Indian forestry, sends a fine log of *Padouk-Pterocarpus indicus*; and there is an interesting series of Teak-logs, hollowed by termites, which have been expelled by true ants, and these again by honey-bees. Mr. Cadell himself exhibits a handsome inlaid cabinet of named Japanese and Indian woods.

The railway companies contribute some interesting specimens. The South-Western Railway shows Baltic Redwood sleepers to demonstrate the benefit of creosoting, and some timbers from Ryde Pier, which apparently show that creosote is no protection against the combined attack of sea-water and Teredo. The North-Western Railway exhibit Greenheart, Elm, and Pitch Pine timbers from Holyhead Jetty, where they have been in use for twenty years, and all three, whilst much corroded at the surface, appear equally sound in the main. The Surveyor's Institution exhibit a handsome transparent screen, showing very effectively Barchard's series of thin sections of European woods; and Professor Curtis, of Downton, has a small but most instructive series illustrative of rate of growth, recovery from injury, good and bad pruning, Larch canker, &c. Mr. A. C. Forbes, of Bowood, also sends a series of wood and bark showing insect ravages; and we should much like some practical experiences as to the simple tarpaulin tow-lined cap, exhibited by Messrs. Gower, Dodson & Co., as a preventive of insect attack. From an economic point of view, it is disappointing to see only one sample of wood-pulp for paper-making, which is assuredly an industry with a great future. The picturequeness of the exhibition is enhanced by the shell of one of the Burnham Beeches, said to be 700 years old, sent by Mr. J. M. Forbes, the superintendent; whilst the other Corporation woodland, Epping Forest, is represented by a most characteristic pollarded Hornbeam, sent by Mr. F. McKenzie. Nor must we forget Mr. Andrew McAllum's beautiful forest pictures, some from Sherwood, but mostly from Bantam. Throughout

the exhibition Mr. Cadell has carried out, as far as the specimens permit, his excellent ideas on the right way to exhibit timber so as to display all the chief details of its structure. *G. S. Boulger.*

THE GERMINATION OF PALMS.

IN the numbers of the *Revue de l'Horticulture Belge* for the present year have appeared some articles by Dr. Henri Micheels on this subject, which, though mainly of botanical interest, are also valuable to the cultivator. On this account we call attention to

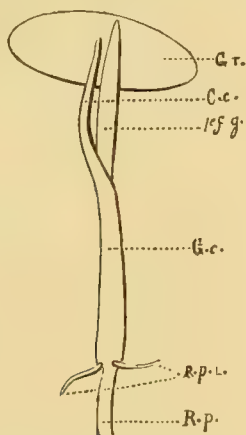


FIG. 73.—PHŒNIX DACTYLIFERA.

some of the principal points in Dr. Micheel's paper, which we are enabled to illustrate through the courtesy of our colleagues of the *Revue*. Dr. Micheels begins with the history of his subject, and alludes in glowing terms, as well he may, to the monumental work of Von Martius on Palms.

We may premise that the seed of a Palm is constituted of hard albumen, from which emerges, when the embryo begins to grow, a solitary cotyledon, part of which remains within the seed, whilst part protrudes in the form of a sheath or tube. From within the sheath of the cotyledon emerge in due season the primordial leaves—leaves differing from the adult leaves in form and appearance. These

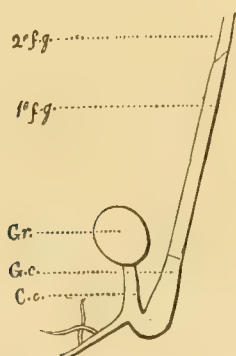


FIG. 74.—SABAL UMBRACULIFERA.

are the main facts, but they are subject to modifications, as pointed out by Dr. Micheels.

In the Date Palm (fig. 73), the sheathing portion of the cotyledon emerges from the seed in the form of a sheath, which becomes a tube at the base, *G.c.*, and which surrounds the first leaf, *fg.* *R.p.* is the principal root, *R.p.l.* representing the lateral roots.

In Sabal (fig. 74) there intervenes between the seed, *G.*, and the sheathing base of the cotyledon, *G.c.*, a cylindrical stalk, *C.c.*, *1'fg.* and *2'fg.* being the primordial leaves.

In *Dictyosperma* (fig. 75) the seed is in direct contact with the sheath of the cotyledon, without the intervention of any cylindrical portion.

These three Palms constitute in their mode of germination so many types. Although in some cases there are transitional forms, yet, generally speaking, all the species of a particular genus conform to one of the three types above mentioned.

Dr. Micheels records the names of the various Palms which conform to these several types, for which we must refer to the original paper.

The size of the cotyledonary cylinder varies greatly in different cases, as from 1 cent. in *Ceroxylon andicola*, to 15 cent. in *Corypha umbraculifera*; whilst in *Hyphæne*, *Copernicia*, and *Phytelephas*, according to Karsten, it exceeds 60 cent.

The first leaf which issues from the sheath of the cotyledon is always represented only by its sheathing portion, and its tip is always stiffly pointed, as in the *Phœnix dactylifera*. In some Palms the second (*Dictyosperma*, &c.) and the third leaves are, as in *Kentia exorhizia*, also represented by sheaths only. Dr. Micheels gives lists of the Palms which produce—one, two, or three primordial sheath-leaves, *fg.*, in the figures.

The first normal leaf (foliage leaf) is characteristic as to the shape of its limb; thus, in some cases it is elongated, entire, and pointed at the tip, as in *Phœnix dactylifera*, and about sixty-five others which are enumerated. The first leaf varies in

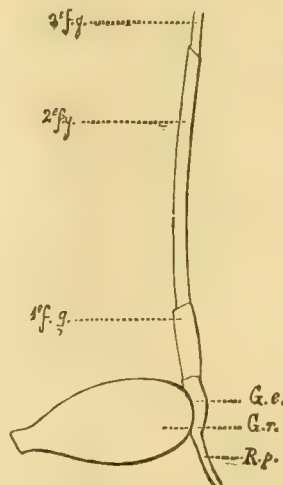


FIG. 75.—DICTYOSPERMA AUREUM.

size in different cases, from a few centimetres to as much as 60 centimetres in length, and from 1 cent. in width in Sabal, to 15 in *Pholidocarpus Ihur*.

The limb of the first normal leaf is elongated, entire, and truncate at the apex, which is slightly lobed (*Licuala peltata*, fig. 76).

In *Iriartea prismatica* the limb of the leaf is elliptic, with a shallow notch at the apex.

In many Palms the first leaf is bifid (see fig. 77), as in *Archontophœnix Alexandræ*, or *Hydriastele Wendlandiana* (fig. 78).

The limb of *Caryota* is shortly stalked, ovate, deeply two-lobed, the lobes finely erose at the margins, and with a fine thread in the centre between the lobes representing the midrib (see fig. 79).

In *Desmoncus* sp. the limb also consists of two lanceolate lobes, diverging from a short stalk, and with a central lobe reduced to a filament.

In some cases the first leaf is pinnately lobed (fig. 80), *Calamus Lewisianus*; or palmately-lobed, *Lantania Commersoni* (fig. 81).

Lastly, the first leaf is sometimes reduced to the condition of a phyllode, having a sheath and petiole, but destitute of limb, as in *Raphia vinifera* (fig. 82).

Dr. Micheel's paper is an abstract from one which he published in the *Transactions of the Royal Academy of Belgium*, 1889, t. II., and in it are given numerous references to Pâtzer and others who have investigated the subject.

PEACHES AND NECTARINES.

THESE at Mereworth do remarkably on an easterly aspect. There are two walls each measuring 210 yards in length facing the east, both are devoted entirely to the Peach and Nectarine, and in the majority of seasons not only are the crops good, but



FIG. 76.—LICUALA PELTATA, FIRST LEAF.

size, colour, and flavour are equal, if not better than those grown on a south wall. Undoubtedly in the colder parts of the country it would be useless to attempt to ripen Peaches on any aspect except a southerly one, but both soil and climate to suit them, and we are very successful. There are one or two things which the gardener must take into considera-

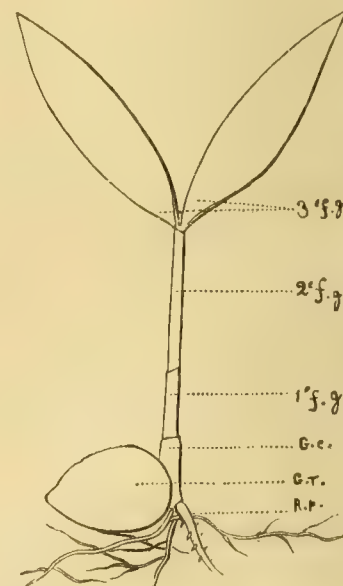


FIG. 77.—ARCHONTOPHŒNIX ALEXANDRÆ.

tion before making use of east walls, first and foremost is the selection of suitable varieties; next the thin training, and lastly the means of protection during the flowering season. In the selection of varieties to grow, I would advise no late sorts being planted, as it is only in unusually fine seasons that these will ripen, and even then their flavour is not very good; while in the majority of years the fruit is woolly

and dry, and only fit for kitchen uses. We have a fine tree of Princess of Wales (probably one of the largest and best under glass), which seldom fails to bear good crops, while the size is enormous, last year several fruits turned the scale at 12 oz. and the largest at 15½ oz. This year the largest turned the scale at 12 oz., and the crop was heavier and better in colour; but still the flavour was not first-rate, although it was much better than in some previous years. Admirable (Walburton's) usually ripen well, and is a delicious Peach; Gladstone is one of the best, Waterloo ripens the first—with Alexander, then



FIG. 78.—HYDRIASTELE WENDLANDIANA, FIR T LEAF.
(SEE P. 460.)

follow Hale's Early and Rivers' Early York. This year the fruits of the Hale's Early were not so large as usual, but the colour was very fine, and when gathered rather under-ripe and placed in a cool and well-ventilated fruit-room the flavour is quite passable. The Noblesse and Alexandra Noblesse, Royal George, Dymond, and Stirling Castle are excellent in every respect, the first-named showing no signs of

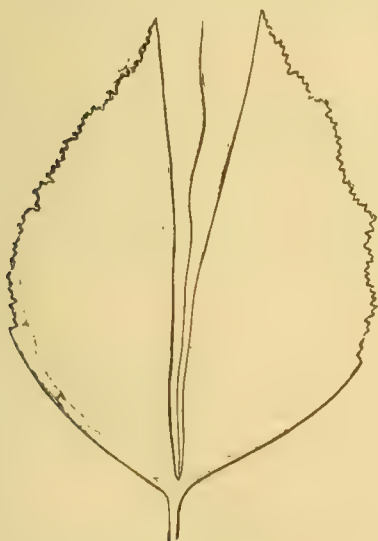


FIG. 79.—CARYOTA SORDIFERA, FIRST LEAF.
(SEE P. 460.)

mildew here. Condor, Dagmar, A'bec are nice flavoured fruits, and good croppers; Belle Beauce, Royal Charlotte, Grosse Mignonne, Bellegarde, produce excellent fruits on an eastern aspect.

With regard to Nectarines, I find Lord Napier, Elruge, Stanwick Elruge, Pitmaston Orange, Humboldt, Pine-apple, and Violette Hative very satisfactory, colour, size and flavour being all that one can desire in a Nectarine. Victoria and Albert Victor split, and seldom ripen well, but Victoria growing on a south wall has behaved better this year, the fruits being delicious; still, it is a variety that cannot be recommended for a very favourable

position. On our south walls we have Sea Eagle, a noble Peach, although its flavour this season was not up to the mark, which might partly be owing to the drought and heat.

The fruits of advanced Nectarine ripened very early, and were of good flavour and colour, but rather small. If the fruits another season do not attain to a larger size, it will have to be removed to an easterly aspect. It might be well to give a few names of varieties, suitable for an east wall as a guide to planters. The trees, it should be understood, must be strong, healthy, and worked on suitable stocks, and may consist of Waterloo, Hale's Early, Condor, Grosse Mignonne, Alexandra Noblesse, Stirling Castle, Dymond, Goshawk, Walburton's Admirable, and Gladstone Peaches; and Nectarines, Lord Napier, Elruge, Stanwick Elruge, Pitmaston Orange, Pine Apple, and Humboldt. There are several others deserving of room. Peach Falcon at Barham Court, does well, and bears heavily annually; late-ripening varieties should go on to a warmer aspect.

The work of preparing borders should not be delayed, but everything should be got ready for planting, and on heavy land each station should be well-drained in some way; but on moderately light soils, artificial drainage will rarely be required, unless an impervious pan of soil exists, as is often the case, which has to be broken up so that the water may pass freely away. *H. Markham, Mereworth Castle, Maidstone.*



FIG. 80.—FIRST LEAF OF CALAMUS LEWISIANUS.
(SEE P. 460.)

A TRAVELLER'S NOTES.

(Continued from p. 428.)

FUJI-YAMA.—Platycodon round the base of Fuji is as common as Dandelions with us. As I have said, on the east side tons of Rodgersia could be collected; and with respect to Clerodendron, flowering bushes in the shrubberies on hill-sides are not uncommon. It is most handsome. I did not meet with it on Fuji.

Shortly before reaching Yashida we came to some fine groves of Pinus Thunbergi, certainly the best I have seen. The trees were not too close, nearly all from 70 to 80 feet high, with a fine head. Often the stem for 40 to 50 feet had no branches or foliage, and in every instance, at a few yards from the ground, it assumed the well-known brick-red tinge. These groves covered a large area, and were singularly handsome. To their stems clung Ampelopsis Veitchii and Aralia japonica.

Nearer the village a mound was surmounted by a good grove of Retinospora obtusa 50 to 70 feet high, and some Abies brachyphylla. Cryptomeria japonica was also good.

Immediately round Yashida were many fields of Mulberry bushes, cut hard back in the spring, the result naturally being strong young shoots. Sometimes rows of them were planted between Tea, Beans, or Potatoes.

The Mulberry is cultivated for the silk-worm—an immense industry around the whole base of Fuji and in the province of Kosu generally. The silk produced in this district bears the reputation of being heavier than any other in the country.

In the villages, in house after house, women and girls may be seen sitting at this season, winding the silk off the cocoons—a dozen or so of which are in

a small metal pan of water close by. Large flat round baskets of cocoons are spread about the floor as further supplies.

Yashida is a long narrow village, far from a railway—though it possesses a policeman and one jinrickshaw. It is quiet, picturesque, and sleepy, surrounded by glorious scenery—most conspicuous being the great cone of Fuji rising behind it.

From Yashida, mounted on an execrable pony, I skirted the base of the mountain, reaching at evening the village of Hitoana. There was no road,



FIG. 81.—FIRST LEAF OF LATANIA COMMERSONI.
(SEE P. 460.)

merely a narrow bye-path over now a grassy plain, now undulating ground, broken by great clumps of Pines, with low hills covered with greenery on either side. Hemerocallis, Enothera, Tiger Lily, Convolvulus, Hypericum, Geranium, Platycodon, Anthericum, Campanulas, and Scabious abounded in the wildest profusion.

Near Hitoana we entered a thick forest, chiefly of deciduous Magnolias, Quercus dentata, Maples, Carpinus, &c., often impassable without hatchets, so rank was the vegetation. Thunderstorms, so common round Fuji at this season, were frequent



FIG. 82.—RAPHIA VINIFERA, FIRST LEAF.
(SEE P. 460.)

during the day; the lightning and thunder were magnificent, and the rain fell in torrents. Not a house or a hut for miles, nothing but the forest, and the rain, and the coolie marching stolidly ahead, and being charged by my pony at every thunder-clap.

Before reaching our destination, the forest ended abruptly, astonishingly abruptly, and we found ourselves on a great plain many miles in extent, with scarcely a dozen trees to be seen. Such a sudden change seemed to me curious, and apparently without cause; the plain is covered with long grass 4 to 5 feet high.

At Hitoana there is no inn, so we put up with some priests, one of whom was enjoying his bath on the verandah; the bath was a tall circular tub, over which peeped his shaven head. A large section of the community subsequently entered the bath. A priest came to me, and though he went down on his knees and hands with the most polished courtesy, and begged me to try it, I really could not—being wet through was bad enough. I refused the second ordeal, and fear I deprived the villagers of a looked-for spectacle.

In most villages the roofs of the cottages are neatly thatched, with a layer of earth on the top. In this is frequently a tangled mass of *Iris japonica*; on two occasions I saw the Tiger-Lily. When these are in flower, the effect is curious and pretty.

Round the base of Fuji, in addition to those plants named, Maize and Tobacco are cultivated, and also, as in other parts of Japan, large patches of *Colocasia antiquorum*, for the tubers, which furnish a favourite article of food. Large quarters of *Edgeworthia papyrifera*, the peculiar brownish bark of which is employed in the manufacture of the tough paper peculiar to the far East, I here saw for the first time. From Hitoana up to the mountain is but a wood-cutter's bye-way, but hearing the forest on this side was densest, I determined to ascend, at least a short distance.

Leaving the village, we ascended a grassy slope to some 2000 feet. At first a small path could be found, the grass on both sides, rank and coarse, reaching our knees; but, subsequently, the local guide most successfully lost his way, and we wandered about up hill, down dale, and over dry torrent-courses, in strong, tall grass from 5 to 6 feet high, still trying to make the limit of the forest above us. The process was somewhat fatiguing. In three and a half hours we got to a wood-cutter's hut, on the forest limit, and after a rest penetrated some distance up the mountain. The aspect of the vegetation was totally different to that on the Gotemba and Yashida sides. I could scarcely believe a few miles off I had left a mountain slope, covered with *Abies*, with a thick and luxuriant undergrowth. I found myself, from the commencement, in a deciduous forest with trees of immense size, and of great age. Conifers were present, but rare. Fine specimens were numerous; great fallen trunks lay across a pathway, trod by none but a few wood-cutters. There being often little undergrowth, views were obtainable of the dense forest on both sides, rendered more impressive by the complete silence.

I have often noticed the almost entire absence of small birds in Japan; a few sparrows are occasionally met with, but other kinds are very rare. All I saw of Fuji seemed destitute of animal life; we did not even turn up a snake.

I again reached the railway, after leaving Hitoana at Suzu-kawa, some twenty miles distant. En route I noticed those crops already mentioned, the country bearing much the same general aspect.

The heat is not great in Tokyo; last night at 1.30 A.M., my thermometer registered outside the window, some 40 feet from the ground, 82°. To-day, at 11.30 A.M., in the same position, it marks 88°. James H. Veitch.

(To be continued.)

VANILLA CULTIVATION IN MEXICO.

THE cultivation, preparation, and trade in Vanilla have occupied a good deal of attention of late, and have been referred to more than once in our columns, so that the following note on Vanilla cultivation in Mexico, from the pages of our interesting contemporary, *The Chemist and Druggist*, will, we doubt not, be read with interest. There are no records (says our contemporary) to show when the cultivation of the Vanilla vine commenced in Mexico, but it must have been some time after the subjugation of the country by the Spaniards; for at the time of the conquest all the Vanilla used appears to have been gathered from wild plants. There is evidence, however, to show that in 1760 *vanillales*, or Vanilla plantations, existed near Papautla, which is still the chief centre of the industry. Six varieties of Vanilla are known in Mexico, namely, the Mansa, the Cimarrona, the Mestizza, the Pompona, the Puercio, and the Mono. Of these, the Mansa is the only one cultivated. The Cimarrona or wild Vanilla has a more pointed leaf, and a thinner stem than the

Mansa; the pod is shorter, rounder, and thinner. The Mestizza has more pointed leaves than the Mansa, but less so than the Cimarrona; the size of the pods is smaller than those of the Mansa, and larger than those of the Cimarrona. This variety is scarce, and when prepared it can hardly be distinguished from the Mansa. The Pompona (*siguexante*, or Banana Vanilla, as the Totonaco Indians, who occasionally eat it, call this variety), has larger and rounder leaves, and a stem one-half thicker than the Mansa; the pod is double the size, and triangular in shape, resembling somewhat a badly-nourished Plantain—it has an extremely pleasant smell, not unlike Anise, and is used in Havanna by the tobacco manufacturers to mix with cigars. The Puercio and Mono, which grow wild, and resemble the Cimarrona, are not used in commerce. There is yet another Vanilla, called the Tarro, or Bamboo Vanilla, which is considered by many as a distinct species, but it is really nothing else than the Mansa grown in the tarvales or Bamboo thickets, in the depths of the virgin forests, where it does not receive a sufficient amount of sun and air, and produces a pod thinner and longer than the ordinary Mansa. Formerly the Vanilla dealers distinguished several varieties and sub-varieties of the article; but at the present time the only grades recognised in commerce are the best class, the Cimarrona or wild Vanilla, and the rezacote or short, damaged, immature, and overcured pods. [One species is now producing its pods in the Economic House, Kew. Ed.]

MANURE FOR FRUIT TREES.

THERE are two methods of manuring, one spreading it on the surface, and the other ploughing or digging it in. As the result of long experience, it is found that much better results are achieved by surface-manuring than by the other method. In fruit trees, especially, this has been found to be the case. The top-dressing should be applied as soon in the spring as the frost is gone, or, at least, in time to get the benefit of the spring rains, which carry the fertilising material a little way beneath the surface of the soil. *Meehan's Monthly for October*.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

AUTUMN FLOWERS.—As the dark days advance, more attention will be required to keep up a succession of flowers for cutting and decorative purposes. We have in the various beautiful varieties of *Chrysanthemum* one of the most useful of autumn and winter flowers, but they do not please every taste, and a limit has sometimes to be placed on their cultivation, so that other useful plants are not pushed aside for them; and the question is sometimes asked, "Can you find something to take the place of these *Chrysanthemums*? I am tired of seeing these stiff stodgy plants with a few huge flowers; find something that grows in its natural form that I may get flowers from when I want them." This enquiry is to the fore in many gardens at the present time, where not only large blooms, but large numbers of stately specimens that must have house-room for some time, are grown. And another awkward question is where these big plants can be placed till they come into bloom. As a rule, they do not associate well with the usual greenhouse and conservatory plants; but what have we that can take their places during late autumn and early winter, or make so grand a show? Certainly we have the many beautiful varieties of *Primula sinensis*, *P. obconica*, *Erica hyemalis*, *Solanum capsicastrum*, sweet-scented *Pelargoniums*, *Cyclamen persicum*. For the intermediate-house, we have the brilliant *Bouvardias*, *Poinsettias*, *Salvia splendens*, *Cactus*, *Epiphyllum*, the double and single varieties of zonal *Pelargoniums*, the *Polyantha*, *Golden Fairy*, *Mignonette*, and *Perle d'Or* *Roses* come quickly into flower, and are most useful. Then in the stove are *Eucharis amazonica*, *Gardenias*, *Tabernaemontana coronaria*, *Pentas carnea*, *P. rosea*, *Libonia floribunda*, *L. penrhosiensis*, *Linum trigynum*, *Centropo-*

gon Lucyanus, *Eranthemum Andersonii*, *E. pulchellum*, and many others, besides brilliant foliage plants.

CAMELLIAS should now have a good supply of cold water to the roots and abundance of air. The plants are very early this season; some blooms of Lady Hume's Blush, *C. imbricata alba*, and the single white appeared some time since.

LUCULIA GRATISSIMA, if planted out, will need care in watering, as it must not be overwatered at this season, and the drainage of the border should be as good as possible. The same kind of attention is required by *Daphne indica*, which is a plant that is often killed by using a hose in watering.

EUPATORIUM.—The different varieties of these are very useful during the winter months for cutting purposes; they flower as well in pots, as when planted against a wall or pillar. These plants can be well-grown in loam two-thirds, and leaf-soil one-third; plenty of air and water being afforded, and kept clear of aphids.

SOUVENIR DE LA MALMAISON AND OTHER PERPETUAL-FLOWERING CARNATIONS should be fumigated once every three weeks, not waiting till green-fly is seen upon them. Great attention must now be paid to the watering, one application when they do not require it is often death to them. Continue to give air night and day, if flowers are required during the winter months. The earlier plants should be placed in a warmer house by themselves, and helped along with some kind of artificial manure.

THE FLOWER GARDEN.

By T. H. CRASP.

ANEMONE CORONARIA.—The first lot of corms of this plant may now be planted for early blooms on well-drained ground, which, if it be of a light nature, should have a liberal quantity of decayed cow-dung dug into it; but if heavy, leaf-soil or decayed stable-dung manure should be applied. The tubers should be placed at about 2 inches below the surface, and about 4 inches apart each way, which is best performed by throwing out the soil to the required depth. The claws of the corms upwards is the right way to plant them. When the corms are covered with soil, a thick layer of cocoa-nut fibre or half-decayed leaf-mould should be spread over it.

SHIRLEY POPPIES have been very fine with us this year, and the variety of colour exhibited by the flowers, and the softness and clearness of the same make them most desirable plants for the borders and for cutting. They should be taken from the plants in the early morning before they are fully expanded. These Poppies do not transplant well; it is therefore advisable to sow the seeds in a sheltered nook or cold frame, and carefully transplant the seedlings in the spring, better results being thereby obtained than if sowing be deferred till March or April.

BEDDING-PLANTS.—All plants required for stock may now be dug up and potted; and all rooted cuttings placed where they will be wintered. Stock should be taken of cuttings of *Coleus*, *Alternanthera*, *Iresine*, *Heliotrope*, &c.; and if the number is found to be insufficient for the needs of the garden or for propagating from in the spring, some of the plants still in the beds or those kept over in pots from last summer, should be lifted and potted up, cleaned, trimmed, and repotted into sandy peat and loam, and stored in a warm house on shelves close to the light. The 5 or 6-inch pots made use of for this purpose ought to be clean and well-drained, and the ball of earth secured with the plants taken up from the bed should not be larger than is just necessary to hold a fair quantity of roots. A little shade may be necessary for a few days if sunny. *Lobelia erinus*, in its many varieties, is best when propagated by cuttings or division in the spring; therefore, if plants in proportion to needs be lifted with a good ball of soil attached, and planted thinly in shallow boxes or pots in loamy soil placed in a close cold frame, and shaded for a time till they have got over the removal, and then placed on a shelf in a cool dry house, they will furnish plenty of cuttings. Tuberous-rooted *Begonias*, many of which will still be blooming, should now be lifted, and the best-bloomed plants made use of for decoration indoors.

DAHLIAS.—See that the named varieties are provided with labels, on which should be written the name of the plant, its height, and colour of the bloom. Dahlias may be used in the same manner as tuberous Begonias, if they are not too large, and the soil is sufficiently adhesive to allow of a good ball of soil being taken up with the roots. Some of the white varieties lift with fairly good results, and they are very useful in the greenhouse till the *Chrysanthemums*, &c., become more abundant.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

PRUNING APPLE AND PEAR TREES.—Make every effort to carry out this important operation at the earliest possible date, as, apart from the discomfort attending the work if left till the winter, it is better for the trees, and the work can be more efficiently done before the leaves (which are a guide for the proper thinning of the branches) are all off the trees. Pear trees being the first to shed their leaves, should be taken in hand first, and where summer-pruning received proper attention, little will now be required beyond thinning out well all weak branches in trees which have become too dense, and shortening back the leading growths. It is no uncommon thing to see pyramid Pear trees where the branches have been allowed to grow much too long, and consequently under a crop of fruit they are either bent down very much, or much labour is required in propping them up. Such trees should now have all the branches shortened back to such a length as will be capable of supporting a crop of fruit. On large branches, which may require a pruning-saw, the cut should be smoothed over with a sharp knife, and it will then quickly heal. Apples should be treated similarly, such dense-growing sorts as Cox's Pomona, Waltham Abbey Seedling, Gascoigne's Seedling, The Queen, Lane's Prince Albert, &c., need special attention in thinning the branches. The inside fruit from such sorts, if the trees are left in their natural dense state, lacks firmness of flesh, and consequently does not keep so well as that produced nearer the extremities of the branches. The mulching which I advised early in the season should be placed over the roots, may be left until the pruning is finished, which in the event of wet weather will prevent the soil from sticking to the boots. It should then be cleared off and the ground left tidy for the winter.

STRAWBERRIES.—All except the newly-made plantations should receive copious supplies of liquid manure, which, after the recent rains, will be easily obtained, and especially where provision is made for catching the drainings from dung-yards, hot-beds, &c. This practice is more commendable than the common one of applying a heavy dressing of manure between the rows, which, besides providing shelter for slugs, also deprives the ground of the sweetening and other beneficial effects to be obtained from its exposure to frost.

ARREARS OF WORK, ETC.—Any work of root-pruning, lifting, and replanting of Apricot, Peach, and Nectarine trees, or transplanting trees, as advised in recent calendars, should be completed as early as possible. Trees to be obtained from the nursery should be ordered at once, and when this is done, prefer the request that they be forwarded so soon as the lifting of trees commence. When it is convenient to do so, it is advisable to visit the nursery and select your own trees, selecting only such as seem to be on suitable stocks, which is best indicated when the head does not overgrow the stock, and *vice versa*.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

MASDEVALLIAS.—The *Chimæra* section of *Masdevallias* which were grown in the cooler *Odontoglossum*-house up to the present time, will be best accommodated for the future in warmer quarters, it not being safe to leave them any longer where they are. The *Cattleya*-house forms a suitable place for them, or better still, the *Miltonia vexillaria* house, there being more special moisture there. The watering of *Masdevallias* needs much carefulness, and it is better to afford just as much and no more as will keep the moss healthy and growing, more than this would probably cause "spot." *Masdevallia Tovarensis* is another species that should

be placed with the above, and watered as carefully, too much water causing loss of leaves. This last species is with us showing the new flower-spikes, and buds are issuing from the old spikes. The small species of shell-snails devour the new spikes and buds, and must be caught. *Miltonia vexillaria* should now be in active growth if the plants were potted when advised. The air of the house should be moist, dryness soon causing thrips to appear, which disfigure the leaves, and render the plants unhealthy, and getting into the new growths, are not easily dislodged. *Odontoglossums*, *Miltonias*, and *Phalanopsis*, after this date, should be placed at the cool part of the stove, or where the warmth is not less at night than 60°. *Odontoglossums* and *Miltonia Rozii* winter well in such a house. Before removing the plants, free them from yellow thrips, which are insects that increase fast in a dry and warm atmosphere; all parts just round about these plants should be well damped once or twice a day, and the plants themselves be dewed over on fine days. The *Miltonia vexillaria*-house is a suitable place to put the following plants in during the winter, but they may be grown in the summer in any house that can be kept cool, viz., *Dendrobium Jamesianum*, *D. infundibulum*, *Odontoglossum grande*, *O. Inseleyii*, *O. Kramerii*, *O. naviun majus*, *O. blandum*, *O. nebulosum*, *O. Erstedii*, *O. cirrhosum*, *O. Peacatorei*, *Ada aurantiaca*, *Cymbidium eburneum*, *Pilumna fragrans*, *P. nobilis*, *Restrepia antennifera*, *R. Dayana*, *R. maculata*, *Sophronites grandiflora*, *S. cernua*, *S. violacea*, *Trichopilia coccinea*, *T. suavis*, *T. tortilis*, *Lælia Dayana*, *L. præstans*, and *L. marginata*. The *Lælias*, which should now be in flower, come in at a time when other flowers are getting scarce. Plants of *Dendrobium formosum giganteum*, *D. Phalanopsis*, *D. P. Schroderiana*, and *D. bigibbum*, are now making a grand show.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

PINES.—It is a practice, not uncommon at this season, to generally arrange all Pines into batches according to their different stages of growth, that there be little work among them during the short days, except to supply the necessary moisture, heat, and air. Any showing fruits are placed first, and then successions to come into fruit after the turn of the year, and afterwards those which are to show fruit in spring and onwards, and if young plants have well filled their pots with roots, they should be potted, in order to prevent them becoming pot-bound. If any potting has to be done now, and the soil is of a close, heavy texture, it is well to mix a little sand through it, with a liberal addition of charcoal. Good drainage is of great moment, and it is not desirable to mix manure of any sort with the soil at this season, except it be a small portion of soot, which, if dusted over the moss or fibre from turf put over the crocks, will prevent the ingress of worms. Where leaves are used to retain bottom-heat, it is well to put them in a heap, and kept carefully turned till they are at the stage of heat desired. Newly-fallen autumn leaves are often used, but in such cases they should not be from Lime trees, or any such soft foliage, which heat quickly, and soon sink again. Oak and Beech maintain the most even and lasting temperature. Where good tan can be had it costs less labour than leaves. It should be rather dry before being added to the beds, and not allowed to heat violently. If stable manure is depended on for surface-heat by means of linings, it may be mixed with good leaves, and allowed to become warm before it is used. The manure is more lasting when a good portion of leaves are added to it. The temperature of plants swelling fruit may be allowed to fall during cold weather between 65° and 75° in absence of sun, and this is a safe temperature in mild weather. For young, newly-rooted plants, a temperature of from 60° to 65° need not be exceeded, except during sun or mild weather. But a rise of 10° or 15° for a few hours in the afternoon, by means of sun, is helpful to growth, and a little air admitted daily assists materially to keep the plants firm, and the growth healthy; 75° to 80° is enough for bottom-heat for all growing stock during winter, but the fruiters may have 5° or 7° more. To give flavour to fruit, the roots should be kept rather dry, and warm dry air should circulate among the plants. Syringing is little practised during late autumn and winter, and may only be done when fire-heat is regular in use.

CHERRIES.—The trees for supplying early Cherries should now be resting, and if they are in pots

the drainage should be examined, inert surfaces of soil removed, and replaced with good turfy loam, in which some suitable artificial manure is mixed, and all useless wood and worn-out spurs should be removed with a sharp knife. The trees should be kept from heavy rains. Trees planted out in the houses should be kept as cool and dry as possible. Those which may be inclined to grow gross may be lifted and replanted firmly in good loam, and some lime rubbish mixed with it. Trees in pots to supply fruit by means of glass protection only, should remain plunged behind a hedge under complete rest.

CUCUMBERS.—Plants for supplying fruit during winter, which have been recently planted out, and now having rooted well into the new soil, should be allowed to grow slowly with plenty of light and air admitted. They should be kept thin, and any blossoms be taken off till the plants are well-established; bottom-heat need not exceed 75° to 80°. Established plants should now be fruited lightly.

MELONS.—Plants which are ripening fruits should be kept moderately dry at roots and atmosphere, with a free circulation of warm dry air. Keep laterals thin, and give no liquid manure.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

STORING ROOTS.—Though late in completing their growth this season, most kinds of roots will at about this date be ready for lifting. The secret in keeping such vegetables in a fresh tender state, is to prevent the waste of their juices in making untimely growth. Carrots should be taken up, like all other roots, in dry weather, and laid on the ground for a few hours to dry, so that the soil adhering to them may be easily rubbed off; they may then be placed in a cool, dry, frost-proof cellar. If the place in which Carrots are kept be not cool, growth soon commences. Parsnips may be allowed to remain in the ground a while longer, though a few roots should be taken up when the weather is fine if they are needed thus early in the season, but the Parsnip is a winter vegetable which is best flavoured after frost has touched it. Beetroot, being more tender, should be stored similarly to Carrots, care being taken not to break the roots nor to cut off the top too short, so as to cause loss of juices. Scorzonera and Salsafy may be taken up late in the month, storing them, like Carrots, in partially dry sand, &c.

SPINACH.—Late sowings are making rapid progress since the rain, as also are the weeds, and hand weeding must be resorted to if the land be too wet for hoeing. If crowding of the plants is feared, some amount of thinning-out will be necessary.

ASPARAGUS.—A gentle hot-bed may be made up for forcing Asparagus. When it has attained its maximum degree of warmth, and has declined to about 85°, the roots should be lifted, and, without allowing them to get dry, packed pretty close together on a 6-inch layer of leaf-mould laid on the surface of the bed, which should previously have been turned over, and levelled, and brought up to within 1 foot of the glass, by the addition of warm tree leaves, from the fermenting heap. As the placing of the roots take place, leaf-mould, or some light soil should be tucked in firmly about them, and thorough watering afforded, with the water at not less than 90°. The crowns should be very carefully removed from the beds or lines in the open ground, by opening a trench 2 feet deep, and undermining them with a steel fork, being as saving of the roots as possible, as their loss means poor return in shoots.

CELERY.—The plants should be earthed as fast as they require it when the soil is in a moderately dry condition. Mould up the plants first by the hand or a trowel, or tie them up with matting so that no soil gets into the hearts. Matting or cord used for tying should always be removed when the earthing-up operation is finished. Celery intended to stand the winter, should have at least 18 inches of earth put on each side to exclude frost—but of that more anon.

POTATOS.—Where young tubers are required at a very early date, some of the most forward sets of Ashleaf may be started in a warm light situation, but as this variety does not grow regularly, the most promising tubers should be selected for early planting.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Plants, Fruits, &c., to be Named.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be good ones, carefully packed and numbered, and not more than six should be sent at one time. Leaves only, or Florists' varieties cannot, as a rule, be named.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	Oct. 16	Azaleas, Palms, and Ficus from Belgium; Roses, Greenhouse Ferns, &c., at Protheroe & Morris' Rooms.
		Dutch Bulbs at Protheroe & Morris' Rooms.
TUESDAY,	Oct. 17	Unreserved Sale of Greenhouse, Herbaceous and other Plants at Stanmore Park Gardens, Stanmore, by Protheroe & Morris.
		Sale of Thriving Nursery Stock at the Cart House Lane Nurseries, Woking, by order of Mr. R. Collyer, by Protheroe & Morris. (Two days.)
WEDNESDAY,	Oct. 18	Dutch Bulbs, Lily of the Valley, Crown Spireas, Roses, Plants, &c., at Mr. Stevens' Rooms (four days).
		The Langford Park Collection of Orchids, at Protheroe & Morris' Rooms.
THURSDAY,	Oct. 19	Dutch Bulbs, at Protheroe & Morris' Rooms.
		First Consignment of Liliun Auratum and others from Japan, 550 Azaleas, Palms, 30,000 Lily of the Valley Crowns, and 100,000 Palm Seeds, &c., at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 20	Dutch Bulbs, at Protheroe & Morris' Rooms.
		Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 21	Dutch Bulbs, at Protheroe & Morris' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—50°·1.

A new
"break" in
Potatoes.

The following letter from Messrs. SUTTON, of Reading, requires no preface, and the importance of the subject, no explanation. We

hope to have other opportunities of alluding to the matter, but in the meantime confine ourselves to the publication of Messrs. SUTTONS' letter:—

"The crosses made ten years ago proved not to have been made with the true *Solanum Maglia*, but with a form of *Solanum tuberosum* growing for many years at Kew, and supplied by them to

Lord CATHCART, and the large batch of seedlings you saw nine years ago lost much of their interest. We were determined, however, not to be beaten, and having brought from Kew the true *Solanum Maglia*, set to work to get hybrids from it.

"In 1887, at least 1000 crosses were made, using the pollen from the true *Solanum Maglia* upon a cultivated Potato, but the only result was three grains of seed, only two of which proved fertile. These two seeds produced two plants, one much like the *Maglia* parent in every respect, but with weaker foliage, and small tubers. The second was so delicate, that for three years we had to keep it under glass, but last year and this, having planted it in the open, it has taken a new lease of life, and produced remarkably fine tubers, larger and handsomer than those of many cultivated varieties. Hybrid No. 1 remains much as it was the first year; but taking pollen from it, we have two series of crosses with the cultivated varieties, which, though resembling the *S. Maglia* in some respects, give extraordinary promise of new commercial varieties, being more prolific than some of the best English forms alongside."

Gardeners, Past
and Present.

It is no uncommon thing to hear the older men in the profession lamenting the degeneracy of the present race of head gardeners, railing at them for their assumed shortcomings, and making unfavourable comparisons between them and their forefathers, a somewhat profitless occupation, and one that can in no way help to make matters other, or better, than they are. That there were giants in those days, will be conceded by every one of us old enough to remember the grand old men who exhibited plants and fruits at the few horticultural exhibitions of that period, notably at the Horticultural Society of London, now the Royal Horticultural Society of Great Britain. Gardeners, in most points, as good as they, but who have not to act the part of pioneers and discoverers in cultivation—that part of the business having in great part been already done for them by those earlier practitioners—are to be found not in twos and threes, but in scores all over the country, and their productions are to be seen, not only at the Royal Horticultural Society's shows, but at all the best shows in the provinces, and these must number fifty, as against one, half a century ago.

The general average of horticultural excellence of to-day is higher than formerly, and it is in constant increase, thanks to a more general diffusion of knowledge by means of the gardening press, the numerous works on gardening in general, and special treatises. The young men and boys who enter the profession are better equipped for assimilating that which is taught them, or which comes under their observation. Speaking from experience, we think the younger men are deficient in the management of plants that pertain to out-of-door gardening—a department the gardeners of long ago were far better versed in.

A few of the more important matters in this part of private gardening may be mentioned here. A satisfactory acquaintance with the culture of outdoor fruits, especially stone fruits on walls, which, owing to the persistence with which horticultural builders and cultivators in general have recommended glass-house protection for Peaches, Nectarines, Cherries, &c., has fallen into the background as a subject of great importance. But we know that the generality of our summers are sufficiently warm to ripen on walls, south, east, or west, all of our varieties of Peaches except the very latest, and a comparison of the cost of management under each method of culture is certainly in favour of the walls; and

provided a proper selection of early, mid-season, and late varieties be made, the season during which fruit can be enjoyed is longer than from trees under glass protection.

In the matter of kitchen-garden management we have not, perhaps, retrograded; but then we have advantages and aids that did not at that time exist. These consist of the large number of artificial manures now made, from which the sort best adapted for certain classes of soils and the needs of certain kinds of vegetable can always be chosen, provided the gardener has the ability to decide. Then the plan of furnishing gardens with a system of pipes for the distribution of water is now very general; and the duty having long been taken off glass, frames, hand-lights, cloches, ground-vineries, Paxton-houses, and a host of other contrivances of which glass forms the chief portion, have now come into use in the kitchen and forcing garden.

The various kinds of vegetables in use in British gardens have been much improved in size, if not in variety, flavour, or beauty. We have only to instance Peas, Runner Beans, Cabbage Lettuce, Spinach, Potatoes, Tomatoes, Cucumbers, Cauliflowers, and to a slight extent Broccoli, French Beans, Cos Lettuce, Melons, Rhubarb. Some of these enable the gardener to lengthen the season at which vegetables are obtainable without forcing at the commencement and at the end. Potatoes have greatly gained in cropping qualities and in form, if not in flavour. The Ash-leaf Kidney and the Lapstone amongst early and mid-season kidneys, and the Regent amongst rounds, have not been excelled for table qualities; but the food of the nation has been enormously increased by the introduction of new varieties at home and from America.

In Grapes the general excellence has risen, but we have still to learn how shanking is to be avoided. We are not much better instructed in the proper manner of making a Vine-border than formerly, although the consensus of opinion as to depth is in favour of shallowness, and as to materials, of but few. We have discarded the carcasses of dead animals as affording proper manure for the Vine-border, preferring wholesomer plant-food, good drainage, and plenty of water when the Vines are growing; and the old belief in the benefit of depriving Vines and other fruits of root-moisture during the winter is losing its hold of the better cultivators.

Hardy trees and shrubs, especially deciduous shrubs of much value in gardens for their flowers, need special attention from gardeners. Generally the right methods of pruning them, and how to put them to the best use in decorating a garden, do not receive the fullest attention. They are too often looked upon as being good enough to form a shrubbery, which in most cases is employed to shut out undesirable objects—a rough, untrimmed hedge, in fact, crowded together at top, and as a consequence starved at the root.

Another common, we think, almost barbarous mode of employing shrubs of this kind, is to plant at rather wide distances apart, yet not sufficiently wide for full development, and then trim them into formal shapes annually, before the time at which they usually flower, and dig deeply around and close up to them so as to weaken the plants by cutting off most of the surface. This, by the way, is much practised in some of the London parks. Now, a knowledge of the capabilities of shrubs as beautiful objects in the garden, and how these can best be brought out, is very much required by the young gardener of to-day; and it is one that was once much better understood, and one of the reasons for the former preference



VIEW IN THE CONSERVATORY, BOTANIC GARDEN, MANCHESTER.

for the Scotchman as gardener was his fuller and more complete training in out-of-doors gardening. If employers would show greater appreciation for the cheap, natural beauty of out-of-door shrubs and trees, we should soon see improvements in this department.

We hear much from old men of the glories of the old Chiswick shows—the grand Cactuses from Cheam which GREEN used to bring, the New Holland plants, the Pelargoniums, the fine Fuchsias; but what are these beside, let us say, for example, the glorious Oroids, the magnificent Palms, pot-grown Roses, the immense array of zonal, tricolor, fancy, show, and decorative Pelargoniums; the numerous varieties of Narcissus, Hippeastrum, Cliveia, Gladiolus, Delphinium, Primula, Cineraria, Gaillardia, Pyrethrum, Chrysanthemum, and greenhouse Rhododendrons of to-day? These are mostly the productions of the present, and gardeners may well be proud of them; only we do assert that whilst they have been doing all this, and adding immensely to the number of the inmates of the glass-house and the flower-border, they have not given much thought to cultivation of hardy plants. Perhaps it is too much to expect of them, especially as they have to take cognizance of much more than we have touched upon, viz., the foliage plants of the stove and greenhouse, and the multiplicity of tender plants still used in summer bedding.

Can it be said that gardeners have retrograded in matters of cultivation? Those who retain a fondness for certain species of plants, once cultivated very generally in gardens, but whose cultivation is now much less understood, or at least practiced, will say that it has done so; but have we any right to say that, because gardeners do not grow this, that, or the other plant, they could not do so if the fashion set in again in their direction?—we think not. There will always be found gardeners who would not let drop the cultivation of Ericas, Boronias, Hakeas, Tremandra, and New Holland plants generally, that have pretty flowers; or of Azalea indica, or of the Pine-apple, because we can get fair fruit from Teneriffe or the West Indies. It is a case of like employer like gardener. Let but the gentleman or lady owning a garden desire this or that attainment in a gardener, or to have banished formality and inelegance from the garden, and well-kept borders and beds of the beautiful hardy herbaceous perennials in place of the usual tender exotics; or enjoyable effects obtained by simple means at small cost; or plenty of hardy fruits on trees out-of-doors, and well-kept orchards; the men who can perform these things in a reasonably satisfactory manner will be forthcoming; but, as a rule, the employer should be ahead of the gardener in the knowledge of the appropriate, the æsthetic, and the beautiful, and, as it were, fix a standard of excellence to which the latter may aspire.

MANCHESTER ROYAL BOTANICAL GARDENS.

—(See Supplementary Illustration.) Whatever Mr. BRUCE FINDLAY, the genial and clever Curator of the Manchester Botanical Gardens, does, he does thoroughly and well, and those who can call to mind the plant department of the early days of his curatorship, and the superb and well-arranged collections found there at the present day, will not fail to wonder how such great and radical changes could have taken place whilst the various departments of these beautiful gardens were not only kept going, but were actually being improved at every point. The flower-show fixtures, too—which, while constituting a great aid to horticulture and adding to the fame of the gardens, are certainly an element detrimental to the permanent establishment—have under

the guidance of Mr. FINDLAY, also steadily improved, until now they are of the best and most useful in Europe. The fact is, Mr. FINDLAY is a thoughtful worker, who, when a big undertaking is in hand, has everything carried out to a previously-arranged plan, and the difficulties having been seen and provided for, the rest of the gardens do not suffer. Every part of the gardens is kept as neat and orderly as the best private establishment could be, and floriculture and botanical subjects are well represented. At different times we have seen houses filled with well-grown Chinese Primulas, Cyclamens, Pelargoniums, Chrysanthemums, Bouvardias, and other florists' flowers cultivated up to market quality, while at every point in the lofty conservatory and Palm-houses such views as that given on our supplementary sheet meet the eye; the central portion of the Palm-house being occupied by some magnificent specimens of Seafortias and other Palms and Tree Ferns, which rear their graceful foliage to the highest point, and present together a truly tropical scene. The Fern rockery is also a noble piece of work, and the manner in which it has been planted renders it one of the most beautiful arrangements of its kind in the country. In the Orchid-houses, although a general collection of Orchids is not to be found, there are always interesting plants in bloom. Whenever one may, the gardens are always nice, and their amiable Curator ready to give information in his own easy pleasant manner.

INTERNATIONAL EXHIBITION AT LYONS.—It has been arranged to hold a universal, international, and colonial exhibition at Lyons, in 1894, and to include a section devoted to horticulture. There will be a permanent horticultural exhibition open from April to October, divided into sections, including exhibits relating to all branches of horticulture, arboriculture, and market gardening, as well as various temporary "concours," which are to be held every month, and to last for a week. The several classes are open to anyone employed or interested in plant-culture, amateurs as well as professional florists, fruit-growers, market-gardeners, &c. All countries are invited to exhibit. The exhibition is under the direction of M. Faure the President, M. Gérard, Vice-President, and M. Ant. Rivoire, Secretary. Applications for space in the horticultural section should be directed to M. J. Claret, Palais Saint Pierre, and other communications to the Conseil Supérieur de l'Exposition, Lyons.

THE ROYAL GARDENERS' ORPHAN FUND.

Intending subscribers are respectfully reminded that the collecting cards recently issued amongst the gardeners and general nursery trade throughout the country, should be returned during the next month. It may be again stated that every 5s. collected will secure a vote for the next election, and every £5 a vote for life. It is earnestly hoped that a very liberal response may be made to this appeal in order to meet the requirements of the present year. Collecting cards may still be obtained on application to the Hon. Secretary, or any member of the committee. *A. F. Barron, Hon. Sec., Chiswick.*

—An evening concert will be given at the Assembly Rooms, Sarbiton, on Wednesday evening, October 25, in aid of the Royal Gardeners' Orphan Fund. Concert to commence at 8 P.M.

CHRYSANTHEMUMS IN THE PARKS.—The exhibition of Chrysanthemums by the London County Council will be opened to the public in the Frame Ground of Battersea Park on Saturday, October 14. The Superintendent states that the show will be much better in a week's time, but by opening on the 14th, an extra Sunday will be given, and the public allowed to see the show from its commencement.

"BOTANICAL MAGAZINE."—The plants figured in the October number are Rhododendron Falconeri var. eximia, t. 7317. A pink-flowered variety of this noble species, one of the hardest of the Sikkim species.

Dolichos simplicifolia, t. 7318.—A very curious tropical African species, with large fleshy rootstocks, from which proceed long slender branches bearing narrow lanceolate leaves, representing the terminal leaflets of a compound leaf, but of which the side leaves are not developed. The Pea-shaped flowers are shortly stalked, and borne in clusters in the axils of the leaves. The plant is a native of tropical Africa. Kew.

Cypripedium montanum, t. 7319.—A Californian species, differing from *C. pubescens* mainly in having a white, not a yellow lip. Hort. ELWES.

Tillandsia microziphion, t. 7320.—A new species from Monte Video, differing from *T. stricta* mainly in its shorter leaves. The leaves are linear, the flowers blue. It was discovered and introduced by M. ED. ANDRÉ.

Phalenopsis tetraspis, t. 7321.—Closely allied to *P. speciosa*, but differing in the lobes and appendages of the lip. Flowers white.

DENDROBIUM.—Mr. H. J. GOEMANS has republished, from the *Revue de l'Horticulture Belge*, his synopsis of the cultivated species of Dendrobium. The species are arranged alphabetically. No descriptions are given, but indications of the native country, altitude, date of introduction, period of flowering, requisite cultural details, and other particulars are given in the form of a systematic table, which will be of value to growers. It may be had of M. AD. HOSTE, Ghent.

EARLY FLOWERS.—On October 3 we saw in bloom in the establishment of ED. PYNARET VAN GEERT, many plants showing the effect of the exceptionally high temperature of the past summer. We may mention *Azalea mollis*, *A. indica*, *A. ponticum*, a *Rhododendron*, *Berberis stenophylla*, and *Viburnum Tinus*, many of which last were just coming into bloom; *Andromeda*, and—in the houses—*Camellias* during the last fortnight.

A SECOND STRAWBERRY HARVEST.—Numerous baskets of Strawberries have been shown since the end of September by the fruiterers of Liège. These Strawberries, which fetched from two to two-and-a-half francs per basket, are produced in the neighbourhood, and are the second crop of the season. They have less flavour and excellence than those gathered in the summer.

GRANTS FOR AGRICULTURAL AND HORTICULTURAL EDUCATION.

—The Report of the Board of Agriculture on the administration of the Parliamentary grant in aid of agricultural and horticultural education in Great Britain during the financial year ending March 31, 1893, has been issued, and shows that the sums distributed to the thirty-four colleges, schools, institutions, or societies established in the country amounted in the past year to £7425. This sum contrasts with £6705 in 1892, with £4840 in 1891, and with £4585 in 1890. As in previous years, the grants have been applied to aid in the provision of the scientific and practical training essential for the higher teaching of agriculture, while endeavours were also made to facilitate on a wider scale the acquisition of more elementary agricultural knowledge by rural schoolmasters and lecturers now largely engaged in the local work of technical education. The technical training both of pupils and of actual workers in single branches, such as dairying, forestry, and fruit-growing, has been again aided, and the outlay both of societies and teaching institutions, on the provision of centres of illustrative experiments has again demanded no inconsiderable share of the grants.

THE BEGONIA.—If this is now becoming a somewhat hackneyed theme, at least it did not lack charm and interest in the hands of Mr. JAMES MARTIN, the Messrs. SUTTON & SON's able Begonia grower and nursery foreman at Reading, who gave to the members of the Kingdon Gardeners' Association on the 3rd inst. a delightful address, illustrating it with the aid of numerous plants representing species and varieties that had been employed for cross-breeding, leading down to the production

of the present fine Reading strains. A very hearty vote of thanks both to the Messrs. SUTTON & SONS and to Mr. MARTIN was awarded. The President, J. P. TREW, Esq., of Surbiton, occupied the chair, and there was a large attendance.

ALLOTMENTS AT KINGSTON-ON-THAMES.—The Corporation of this town having recently received a very largely-signed memorial in favour of the provision of allotments, at its last meeting agreed to purchase 11 acres of ground within the borough boundary, a small portion of which is to be used for the erection of an isolation hospital, and the remainder for allotments. It is possible that the contiguity of the hospital may at the first prove a deterrent, but after those who desire allotments get over their alarm and realise that science can make the contiguity of such a hospital comparatively innocuous, that the plots will be at once taken up. It is now a capital time to make the provision, so that the allotments may be entered upon at the beginning of the new year.

WINE MAKING IN AMERICA.—We learn from *Meehan's Monthly* for October, that Mr. ELWOOD JOHNSON, of Germantown, Philadelphia, has a bottle of wine made in 1760, from American species of Grapes, which is probably the oldest sample of native wine in America. The Frost Grape was probably used.

"ORCHID REVIEW."—The October number of this publication opens with an allusion to *Cypripedium Charlesworthii*, which was figured in our last issue, p. 437. The history of Orchid hybridisation is continued, and an account of the origin of *Cypripedium* × *vexillarium*, *C.* × *Arthurianum* is given, together with a considerable amount of *Cypripedium* lore of a miscellaneous character.

"LINDENIA."—The September number of the above, now before us, contains:—

Cymbidium grandiflorum, Griff., var. *punctatum*.—A native of the Himalayas, where it is found at heights between 5000 and 7500 feet. The leaves, which reach a length of 2 feet, are acute, and 1 inch to 1½ inch broad, and strongly striped with pale and bright green along their sheathing base. Flowers, seven to twelve, on a stout more or less drooping scape, measuring from 5 to 7 inches across in some forms. Petals and sepals are spreading, oblong, and acute, uniformly pale green in the type, but dotted near their base in *punctatum* with dark purple. The somewhat villous lip is tinged with pale yellow usually, but in the variety it is of a brighter tint, and spotted with purple; the front lobe almost rounded, wavy, and lobulate at the margin. The disc bears two long longitudinal hairy plates, extending from the base nearly to the base of the front lobe.

Odontoglossum Triomphe de Rambouillet, Hort.—A superb form of natural hybrids allied to *O. crispum*. Its segments resemble those of *O. Ruckerianum*, and it has the same rosy hue, which is particularly bright on the borders of the sepals and petals. Large purple blotches on the ground colour give distinctiveness to the bloom.

Galeandra Claesii.—This species has very slender pseudobulbs, 10 to 18 inches long, cylindrical, hardly fusiform, with inflated knots at short distances apart, not inflated, pale bluish-green at first, then deep green. Leaves bluish-green, five to seven in number. Inflorescence 9 inches long, the upper part drooping; sepals and petals vinous purple; lip vinous purple towards the extremity, then paler, passing to yellowish-green at the spur.

Cymbidium Lowianum var. *superbissimum*, which differs from the type in having a much brighter front lobe of the lip, which is coppery purple-red, very dark at the margin, forming a fine contrast with the colour of the other segments. It made its appearance this year in the importations of L'Horticulture Internationale of Brussels.

FLOWERS IN SEASON.—We have received from Messrs. CRANE & CLARKE, florists, March, two varieties of new Tree Carnations, specially fragrant,

and well-formed; the one, *Grace Battles*, is of light rose-pink, with serrated margin to the petals, full, and of fair size; the other, *William Scott*, is a larger and also well-formed bloom, of a deep cerise—a very desirable variety.

STOCK-TAKING: SEPTEMBER.—It was at one time an article of faith, that the consumption of chemicals was a fair index to the condition of trade in the United Kingdom; last month there was a larger falling-off in the amount of chemicals imported—therefore, of course, trade is bad! How stands the fact? The imports show a decrease to the amount of £107,369, as compared with the month of September last year—much of this is attributable to the falling-off in the imports of livestock and the depreciation in the values of other food supplies—not omitting chemicals! Exports show advance of £670,730. Of this latter, more anon. We extract the following from the "Summary" table of the Trade Returns for last month:

IMPORTS.	1892.	1893.	Difference.
	£.	£.	£.
Total value for month	£31,485,305	£31,377,938	—107,369
§II.—(A.) Articles of food and drink—duty free ...	12,127,503	12,008,558	—118,945
(B.)—do., dutiable	2,520,935	2,234,960	—285,975
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	2,228,117	2,417,330	+189,213
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,129,463	4,031,494	—97,969
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,007,458	1,219,028	+211,570
(B.)—Parcel Post ...	34,672	46,764	+12,092

It would be unfair not to make mention of the fact that, though six items in the import table show a decrease, the other six of the dozen, constituting the summary, show an increase. Always interesting are the figures in connection with fruit, roots, and vegetable supplies from the colonies and abroad, extracted from the general mass of figures, as follows:—

IMPORTS.	1892.	1893.	Difference.
Fruits, raw:—			
Apples ... bush.	405,825	307,642	—98,183
Cherries	150	—	—150
Plums	109,094	115,786	+6,687
Pears	197,493	207,303	+9,810
Grapes	195,135	214,299	+19,164
Unenumerated ...	122,137	107,149	—14,988
Onions	503,284	555,213	+51,924
Potatoes ... cwt.	87,555	37,303	—50,252
Vegetables, unenumerated, raw, ... value	£91,211	£89,609	—£1,602

The lack of "enumeration" in vegetables is a thing to be deprecated; but we must pass on to the next item of

EXPORTS.

under which heading, as already stated, there is a falling off in the present month, amounting to £670,730, principally in textile, raw materials, and in metals, and manufactures therefrom. Our success as a great manufacturing nation depends to a great extent on cheap fuel as well as cheap raw material—the latter we have in abundance, the first is "blocked," and the price of that sent to market puts a stop to machinery in most branches of manufacture. There can be no improvement in trade whilst the terrible coal strike exists. Nowadays, there is no gardening establishment of any size but feels the baneful effects of dear fuel. The present barbaric system of arranging trade difficulties stops the loom, the hammer, the locomotive, and both coasting and sea-going steam vessels; but the daily press have enough

to say on this subject, and to spare. Beyond the reduced exports of British and Irish manufactures, there is a falling-off in the exports of foreign produce from the great world's emporium—freights will not pay at the cost of fuel to carry them. One item may be noticed in the matter of wood exports: the Germans are sending by way of Trieste into the eastern world quite a large supply of parquet flooring; much of this is doubtless on British account. Canada and Tasmania—other colonies also—have immense stores of the necessary raw material; splendid wood-working machinery can be had from home, labour is cheap enough, surely, and the waste made in lopping and squaring-up would be almost sufficient fuel for the motor. Perhaps our friends at the Antipodes and elsewhere will make a note of this; there is a good deal of gold on the earth's surface. Notwithstanding the gloomy look of things at home, our trade is not in a sick condition—only good-feeling is lacking, and may triumph ere our next stock-taking.

PRESENTATION.—When it became known a few weeks ago that Mr. RUSSELL was about to retire from the post of head gardener at Poltallock, Loch Gilthead, Argyllshire, and leave the district, after thirty-nine years' service, his many friends decided to present him with some tangible acknowledgment of the respect and esteem in which he was held in Kilmartin parish. On Monday evening, the 2nd inst., the subscribers, including Mr. R. A. MEIKLE, factor on the estate, the Rev. J. DEWAR, M.A., B.D., minister of the parish, assembled at the Kilmartin Hotel, and presented Mr. RUSSELL with a valuable gold watch, bearing a suitable inscription. Mrs. RUSSELL was also presented with a very chaste diamond-and-gold brooch.

LA SEMAINE HORTICOLE.—Under this title M. LUCIEN LINDEN intends to publish a weekly Horticultural Journal on the model of the English journals. The *Illustration Horticole* and the *Journal des Orchidees*, will both be merged in the new, journal, which will make its first appearance in January. We await the new comer with sympathetic interest.

GARDENING AND FORESTRY EXHIBITION.—On Monday evening, October 9, Mr. HARRY TURNER, of Slough, was entertained at dinner by a number of friends at the Gardening and Forestry Exhibition, in recognition of his services as President of the Horticultural Section of the Exhibition. Mr. H. E. MILNER presided, and warmly eulogised Mr. TURNER's services in organising the numerous floral exhibitions that have been held during the season, and in the decoration of the gardens. A handsome epergne was presented to Mr. TURNER as a memento of the occasion.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1893-94 will be held on Monday, November 13, 1893, when the President, Mr. CHARLES J. SHOPPEE, will deliver an opening address. The chair will be taken at 8 o'clock.

AN INTERESTING EXPERIMENT WITH VEGETATION.—The air which is contained in the interstices of the soil is well known to be richer in carbonic acid gas than the atmosphere. In soil that has recently been manured with stable droppings, &c., the proportion may reach ten per cent. The experiments made by BOEHM some years ago appeared to show that a large proportion of carbonic acid gas is injurious to plants. Recently S. JINNY has re-studied the matter, growing plants in glass pots, and passing in, through a tube inserted in the bottom, air enriched with a known amount of carbonic acid gas. He found that in almost all cases the result of supplying the roots and soil with air containing four, five, and twelve per cent. of carbonic acid gas was injurious to the plants experimented upon, namely, Haricots, Rye, and Lupines. Wheat, however, is an exception, and it is possible that plants which do not thrive in recently-manured soil are particularly

susceptible to this action. Further details of these experiments may be found in the *Ann. Agronomie*, v. xviii., pp. 594 to 597.

OCTOBER HORTICULTURAL MEETING AT GHENT.—Certificates of Merit were awarded "à l'unanimité" for the following plants:—To M. E. BEDINGHAUS for variegated *Yuccas*, eight varieties, of which *Y. gloriosa* var. *medio picta*, *Y. g. aur. mar.* and *Y. g. var. arg. marg.* were the most noticeable; to M. ALF. VAN IMSCHOOT for *Sobralia xantholenca*, a species but rarely seen in flower at the meetings—the petals are whitish, sepals and lip bright yellow; to M. F. DESBOIS for *Caryopteris mastacanthus*, a pretty *Verbenad*, blooming at a time when flowers are scarce; this should prove an excellent market variety. Certificates of Merit were allotted to M. JULES HYE for *Cypripedium præstans*, a remarkable hybrid described in the *Gardeners' Chronicle*, 1886, p. 776; to Madame la Marquise DE MAORIN for *Miltonia Moreliana* var. *atropurpurea*, remarkable for the depth of colouring and width of the divisions; to M. ED. PYNÆERT, for *Phoenix insignis*, an elegant variety of *P. reclinata* *Sanderiana*; to M. WATTECAMPS, for a yellow tuberous *Begonia*, with a firm stem—this will be valued in the future for its erect habit; to M. H. MILLET, for tuberous *Begonias*, with streaked flowers spotted with rose, streaked and marked with white on both surfaces, a very pretty flower; to M. JULES HYE, for *Cypripedium gloriosum*, a hybrid between *C. Lawrencianum* and *C. Harrisianum*, the lip very large, background green, lined with dark brown spots, border rosy, shading into white; to M. H. MILLET, for *Kentia Belmoreana compacta*, very dwarf, with nine handsome and very sturdy leaves, petioles exceedingly sturdy. Certificates for Botanical Merit were awarded to M. L. DESMET DUVIVIER for *Urtica pel-tata*. Certificates for Cultivation and Blooming were allotted to M. F. VAN DRIESCHE for *Physianthus sericifera* (*alias albens*), a good old specimen-plant, well grown, and flowering profusely. *Ch. D. B.*

MR. GEORGE CANNON.—We understand that Mr. CANNON, who has been manager of Messrs. LEE & SON'S Ealing Branch Nursery for a period exceeding twenty-nine years, has resigned that appointment, having taken over the established nursery business carried on for the last twenty years by Mr. WEEDEN at Ealing; and, in addition, has secured several acres of land adjoining, which he will doubtless make into a very nice nursery. Mr. CANNON has had a good training for his new venture, in which we wish him success, having been trained at OSBORN'S Nursery, Fulham, famous in those days for fruit trees. From here he betook himself to another famous fruit-tree nursery—SMITH'S, of Worcester—for four years, and then began his connection with the old-established firm of LEE at Ealing. Here his special work has been fruit trees, Roses, trees, and shrubs. In landscape gardening matters in Ealing and surrounding districts, Mr. CANNON has had no small measure of success.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of the Floral Committee of the above, on September 9, the following awards were made:—First-class Certificates: to Mr. F. van der Wissel, of Epe, for *Chamaecyparis Lawsoni* Wisseli; to Mr. K. Wezenburg, of Hazerswoude, for *Ailanthus glandulosa pendulifolia* and *Eulalia japonica gracillima*; to Messrs. E. H. Krelage & Son, of Haarlem, for *Cactus Dahlias* Mrs. G. Reid, Mrs. B. D. Liddel, Glory of Swanley, H. Cannell, Lilliput *Dahlia Hoffman von Fallersleben*, and *Begonia tuberosa* fl.-pl. James C. Scott; to Messrs. Groenewegen & Co., of Amsterdam, for *Cactus Dahlia Delicata*; to Mr. J. Th. van den Berg, Jun., of Jutfaas, for *Cactus Dahlia Glory of Swanley*, *Dahlia* fl. simpl. *Etoile de Lyon*, *Dahlia* fl. simpl. *Attraction*, and *Dahlia* fl. simpl. *Ne Plus Ultra*; to Mr. C. G. van Tubergen, Jun., of Haarlem, for *Kniphofia hybrida* Star of Baden-Baden and *Lilium Henryi*. Second-class Certificates: to Messrs. E. H. Krelage & Son, of Haarlem, for *Nagelia hybrida*

Jansen and N. h. Artaban; to Messrs. Groenewegen & Co., of Amsterdam, for *Helianthus multiflorus elegans*; to Mr. Th. van den Berg, Jun., of Jutfaas, for *Cactus Dahlia Garten Inspektor Umlauf* and *Dahlia* fl. simpl. *Mignon*; to Mr. A. P. Bouwman, of Arnhem, for *Aster chinensis* var. *Comète*; to Mr. A. van Naamen van Emmes, of Zwolle, for *Abies excelsa elegantissima*; to Mr. C. G. van Tubergen, of Haarlem, for *Kniphofia hybrida* *Stella* and K. h. *Ophir*. Botanical Certificates: to Messrs. E. H. Krelage & Son, of Haarlem, for *Gladiolus oppositiflorus*; to Mr. C. G. van Tubergen, Jun., of Haarlem, for *Kniphofia natalensis* and K. *pauciflora*.

THE CHISLEHURST AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION commenced its 1893-94 session on Tuesday, October 10, this being the third year of its existence, the President, Mr. LYNE occupying the chair. A paper was read during the evening by Mr. DAVIS, entitled "Gardeners and Gardening," which was well discussed. A motion was unanimously carried that the Association renew its subscription to the *Gardeners' Orphan Fund*. The President mentioned in the course of his remarks that the membership now numbered ninety.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner of this excellent Society was successfully held on Tuesday last at the Cannon Street Hotel, City, under the chairmanship of P. C. M. VEITCH, Esq., of the Exeter Nurseries, who was supported on the right by H. J. VEITCH, Esq., and CLARENCE SMITH, Esq., M.P. for East Hall; and on the left by N. N. SHERWOOD, Esq., and many distinguished members of the horticultural world were present. The room was tastefully decorated with plants and flowers furnished by friends of the Society. The toast list was agreeably short, and after that of the "Queen and Royal Family" had been duly honoured, the Chairman proposed the toast of the evening, "The United Horticultural Benefit and Provident Society," and during a long and acceptable speech, remarked that this society commended itself to him peculiarly because of the sturdy independence it encouraged, afterwards alluding to the immense progress the society had made during recent years compared with that achieved during its early history. There were now 500 members upon the books. The Benefit Fund had a capital of £5,486, the Benevolent Fund one of £859, and the Management Fund one of £37. The society had been managed in the most economical manner, the only paid officer being the Secretary. Speaking of any improvements in the rules that might be desirable, the chairman said that he would like to see a graduated scale of subscriptions in proportion to the age of the member at the time of initiation. In conclusion, he could only wish them in conjunction with their motto, "Unity is strength," that they might have "more power." The toast was coupled with the name of N. N. SHERWOOD, Esq. In replying, Mr. SHERWOOD made a special appeal in favour of the Convalescent Fund, and declared, amid cheers, that he should have pleasure in giving £50 to the Convalescent Fund in honour of the Jubilee of his firm (Messrs. HURST & SON), which occurred this year. In proposing the Honorary and Life Members, Mr. J. HUDSON said that the Society was particularly strong in its Scotch membership, and he thought that in itself was a capital recommendation. The toast was coupled with the name of W. MARSHALL, Esq., who, in reply, thought it very unexplainable that the Society's membership did not increase with even greater rapidity. He also made an appeal on behalf of the Management Fund. CLARENCE SMITH, Esq., M.P., in replying for the Visitors, thought that friendly societies were quite right in declining interference from the Legislature in the matter of old age pensions, and expressed his intention of becoming an honorary member of the Society. H. J. VEITCH, Esq., then proposed the officers of the Society, and congratulated the members on

possessing the same officers who managed it when much smaller in importance. Mr. VEITCH had pleasure in giving £10, five of which he wished to be appropriated by the Convalescent Fund, and five by the Management. Coupled with this toast were the names of Mr. WHEELER and Mr. COLLINS (Secretary), both of whom suitably replied. After that of the Chairman had been humorously proposed by ARNOLD ROSS, Esq., and replied to, a very enjoyable evening was brought to a close. Special thanks were accorded to the donors of the flowers and fruits, and the surplus was to be sent to Guy's Hospital.

TORQUAY DISTRICT GARDENERS' ASSOCIATION.—We have before us the rules and programme of this active Society in the form of a neat little book. The first meeting was held on October 6, when a paper on "Botanical Curios" was read by the President, W. LAVERS, Esq. The meetings will be held fortnightly, and will conclude on March 30. Practical and botanical subjects are included, and we wish the Society a very successful season. The Hon. Sec. and Treasurer is Mr. F. C. SMALE, Knowsley, Avenue Road, Torquay.

PYRETHRUM PARTHENIFOLIUM AUREUM CRISPUM.—Specimens of a form of this useful garden plant, with beautifully crisped leaves, come from Mr. FRED. ROEMER, seed grower, Quedlinburg, Germany, who expresses a hope that he will shortly be able to distribute it. It is striking in appearance, and no doubt the many who are eagerly on the look-out for novelties for bedding will give it a trial; one of the advantages of the plant is, that while it gives a fine feature in the summer flower garden, it is also available for effect in winter. We have also received a plant of the same variety from Messrs. HURST & SON, 152, Houndditch, under the name of *Pyrethrum aureum cristatum*.

PUBLICATIONS RECEIVED.—*Deutsche Pomologie*, with coloured plates. Second edition. (PAUL PAREY, Berlin.)

JOTTINGS FROM GUNNERSBURY PARK.

At this fine place near Acton, S.W., belonging to the Messrs. De Rothschild, there were, some fortnight ago, several very interesting things to be seen. Certainly one of the best of these was a span-roofed house filled with the lovely perpetual-flowered *Carnation*, Mrs. Leopold de Rothschild, which Mr. Reynolds intends to send out shortly. It is much like Miss Joliffe, and to many minds it will commend itself as an improvement upon that favourite variety. It has the same free, bushy habit, and when first opening, the flowers have the same delicate tint of pink; afterwards, however, the flowers of Mrs. Leopold de Rothschild deepen into a lovely shade of rose. They are much larger than those of Miss Joliffe, and, as a rule, the calyx does not split until they become old. The petals are slightly fimbriated, and often bear very minute spots of deeper colour. The flowers are borne on erect stems, and are well displayed; nor must we forget to add that they possess a pleasing fragrance, without which the finest *Carnation* yet raised would lack its best characteristic. It blooms freely for ten months during the year, and furnishes an abundance of bloom at a time when *Carnation* blooms are rare. The plants at Gunnersbury Park are mostly young plants from cuttings that were struck last autumn, and are now in 48-sized pots, well grown bushy specimens, and carrying large and striking blossoms. Altogether it is a variety that is likely to become distinctly popular.

Ixoras are always well done here, and Mr. Reynolds may be congratulated upon the appearance of a houseful of fine healthy plants at the present time; the *Eucharis* in a house adjoining are also healthy; and in this house was a splendid plant of *Phalænopsis Schilleriana*, just throwing a strong spike.

Vanda teres, too, is still a success here; there are two batches, one at either end of a span-roofed house, one lot in particular was very strong and well-ripened, and will be sure to produce a good quantity of bloom. In one of the lean-to houses was a number of plants in pots of *Euphorbia Jacquinæflora* on a high shelf at the back; the shoots are trained along a trellis downwards towards the front of the house, and Mr. Reynolds said they looked wonderfully well when blooming, which may well be imagined, for the ties may be loosened and the shoots allowed to hang carelessly.

Some plants of *Dendrobium Phalæopsis* were carrying blooms on mere offshoots from the older pseudobulbs, showing how very free to bloom is this charming species. There were three plants of it in bloom, and each was different, though it would be difficult to say which was the prettiest or best.

In the vineries were some capital bunches of Black Alicante Grape, Mrs. Pince and Lady Downes. Trebbiano was quite characteristic, with a colony of bunches being developed from one shoot. Only a few good bunches of Muscats remained uncut. In the splendid large span-roofed vinery, the varieties are chiefly Black Hamburg; this house is about 60 feet long, 40 feet wide, and 18 feet high.

Figs, which in so many gardens meet with but little care, are here well done, and a fine batch of plants in pots standing in hot pits, were just beginning to ripen a crop of fruit.

Melons also are grown very extensively, and sixty ripe fruits were cut from the plants at the time of our visit; and others were fit for cutting. One variety, a seedling from Triumph \times Hero of Lockinge, deserves particular notice. The plant had four fruits upon it, one of which weighed 9 lb. 5 ounces, the other three being nearly as heavy. Of its flavour we cannot speak, but it seemed good, and especially suitable as a market fruit.

A batch of 4000 excellent Strawberry plants for forcing were noted in pots, the crowns plump and well developed, which should be pretty generally the case this year. If plants are good at this date, the quality of the forced fruit is assured, granted that ordinary attention is bestowed; but, on the other hand, with weak plants and badly-developed crowns, it is impossible to obtain satisfactory results. There were 500 Chrysanthemums, rendered dwarf by pinching—none are grown for exhibition purposes. Some hot-water pits were filled with Gardenias and Pines.

The pleasure-grounds looked charming, and we think there is no other private place within so short a distance of Charing-Cross that can boast any so fine. The lake adds wonderfully to their beauty, and in the Italian garden and elsewhere, the beds are filled with good plants tastefully arranged. One bed, though simple, was highly pleasing; it consisted of *Salvia patens* and the yellow variegated *Abutilon*. Another noticeable feature at this season is the quantity of *Ampelopsis* growing and hanging about in all sorts of places, hiding the scars that age has inflicted on trees, and in some cases entirely screening stumps of trees long since dead. Just now, when the foliage has assumed so many lovely tints, the plants considerably enliven the grounds. In a narrow border, along by the side of a span-roofed house, was one of the best bloomed batches of the exquisite *Belladonna Lily* we have seen, just such another lot as may be seen each year under the T-range at Kew. The border faces nearly due south, and each year until this one, the plants in the half border running along by the stove have been considerably earlier than those nearer the greenhouse; but this season the order has been reversed, the gardener being quite puzzled to find the reason for this. The plant cannot be too highly recommended for planting in all similar places, viz., narrow borders running along the south fronts of warm houses in the South, and it will do well in the Midlands when the season is favourable, for we have often seen it bloom well in Staffordshire. What the bulb requires is a tolerably mild, dry winter and hot spring, that the bulbs can become

thoroughly developed and perfected before they bloom, and a little winter protection from cocoa-nut fibre, rough leaf-mould, or coal-ashes. The flowers are everyone's favourites, and they are as useful as they are chaste and beautiful.

HOME CORRESPONDENCE.

VIOLAS.—I hope those who may have lost plants from the excessive heat and drought will not be disheartened, and will again use them for early spring and summer decorative work, planting them in the autumn if possible; failing this, then in early spring, putting them in either case in soil moderately manured, and making them snug and firm. Up to the beginning of September, or August perhaps in the south, it was truly a *Viola* year. Then they began to succumb to the heat and drought, although in holding soils they still held out bravely. In one large garden, I saw long rows and large beds of Dean's True Blue, and Countess of Hopetoun, white, still in full flower at the end of August. In another, on a border with a south-eastern aspect and fully exposed to the sun, Duchess of Fife made a grand show, finer as a mass than I ever saw it, and remained so up to the end of August. In the middle of September, in a large garden near Drayton Manor, Sir Robert Peel's place, I saw William Neil, a soft pink, and Violetta, a dwarf-growing white, with small flowers, and as fragrant as a Violet, in full bloom, and defying the heat and drought. In all these cases they were in rich loamy soil, and spring-planted. New varieties are being annually introduced, and only a few days since a batch of blooms of some very fine seedlings were sent to me from Scotland, and these, and others, will be sent out in the spring. Some very beautiful varieties have also been raised in the north of Ireland. A mixed bed of varieties is a bright and pleasing object, and a test bed in a garden would give an excellent opportunity for testing which are best suited to the district, giving them room enough, and keeping the dwarf growers in front. The *Viola* is a hardy plant, and should be kept, even when in frames, fully exposed, excepting in very bad weather, and even then avoid shutting them up when damp. It is a too common practice to buy and have them sent through the post, and planted out immediately. If well-rooted and strong plants, this may be done; but if they were planted in a frame in good soil for a few days, to begin rooting, and then lifted carefully and planted in genial weather, there would be fewer failures. *W. D.*

EARLY CELERY.—This has been rather a trying season for Celery and other crops requiring abundance of water, and in places where there has been a scarcity, doubtless a quantity of that earlier planted will run to seed. Our first trench was planted on May 19; from this we have been digging nearly a month, and notwithstanding the very dry season and no water being given after it was first planted, I am agreeably surprised to find Celery that is crisp and well-flavoured, the variety grown being Wright's Grove White. *J. S. Uper, Wigganhorpe.*

POINCIANA GILLIESII.—I forward to you the blossom of a shrub (*Poinciana Gilliesii*) of exceptional splendour. I told you when it began to blossom this year in May, and it is in full bloom now, and will go on till frost. The shrub is more than 15 feet high, and was grown by me from seed of Thompson of Ipswich (the best *4d.* I ever spent in my life); but I had to nurse the young plants for twelve years before they blossomed, and now they have been rewarding me increasingly for the last five years. It improves wonderfully every year, and what it will be in five years from now, if it goes on at the same pace, I cannot think. The foliage is graceful in the extreme, and waves about in the sunshine most delightfully. Contrary to all expectation, this South American shrub laughs at all extremes of heat or cold which it ever has to endure in the Isle of Wight, and when *Fremontia californica*, much to my sorrow, was cut down at its side, it seemed to be superlatively happy in the fierce heat which it had to endure. I think it would be well if *Poinciana Gilliesii* had a much more extended trial over the south of England. I remember saying in May that I fancied there would be a second edition of spring this year. A Laburnum is in full blossom not far off; and the flower which I enclose for your inspection is an unexampled curiosity. It

is a perfect specimen of *Narcissus*, Mrs. J. B. Camm, which blossomed in April last. So it is with other things. *H. Eubank.*

GRAHAM'S ROYAL JUBILEE APPLE.—I noticed your correspondent's remark on Graham's Royal Jubilee Apple. It is indeed a fine Apple. I have grown fruit this season on a small three-year-old tree, measuring nearly 14 inches in circumference, and weighing nearly 20 oz. I also give you the size of six others that I have grown very fine, if you have room to insert them. Anna Elizabeth, 13½ inches circumference; Cox's Pomona, fine coloured, 13 inches circumference; King of the Pippins, 10 inches circumference; Reine de Bretagne, nearly 12 inches circumference; Reinette du Canada, 13 inches circumference; Court Pendu Plat, over 10 inches circumference. *W. Potten, Cranbrook, Kent.*

A GOOD MICHAELMAS DAISY.—Of all the Michaelmas Daisies now in flower here, this first week of October—and I think I have most of the best—is a white variety of *Aster puniceus* (Asa Gray), called at the Chiswick Conference, var. *pulcherrima*. It flowers nearly two months later than the type, grows very upright, and has flowers of great substance and persistence, nearly 2 inches across, larger than those of any other Michaelmas Daisy I know. It is a fine plant for the back row of a herbaceous border in October, as it grows at least 6 feet high. Michaelmas Daisies here are later than usual in coming into flower. *C. Wolley Dod, Edge Hall, Malpas.*

AMARYLLIS BELLADONNA.—Nothing in these gardens has shown the effect of the warmth of the past six months so much as a long border of the above-named handsome flowering Lily. The border is about 100 feet long. It is at the base of a wall facing south, which carries the roofs of three plant-houses, viz., stove, fernery, and warm greenhouse. The border is about 18 inches in width, and is raised a few inches above the alley that runs in front of it, by a row of bricks set ends into the soil. We made it some twelve years ago, by first removing the natural soil, which is of a stiff limestone nature, some 18 inches deep, then putting in a layer of broken bricks, some 6 inches in thickness, as drainage, covering these with a sod, grass-side downwards, and filling with a mixture of two-parts peat, sandy loam, and one of old peatting-soil. The bulbs were planted in October, about 4 inches in depth, and they were placed 1 foot apart; they have flowered more or less each year since. The greatest number of spikes produced previous to this year was in the warm summers of 1884 and 1887. In neither of those cases, however, was the supply at all equal to what it is this year; there have been over 500 spikes in all this season. When at their best, about a fortnight ago, they presented a charming effect, when seen from one end. As showing the necessity of ground-heat in assisting to ripen and mature the bulbs when they are in leafage, I notice that there are fully three times the number of flowers on the portion of the border fronting the warmer houses. The hot-water pipes on the other side of the wall evidently warmed the soil in this part much more than that facing the greenhouse. The pipes have been used very little since March. *H. J. C., Grimston.*

EBOR PEA.—Permit me to draw the attention of those of your readers who may not have already grown the above-named Pea to its great merits as a mid-season and late variety. We have grown it here for the past two years, and for the purpose named we find it a really first-class Pea. It is the most like that well-known and free variety, *Ne Plus Ultra*, though with us it is distinctly superior to it in all respects. For the future it will replace that variety with us, and when I say that during the twenty-eight years I have made out a seed list *Ne Plus Ultra* has always been one of my standard kinds, it will be seen how much I value its improved prototype, *Ebor*. We are picking nice dishes of it for table nearly every day. I believe Messrs. Backhouse of York were the originators of the variety, though it can be acquired from other sources, I have no doubt. *H. J. C. Grimston, Tadcaster, October 7.*

THE CHISWICK ONION TRIALS.—As some amateurs who may have read the report in the *Gardeners' Chronicle* of the Onion trials, will be apt to harbour the opinion that the seven varieties therein recommended are the best for general garden purposes, I beg to state, with all due respect to the committee, that if readers are guided

by this report, they will in five seasons out of six, find themselves upon the wrong track. I aver that three of the finest Onions for general purposes best suited to our English climate, are not mentioned therein at all. These three sorts are Deverill's Rousham Park Hero, Deverill's Improved Wroxton, and Cranston's Excelsior. I am not going into the question of Onions for competitive purposes, but simply varieties that can be obtained anywhere at a cheap price per ounce. The report bears out what I have already observed, viz., that foreign-saved seed has generally answered very well this exceptionally hot season. I see the committee recommend, as one of the seven varieties, Italian Tripoli. Do they mean one of the common varieties of Tripoli seen in every catalogue? or the variety offered by Mr. Deverill this year, to which he has given the name of The Italian? Perhaps Mr. Barron or one of the committee will kindly afford this desirable information. In conclusion, I am quite aware, with respect to Deverill's Cocoonut, that it is "really the outcome of years of careful selection from the original stock of Excelsior" (this is the introducer's description); consequently the committee are really recommending a much improved type of the variety recommended by me. Were seeds of Cocoonut obtainable at a cheap rate, I should substitute this for Excelsior, but I am advising cheap-priced good varieties for 1894. *Pioneer*.

RARE FRUITS AND VEGETABLES.—The dwarf Juneberry named in the interesting notes of your correspondent in the *Gardeners' Chronicle* for October 7, is no doubt the American form of the European *Amelanchier vulgaris*, called *A. botryapum* or *Mespilus canadensis*. It has been much advertised by American nurserymen, but I have not grown it, as I find its congener the *A. vulgaris* = *Mespilus Amelanchier*, which grows and blooms freely here, is never able to set any of its fruit, owing to its being attacked by the caterpillar of a small moth, which worries the pretty sweet-scented white flowers to destruction. If the species named by your correspondent is free from this pest, it must be well worth growing; the *A. vulgaris*, which grows abundantly in the limestone rocks which overhang the Lake of Garda, and other Italian lakes, is now lovely in the purple and scarlet colour of its autumnal foliage, which is as conspicuous as the white flowers in spring. I am always surprised that the Cape Gooseberry, *Physalis edulis* = *peruviana*, is not more grown in England; it lives with me in pots in an unheated house, but it requires some additional warmth, even in such a season as the present, to ripen its deliciously-flavoured berries, which make a jam resembling in colour, and fully equal to, but differing in flavour from, that made from Green Gage Plums; it is largely grown in Madeira for this purpose. *Cydonia* (Pyrus) *Maulei* has produced a very heavy crop of fruit this year, which has been made into jam; it has an exquisitely semi-acid and scented flavour, quite unlike ordinary Quince jam. It is most easily raised from the pips, and flowers and fruits abundantly the second and third year from seed. I quite endorse what your correspondent says about *Finocchio*. For years I have tried to grow this plant, and this exceptional season I anticipated success—but no; despite the most careful watering, earthing-up, &c., it has decided not to form its Celery-like, semi-bulbous mass of leaf-stalks, but has "bolted" to seed, leaving only some straggling plants like ordinary Fennel. I have been told, and am inclined to believe it, that this vegetable does no good north of the Arno. I have eaten it north of that river. *R. Milns-Redhead, Holden Clough, Clitheroe*.

LATE STRAWBERRIES.—It may interest some of your readers to know, that on October 7, I picked 24 lb. of very good Strawberries, 21 lb. on the 9th, and 19 lb. on the 10th, which were sold by Mr. Geo. Monroe in flat punnets of 1 lb. each. I hope to pick a good few yet, as there are at the present nine or ten good Strawberries on each root. *R. J. Griffin, Farnborough, Kent*.

SUBSTITUTES FOR THE CALCEOLARIA AS A BEDDER.—The varieties of *Calceolaria* have become subject to a malady which affects the stems, and the plants die in a few days. I have tried every means I can think of to prevent it; I have put fresh mould into the beds, but all no good. This black disease, which is a fungus, attacks the plants when they are in full bloom. Last spring I tried the following three plants instead of *Calceolarias*, with great

success, viz., Tuberous Begonias, with yellow flowers, which make grand beds all the summer, and keep good till the frost cuts them off, then I take the tubers up and store them in a dry shed till the spring, when they are started in a gentle heat. Begonias strike easily from the young shoots, and can sometimes be divided, making good plants the same season, besides being easily raised from seeds, which come true if saved from a good yellow variety, fertilised with another yellow-flowered variety. I have also some fine yellow beds of *Zinnia Haageana*, a beautiful double-flowered orange-yellow variety, 12 inches high. The plants are still in bloom (October 7), and are very much admired. The seeds were sown in March in pans, in gentle heat, and made nice plants that were ready for the beds by the end of May. *Calceolaria pinnata* is another good plant for bedding, which is free, and soon fills the bed. The flowers are of a pale lemon-yellow colour, and last the season through; seeds may be sown in March in shallow pans, and placed in a cold pit. The seedlings make nice plants by the time they are required for planting out. *Wm. Smythe, Basing Park Gardens, Alton*.

HAWKSTONE.

AFTER a pleasant drive of a dozen miles from Shrewsbury, the writer of these notes, which are mainly jottings from memory, arrived at Hawkstone, the delightful residence of Viscount Hill, whose ancestors have resided there since the time of Henry VI. There are several entrance-roads to the park (which covers an area of 1600 acres of red loamy land); the one through which I entered the demesne (Weston-under-Red-Castle) is both commodious and handsome, and favourably impresses the visitor who comes to Hawkstone for the first time, and these impressions are fully realised when the finely-timbered park is entered, and landscape effects of a very varied character and picturesque are disclosed. To the left of this drive is a large lake, to the right an undulating greensward studded with groups and specimens of fine Oaks, Elms, Beeches, and Spanish Chestnuts, the latter being very large, and of fine proportions.

In this part of the estate are thousands of black rabbits, and a few brown and grey ones. Right in front is the old fortress of Red Castle, and towering high above the drive is an immense perpendicular mass of rock, through which the roadway is cut; this rock is partly covered with trees and shrubs. Close by is the Hermit's Hut, in which Charles I. is said to have been concealed, and communicating with this hut is a winding passage or tunnel cut through the rock. A column 112 feet high stands on a hill 700 feet high, surmounted by a statue of Sir Roland Hill, the first Protestant Lord Mayor of London, in whose memory it was erected by the tenantry and friends of the family. From an observatory on the top of the pillar, fine views are obtained over, it is said, a dozen counties when the air is clear. The mansion is an imposing-looking building, facing westward, and covering three sides of a square. It commands fine views of the park and surrounding country.

The pleasure-grounds and flower-garden are extensive, and comprise a variety of pleasing and interesting features, including fine specimens and banks of *Rhododendrons*, both in the grounds and park, some being about 18 to 20 feet high; of *Cedrus atlantica*, *Pinus excelsa*, *Abies pinsapo*, *Abies cephalonica*, about 80 feet high; *Abies grandis*, *Pinus Douglasii*, *Cryptomeria elegans*, &c. The flower-garden, made in the geometrical style, was resplendent with flowering plants.

The glass-houses are fairly numerous, and consist of a conservatory, some plant-stoves, four vineries, each about 45 feet long, two Peach-houses, a Fig-house, besides Melon and Cucumber-houses. In the vineries, good crops of Black Hamburgh, Lady Downes, and Black Alicante Grapes were observed. The walls in two of the lean-to hot-houses were finely covered with *Cissus discolor* and *Selaginella denticulata*, the latter growing in moss and mould kept in position by wire-netting fixed pretty close to

the wall. One of these hot-houses was filled with *Nepenthes Rafflesiana* and *N. Hookeri*, chiefly the former, the plants being in fine condition, with large pitchers, and plants the picture of good health, showing that Mr. W. Carr, like his predecessor, the late W. Pratt, whose foreman he was at Hawkstone, understands the requirements of these singular plants. *H. W. W.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 10.—The meeting in the Drill Hall, James Street, Westminster, on Tuesday last, was an exceptionally good one. Fruit was shown in unusual quantity, and the size and good quality of many of the Pears was quite remarkable. Two large tables running down the centre of the hall were filled with dishes of Pears and Apples, and some were accommodated on tables at the side. There were also specimens of Dahlias and Chrysanthemums, sprays of ornamental trees and shrubs, a good collection of *Adiantums* and other Ferns, and some novelties in *Anthuriums* and Orchids, besides very interesting exhibits from the Royal Gardens, Kew, and from Mr. Lucien Linden, Brussels.

Floral Committee.

Present: Owen Thomas, Esq., in the Chair; and Messrs. H. Herbst, R. Dean, G. Stevens, H. B. May, C. J. Salter, J. Jennings, R. H. Lowe, J. E. Pearson, J. D. Pawle, W. Watson, H. Cannell, C. E. Shea, T. Baines, C. Jeffries, H. H. D'Ombra, J. Bennett-Poë, E. Mawley, and G. Gordon.

A very choice collection of sprays of flowering and ornamental trees and shrubs was staged by Messrs. Geo. Bunyard & Co., Maidstone, including *Hypericum elatum*, *Rhus typhina*, *Cornus mas variegata*, *Acer atropurpureus*, &c. (Bronze Banksian Medal).

In the competition for twelve bunches of herbaceous plants, the 1st prize was very worthily won by Mr. G. H. Sage, Ham House Gardens, Richmond, Surrey, who had a very fine lot; Miss Debenham, St. Peters, St. Albans, was 2nd. Messrs. H. Cannell & Sons, Swanley, had a stand containing excellent blooms of Dahlias, one of the varieties named Old Gold, an extremely pretty bloom, with centre of dark rose, was awarded an Award of Merit. Also a stand containing some charming varieties of Pelargoniums in most lovely shades of Pink, and a collection of good Chrysanthemum blooms (Bronze Banksian Medal). Mr. Geo. Phippen, Reading, had an extremely dark crimson Cactus Dahlia named Geo. Phippen.

From the Right Hon. Joseph Chamberlain, Birmingham, came three hybrid *Anthuriums*. Two of these had white spathes, one of which was accompanied by pink coloured spadix. The third was a large and pretty pink spathe, and white spadix.

Messrs. R. Veitch & Son, Exeter, showed sprays of Pink Ernest Ladham, *Colutea arborescens purpurea*, and the old garden plants *Zauschneria californica* and *Plumbago Larpentæ*.

Mr. J. Arnold, Stoke, Devonport, received an Award of Merit for decorative *Vonpaula* Miss Arnold, a very attractive rose-coloured bloom. Mr. J. Lansdell, The Gardens, Barkby, near Leicester, had a yellow and rose-coloured Dahlia, named Beauty of Barkby.

From A. de Rothschild, Esq., Halton, Tring, gr., Mr. Sanders, came a magnificent collection of Begonias, mostly varieties of *Begonia semperflorens*, which had been lifted from the open beds. A number of each variety was shown in large flat baskets, and created a good deal of interest. One of the most striking amongst these was a variety called atropurpurea, with very deep-coloured flowers and foliage, which colours considerably when grown in the open. B. Carrière has flowers of palest pink. All the varieties are very charming, and well worth putting in quantity into beds for summer decoration (Silver Flora Medal).

A collection of *Begonia* blooms came from Mr. G. A. Farren, Forest Hill, London, S.E.; and some sprays of *Quercus americana* [rubra] splendens, with finely-coloured foliage, which was awarded a First-class Certificate, from Mr. A. Waterer, Knap Hill Nursery, Woking, Surrey.

Mr. Robert Owen, Castle Hill Nursery, Maidenhead, had a stand containing fine Chrysanthemum blooms. A Japanese variety slightly incurved,

named Mrs. P. Blair, was granted an Award of Merit; the flower is nearly white from pale pink, and has rose markings.

Awards of Merit were also granted to two winter or perpetual-flowering Carnations, shown by Mr. J. Godfrey, Exmouth. Reginald Godfrey is very fragrant, and of a pleasing shade of pink, the petals crimped and slightly fringed; the other is called Mary Godfrey, a pure white, with fringed petals, and fragrant.

One of the best collections of *Adiantums* we have seen staged for some time was contributed by Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton. A fine batch of *A. Farleyense* was included, and amongst the tinted sorts were several good varieties of *A. Ghiesbreghtii*, two varieties of *A. tetraphyllum*, and many others. Conspicuous also were good plants of *A. curvatum*, *A. elegans*, *A. tenerum*, *A. concinnum*, *A. Bausei*, &c. (Silver-gilt Flora Medal).

From the Royal Gardens, Kew, came three plants in bloom of a new hybrid *Tecoma* named *Smithii* = *T. capensis* × *T. velutina*; it has pinnate foliage, the leaf-stalk and midrib about 8 inches long, leaflets $1\frac{1}{2}$ to 2 inches long, and half an inch wide, set at rather wide intervals; the flower has an exteriorly orange-coloured tube, and yellow segments—the interior being also of a yellow tint (Awarded a First-class Certificate). Several examples of *Streptocarpus kewensis* in variety were shown as cut blooms; a flower truss and shoot attached of the brilliant scarlet *Bomarea patagonensis* was shown—a splendid climber, rivaling *Lapageria rosea* (award a First-class Certificate). *Clematis Standishii*, with flowers of the general aspect and colour of *Anemone japonica*; *Solanum Wendlandii*, a grand flower-spray of a soft delicate blue colour, and of finer proportions than we have hitherto observed it. It was figured in our issue for September 16 in the current year, but our illustration scarcely does the plant justice (Award, a First-class Certificate). *Ptycoraphis Angusta* is a very graceful Palm, with pinnate foliage, the earliest of which seem to be of the same type as the later (Award a First-class Certificate). *Melianthus Trimenianus*, from Namaqualand, has delicately pinnatifid leaves and terminal erect spikes of rosy-red blossoms, which are individually half an inch long. *Kniphofia Modesta* has a thin, tall spike of white flowers of small size, and dwarfish foliage. Natal.

In Messrs. L. Linden's (Brussels) collection of plants, was a remarkable *Anthurium* named *Wambeckiana*, a variety with green leaves, of the usual type, and a large spathe of a dead white, furnished with a white spadix. Apparently it is a desirable addition to this class of plants, for the contrast it affords with scarlet and pink-spathed varieties (Awarded a First-class Certificate). *Hamantulus Lindenii*, the flower bearing a striking likeness to *H. bicolor*, was likewise shown, the plant stood more than 2 feet high, and was furnished with a number of massive corymba of flowers of a pinkish-red colour (Awarded a First-class Certificate).

Messrs. J. Veitch & Sons, Chelsea, S.W., exhibited a fine lot of plants in bloom of *Caryopteris mastacanthus*, the bright blue terminal and axillary flower making a pretty show. It was figured in the *Gardeners' Chronicle*, vol. xxi., new series, 1884, p. 149.

A nice boxful of warm-house *Rhododendrons* came from the same nurseries—Minnie, a flower of a rich orange colour, seemed to us to be new. A fine boxful of the Chelsea cross-bred *Streptocarpus* in a variety of colours formed part of the exhibit. *Carnation*, Madame Thérèse Franco, a flower full, fragrant, of a deep rose-pink, and with fringed petals, received an Award of Merit.

A number of plants of *Amasonia punicea* in flower was likewise shown by the Chelsea firm.

Messrs. Perkins & Sons, Coventry, showed *Cactus Dahlia Matchless*, a flower of the true form; colour of the deepest crimson, and velvety texture; also *Cactus D. Purple Prince*, equalling the first in form. The latter received an Award of Merit.

Mr. S. Mortimer, Nurseries, Rowledge, Farnham, Surrey, showed three large market-boxes filled with flowers of *Stephanotis floribunda*, and six dozen *Show* and *Fancy Dahlias*, of good quality so late in the month (Bronze Banksian Medal).

Five dozen *Chrysanthemum* blooms were shown by Mr. Wells, Earlswood, but little may be said of them.

Mr. T. Ware, Hale Farm, Tottenham, had a good bunch of the fine, bright-looking *Aster grandiflorus*; some blooms of the pretty yellow *Pompon Dahlia Emily Hopper* (Award of Merit); a variety of *Cactus Dahlia*, and also a plant of

Nerine elegans alba; and *Esther Swan*, an orange-coloured single *Dahlia*, with a crimson disc, which received an Award of Merit.

Three dozen excellent examples of Japanese and incurved varieties of "Mums" came from Messrs. Pitcher & Manda, United States Nurseries, Hextable, Swanley; very good were *Golden Wreath*, *C. W. Childs*, *F. L. Ames*, and *Bouquet des Dames*.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Sec.), De B. Crawshaw, Sydney Courtault, T. B. Haywood, Thos. Statter, H. Williams, E. Hill, H. Ballantine, H. M. Pollett, and W. H. White.

The show of Orchids was both extensive and interesting, the large basket of the brilliant vermilion *Habenaria militaris*, shown by Sir Trevor Lawrence, Bart., Burford, Dorking (grower, Mr. W. H. White), being one of the brightest exhibits, and showing more cultural skill than any exhibit of the year. It was awarded a Silver Flora Medal. Sir Trevor Lawrence also sent his fine *Cypripedium* × *Lawrebel*, a plant of *C. × conco-Lawre*, with a most extraordinary abnormal flower, having two labellums, and the other segments most curiously misplaced; and *Dendrobium Mirbellianum*. One of the richest exhibits was a select group of Orchids from Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels. One of the best things was the large pure white *Warszewiczella Lindenii*, which received a First-class Certificate on June 7 last year. Five varieties of a fine and distinct strain of the *Turneri* section of *Lælio-Cattleya elegans* were also exhibited, viz., *L.-C. lilacina*, *L.-C. Lindenii*, *L.-C. Luciani*, *L.-C. Margaritæ*, and *L.-C. Treverana*; *L.-C. Luciani* being selected and given an Award of Merit. The sepals were broader than in other forms, and more equal in size with the petals; of a rich purple, with an emerald-green shade. The front of the labellum was of a dark velvety-crimson, and the base clear white. Three magnificent forms of their *Cattleya labiata* (*Warocqueana*) were also shown, all grand in form; *C. Warocqueana fascinator* being very large and superb in colour (Award of Merit). Of the forms of *Cattleya eldorado*, *C. e. Owenii*, with very large flowers, the petals and sepals pure white, the front of the labellum dark mauve-crimson, and the throat rich yellow, was given an Award of Merit. *C. e. Lindenii* was also very handsome, having crimson-tipped petals, and being near to *C. e. ornata*, Rehb. f.; *C. e. Treverana* had blush-white sepals and petals and fine labellum. Other fine exhibits were *Cypripedium Rothschildianum* Linden's var., with four flowers on a spike; *C. × Spicerio-Lowianum*, a very pretty hybrid of the parentage named, which also received an Award of Merit; *Odontoglossum grande* variable, *O. crispum* var.; *Cypripedium* × (*Hookera* × *Veitchii* var.), *Cattleya Alexandræ*, some flowers of their fine strain of *C. Acklandiæ*, a cut spike of a phenomenally large *C. gigas*, and a fine plant of *Cochlidia vulcanica grandiflora*. The group was awarded a Silver Flora Medal.

Messrs. Jas. Veitch & Son, King's Road, Chelsea, exhibited two very handsome hybrids in *Cattleya* × *Chloris* (*C. Bowringiana* ♀, *C. maxima* ♂), which had a stout spike of several flowers, each 5 inches across, and having all the rich colouring of *C. Bowringiana*, with the more ample labellum and greater size of *C. maxima*; it is a very worthy and free-growing introduction (First-class Certificate). The other was *Cattleya* × *Pheidinæ* (intermedia ♀, *maxima* ♂), an exquisitely delicate flower of the form of the pollen parent. The sepals and petals were blush white veined with pale pink; the lip yellow at the base, veined with deep purple, the ground colour being the same as the petals (Award of Merit). Messrs. Veitch also showed their fine *Cypripedium* × *Arthurianum* pulchellum, very superior to the original.

Messrs. F. Sander & Co., St. Albans, had a select group of Orchids, in which the many varieties of their strain of autumn-flowering *Cattleya labiata* were very effective, and quite ideal flowers for the time of year. *Pescatorea Klaborum* and *Batemannia Bartii* were representatives of a class of Orchids which thrive better at St. Albans than anywhere else. A pretty pan of *Phalenopsis Lowii*, *Cypripedium* × *Copipneum*, *C. × Cecilæ*, *C. × Eyermannii*, *C. × ceanthum superbum*, *Oncidium incurvum*, *O. Kramerii*, *O. Cebolletii*, and the new and pretty hybrid *Cattleya* × *Kranzlinii* were also in the group, which secured a Silver Banksian Medal.

From the Royal Gardens, Kew, came the charming hybrid, *Disa* × *Premier* (*Veitchii* × *tripetaloides*).

The flowers were nearly as large as those of *D. × Veitchii*, and of a rich rosy-crimson colour. The plant is very stout-growing, and the inflorescence many-flowered, and evidently lasting over a long period (First-class Certificate).

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., had a group of Orchids, in which were several very pretty varieties of *Dendrobium Phalenopsis Schroderianum*, *D. bigibbum*, *D. superbiens*, and *D. Goldiei*, all of the same section, and perhaps never before so well shown together. *Pachystoma Thomsonianum*, too, was well exhibited; its pretty white and crimson flowers are always admired. Other good plants were *Cypripedium* × *Pitcherianum*, Williams' var., the best of its class; *C. × Ashburtoniæ* expansum, the highest coloured of its section; *C. × Adonis*, *C. tonsum*, *C. × Arthurianum*, *Lycaste lanipes*, *Miltonia Roelzii*, &c. (Silver Banksian Medal).

Messrs. Hugh Low & Co., Clapton, also staged a pretty group, in which the specimens of *Vanda Kimballiana* were very effective; *V. Sanderiana*, *V. tricolor*, *Cattleya Alexandræ*, *C. maxima*, *C. eldorado Wallisii*, *Stanhopea Amesiana*, *Dendrobium Lowii*, *Cypripedium bellatulum*, and other *Cypripediums*, &c., were included (Silver Banksian Medal).

J. Forster Alcock, Esq., North Church, Berkhamsted, sent *Cattleya bicolor*, *C. labiata*, and a grand variety of *Odontoglossum grande*, with seven flowers on a spike.

Major-Gen. E. S. Berkeley, Southampton, showed *Odontoglossum Uro-Skinnerii album*, a rare variety in which the lip is pure white. It was said to have been raised from seeds (Award of Merit).

Messrs. W. L. Lewis & Co., Chase Side, Southgate, showed *Habenaria cinnabarina* (Botanical Certificate).

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr., Mr. Thos. Stafford), showed flowers of a very large form of *Lælia pumila præstans*.

W. E. Brymer, Esq., M.P., Ilington House, Dorchester (gr., Mr. John Powell), sent a flower of his hybrid *Lælio* - *Cattleya* × *Brymeriana* = × *Cattleya Rothschildiana* × *Cattleya Warszewiczii*, a very distinct plant.

A. J. Hollington, Esq., Forty Hill, Enfield, showed a hybrid *Cattleya*, with flowers like those of *C. Schroderæ*, *Cypripedium* × *Richardsoni*, and *C. × Smithii*. In neither case was the parentage given.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. John Lee, H. J. Pearson, T. F. Rivers, W. Wilks, A. Moss, P. C. M. Veitch, G. Bunyard, A. Dean, H. Weir, J. A. Laing, W. Bates, G. T. Miles, C. Ross, G. H. Sage, J. Hudson, Geo. Wythes, H. Balderson, F. Q. Lane, and G. Norman.

A First-class Certificate was given to *Pear Beurré Tongue*, shown by Messrs. Jas. Veitch & Son, Chelsea. This is a good sized heavy *Pear*, of good flavour, ready in October. It is very hardy, and withstands spring frosts unusually well. The same firm also contributed a very large collection of Apples and Pears, including about two hundred dishes and baskets of Apples, and thirty-five dishes of Pears. Amongst the most noticeable in a very fine collection were Apples, *Baumann's Red Reinette*, *Seaton House*, *Alfriston*, *Bismarck*, *Margil*, *Sandringham*, *Mrs. Barron*, *Mère de Ménage*, *Beauty of Stoke*, *Winter Hawthornden*, *American Mother*, *Peasgood's Nonsuch*, *King of the Pippins*, *Belle Pantoise*, and *Alexander*. Also some fruiting sprays of their *Raspberry Superlative*, showing that in absence of frost the variety will furnish fruit quite up to the winter (Gold Knightian Medal).

A magnificent collection of Apples and Pears was that set up by Messrs. Geo. Bunyard & Co., Maidstone. There were 120 dishes of Apples, and all dessert varieties, which were staged in their different families, constituting quite an object-lesson, and giving facilities for comparing each variety with others of its own section. The Apples were extremely bright-looking, and were well coloured, but it is quite impossible to specify those which were deserving of notice. There were four *Calvilles*, twelve varieties of *Pearmain*, five of *Russets*, eight of *Reinettes*, nine of *Nonpareils*, three of *Kernels*, nine of *American kinds*, twenty-eight *Pippins*, and a quantity of miscellaneous. The finest of the Pears were *Van Mons' Léon le Clerc*, *Vicar of Winkfield*, *Princess*, *Uvedale's St. Germain*, *Gilgil*, *Andry Leroy*, *Pitaston Duches*, *Beurré Superfin*, *Grosse Calebasse*, *Burré Diel*, and *Beurré Clairgeau* (Gold Knightian Medal).

Messrs. Jno. Laing & Sons, Forest Hill, S.E., had

another collection of Apples and Pears. Very good were Apples Blenheim Orange, Warner's King, Grenadier, Golden Reinette, Reinette du Canada, Beauty of Kent, and Sandringham (Silver Knightian Medal).

Another collection of Pears (sixty dishes) came from Mr. Owen Thomas, of the Royal Gardens, Windsor; these fruits, though not exceptionally large, were even, pretty specimens (Silver Banksian Medal).

Mr. W. Crump, of Madresfield Court Gardens, Malvern, staged forty-three dishes of fine Pears, in illustration of the lecture he delivered in the afternoon. Doyenné du Comice was shown remarkably well, the heaviest fruit weighing 1 lb. 2 oz.; it was grown on a free stock against a west wall. The heaviest fruit of Pitmaston Duchess was 1 lb. 14 oz.; Baurré Diel, Duchess de Orleans, and many others, were excellent (Silver Knightian Medal).

Mr. Jno. Watkins, Pomona Farm Nurseries, Withington, Hereford, contributed a grand display of Cider Apples of wonderful colour, and also eighteen dishes of first-class Pears in size and quality (Silver Knightian Medal). P. Saillard, Esq., Buchan Hill, Crawley (gr. Mr. Jno. Martin), had another collection, consisting of sixty-one dishes of Apples and Pears. The quality of this exhibit was like most of the others shown on Tuesday, very good, some of the dishes being particularly so (Silver Knightian Medal).

Messrs. H. Lane & Son, Berkhamsted, had a grand lot of their Apple Prince Albert, also some very fine specimens of a new Apple named Hambling's Seedling, which was awarded a First-class Certificate.

Messrs. Cheal & Sons, Lowfield Nurseries, Crawley, exhibited some Pears, also good specimens of their new Apple Atalanta, and tubers of Potato Prizefighter.

Three exceptionally fine dishes of Pear Marie Louise were from Mr. Sydney Ford, who received a Cultural Commendation. Very large Bramley's Seedling Apple were sent by Mr. Ed. Molyneux, Swanmore Park Gardens, Bishops Waltham; they were taken from maiden trees planted in 1891. A Seedling Apple, named Mrs. Hooper, was sent by Messrs. Laxton, Bros., Bedford, but no Award was made.

A dish of Pears Doyenné du Comice, sent by Charles C. Tudray, Esq., The Cedars, Wells, Somerset, were perhaps the best ever shown; the twelve fruits weighed 13 lb., and the largest specimen 1 lb. 4 oz. (Bronze Banksian Medal).

Six Pears, Grosse Calabasse, weighing 7 lb. 3 oz., and a few fruits of a seedling Apple, were staged by Mr. Jos. Lane, Palgrave, Diss, Norfolk; and Mr. Druce, Upper Garton, Merstham (gr. Mr. Mancey), had ten extraordinary fruits of Pear Pitmaston Duchess; three fruits weighed 1 lb. 15 oz. each, and the ten fruits, 17 lb. 6 oz. They were taken from a cordon, which carried twenty-seven fruits, and which weighed 38 lb. 2 oz. The heaviest fruit was 2 lb. 2 oz. (Bronze Banksian Medal). A Smooth Cayenne Pine-apple weighing 9 lb., and sent by Mr. Owen Thomas, Royal Gardens, Windsor, was Culturally Commended; as were also four dishes of Pears sent by Mr. Jno. Masterson, Weston House Gardens, Shipston-on-Stour. Mr. J. Day, Galloway House Gardens, Garliestown, received a Bronze Banksian Medal for twelve dishes of very good Pears.

There were four varieties of European Grapes contributed from the Society's Gardens at Chiswick: they were Miller's Burgundy, Morris' Early, Duchess, and Esperione.

A Gourd, weighing 154 lb., came from Mr. J. Miller, gr. to Lord Foley, Ruxley Lodge, Esher (Cultural Commendation).

Several Potatoes that had been tried at Chiswick were presented before the committee for examination, and the following kinds were all granted First-class Certificates:—Jeannie Dean, of medium size, rather rough skin, with small eyes, from Messrs. Carter & Co., Holborn; Nellie Langtry, another rather rough-skinned variety, from Mr. Fletcher, Anerley; Major Meoc, from Mr. H. Finsham, Cranbrook; Conference, from Mr. Dean, Ealing; Early Regent, from Messrs. Jas. Veitch & Sons, Chelsea; Success, from Mr. Taplin, Gloucester; and Redclyffe Kidney, from Mr. Selby.

Awards of Merit were given to the following Onions:—Southport Yellow Globe, Southport Red Globe, and Deverill's Cocoa-nut, from Mr. Deverill, Banbury; Globe Madeira and Italian Tripoli from Messrs. Vilmorin, Andreux, & Co., Paris; and Prize-taker from Messrs. P. Henderson & Co., New York.

Lecture on Pears.

In the afternoon a very instructive lecture on Pears was read by Mr. Wm. Crump, of Madresfield Court Gardens, Malvern. Mr. Crump commenced his paper by declaring that there is a very great demand for fine luscious Pears, and said that this demand was most inadequately supplied. Pears might be classed into three kinds: 1, choice fruits grown in houses, and those imported from France, &c.; 2, ordinary ones grown on standards and wall-trees, &c.; 3, Perry Pears. The lecturer said that in regard to fruit of finest quality, we should never be able to compete successfully with the growers in more favourable climates; but in the 2nd class it was found that there could be produced, as the effect of good culture, fruit of very good quality, and such as will meet with a very great demand. Most of the earlier kinds were found to ripen well on standards, and therefore walls and other more favourable situations should be reserved for later kinds, that more juice and less fibre, "or indigestible grit," as the lecturer described it, might be present.

Mr. Crump then went on to speak of lifting all trees on the free stock when they had been planted three or four years, that good fibrous roots might be induced. These roots were encouraged by judicious mulchings, and by the use of chemical fertilisers, which, the lecturer said, did not produce a strong woody growth so much as fruitfulness. As quality instead of quantity was the lecturer's aim, he deprecated the gridiron system of training, and advised cordons, as being the most productive, easily replaced, and enabling the grower to produce all the best varieties. Incidentally, Mr. Crump described Doyenné du Comice as the best Pear in the world, and he recommended it for planting in all situations, declaring it was the very last to fail in giving a good crop of first-rate quality. The important subject of pruning—so fully discussed in our columns recently—next received attention, and afterwards the question of distribution. Mr. Crump declaring that in some cases he had known personally there had been a profit of about 1000 per cent. to account for between leaving the producer's hands and reaching those of the consumer. Gathering and storing were then dealt with, and Mr. Crump concluded his paper by referring to several of the more injurious insects to which the Pear was liable.

Mr. Geo. Bunyard, who occupied the chair, afterwards offered a few remarks, generally agreeing with the ideas of the lecturer, and emphasising the uses to which old bags and rags can be applied as a manure for fruit trees.

NATIONAL CHRYSANTHEMUM.

OCTOBER 9.—A meeting of the General Committee took place at Anderton's Hotel on the above date, Mr. Robert Ballantine in the chair, there being a large attendance of members, including several delegates from affiliated societies. The Hon. Sec. announced that the sum of £17 17s. 6d. had been paid as prize-money at the September show, £14 17s. 6d. having been for Chrysanthemums, and £3 for vegetables—special prizes offered by Messrs. Sutton & Sons. A financial statement was also submitted, showing that the receipts to date amounted to £201 4s. 10d.; the several items making up that sum were given in detail. Also that since the beginning of the year 90 members had been elected, 80 of this number being ordinary, and 10 Fellows. Also that eight societies had been admitted to affiliation. The Hon. Sec. bore testimony to the services rendered to the Society by Mr. H. J. Jones, of Lewisham, who had introduced 23 new members. Seventeen ordinary members and one Fellow were elected.

At the conclusion of the ordinary business, Mr. C. E. Pearson, of the Chilwell Nurseries, Nottingham, read, at the invitation of the committee, a paper on "How to Improve our Chrysanthemum Shows." Mr. Pearson ably advocated reform in two aspects—one, changes in the methods of exhibiting cut flowers, which he described as frequently hideously formal; and recommended classes for a table of flowers of different types of Chrysanthemums set up with long stems in vases, &c., mingled with appropriate foliage, and also vases of flowers on straight stems so erect as not to hide their heads. He thought the provision of vases and glasses suitable for such an exhibit could be obtained at a moderate cost. As to groups of Chrysanthemums arranged for effect, he strongly denounced a collection of large flowers only, urging that all classes of Chrysanthemums should be included in such

groups, and not merely the Japanese and incurved sections only, as at present. He would discourage the use of large blooms as much as possible, and would employ foliage plants and Ferns in due proportion, to impart effect. He thought, instead of having plants on straight stems with one or two large flowers only at the top, bush-like plants carrying from eight to ten good blooms should be employed. Stakes to trained plants were also condemned, and the severely formal method of tying out the blooms was denounced.

The introduction of two or three classes to the schedule of prizes by way of beginning something in the way of reform was advocated, Mr. Pearson saying that exhibitors soon caught up ideas and applied them. Mr. Pearson concluded by stating that what he had put forth was with a view of promoting the best interests of the society, and resumed his seat amid hearty applause. Considerable discussion took place, and a general agreement in the views put forward by Mr. Pearson was expressed. The paper, together with a report of the discussion, will be published with the schedule of prizes early in the coming year. A hearty Vote of Thanks was passed to Mr. Pearson.

Royal Aquarium.

OCTOBER 11, 12, 13.—This Society has much reason to congratulate itself upon the very fine exhibition brought together on this occasion, for the floor of the building was completely filled, and a very bright and effective display was made all round; the table decorations in particular being most effective as well as numerous.

Two excellent groups of plants of Chrysanthemums were staged by Messrs. Norman Davis, nurseryman, Camberwell, and H. J. Jones, Ryecroft Nursery, Lewisham; and the judges found considerable difficulty in deciding which was the better, the 1st prize eventually going to Mr. Davis. The flowers in these groups were finely developed, and equal to those we have been accustomed to see at the November exhibitions. Mr. Davis was the only exhibitor of twelve plants of Chrysanthemums.

Cut blooms of Japanese varieties were particularly good, and another week would have brought many of them up to November form. The 1st prize for twenty-four varieties was awarded to Mr. H. Shoemith, gr. to M. Houghton, Esq., Shirley, Croydon; his leading flowers, which were very fine, were Mlle. Thérèse Rey, President Borel, Sunflower, Miss A. Hartsborn, G. C. Schwabe, Madame M. Hoste, Col. W. B. Smith, Madame Edouard Rey, Kentish Yellow, Mrs. C. H. Payne, Avalanche, Charles Shrimpton, John Shrimpton, Puritan, Mrs. Falconer Jamieson, and W. Tricker; 2nd, Mr. C. Cox, The Gardens, Great Brickenden, Herts.

There was a very spirited competition with twelve Japanese, some very fine blooms being staged in this class also. Mr. W. Collins, Ponsbourne, Hertford, was 1st, with R. C. Kingston, Puritan, E. Molyneux, Stanstead White, Madame M. Hoste, Sunflower, Avalanche, Mrs. F. Jamieson, G. C. Schwabe, Bouquet des Dames, Mons. W. Holmes, and Miss A. Hartsborn; 2nd, Mr. Thos. Wilkins, The Gardens, Inwood House, Henstridge, Blandford. The best twelve blooms of incurved were shown by Mr. E. Rowbottom, The Priory Gardens, Hornsey, his leading flowers were very good for the season. These were M. R. Babuant, Mons. Jules Barigny, Refulgence, Baron Hirsch, Mons. L. Parle, Mrs. Dixon, and Mr. Bunn. There were other classes for cut blooms, in which there were some good flowers staged.

Mr. J. R. Chard, floral decorator, Stoke Newington, took the 1st prize for a table of wreaths, bouquets, sprays, &c.—an excellent display; and he was also 1st with three vases or epergnes out of ten competitors; Mr. F. W. Sale, Sevenoaks, was 2nd. This class made a remarkable display.

Special prizes were offered by Messrs. Sutton & Sons for various vegetables, but the competitors were few, though the produce was good.

In the way of miscellaneous exhibits, Messrs. J. Laing & Sons, Stanstead Park Nursery, Forest Hill, received a Silver-gilt Medal for a large and striking group of Begonias, and a Silver Medal for a large collection of Apples and Pears. Silver-gilt Medals were also awarded to Messrs. J. Cheal & Sons, nurserymen, Crawley, for a very effective display of Dahlias, and Apples and Pears; to Mr. J. Watkins, nurseryman, Withington, Hereford, for a very fine collection of Apples and Pears, the former remarkable for their brilliancy of

colour; and to Messrs. H. Cannell & Sons, Swanley, for vegetables and cut Dahlias. Silver Medals were awarded to Mr. H. J. Jones, Ryecroft Nursery, Lewisham, for a collection of cut Chrysanthemums; to Mr. W. J. Godfrey, nurseryman, Exmouth, for the same; and to Mr. S. Mortimer, nurseryman, Farnham, for Dahlias and Stephanotis. Several Bronze Medals were also awarded.

FLORAL COMMITTEE.

A meeting took place in the library, at 2 P.M., W. H. Fowler, Esq., J.P., in the chair. First-class Certificates were awarded to Mr. W. J. Godfrey, for *Eda Prass*, a very fine Japanese, creamy-white ground, flushed with rosy-pink, fully incurved. To Mr. Norman Davis, nurseryman, Camberwell, for Japanese, *Louise*, a fully-incurved flower of a lovely shade of flesh-pink, and a most promising novelty. To Mr. H. Shoemith, Shirley, Croydon, for Japanese, *Mdlle. Thésée* Rey, pure ivory-white, with long broad florets, a full handsome flower. To Mr. E. Rowbottom, The Priory Gardens, Hornsey, for *Edith Rowbottom*, a rosy carmine, full flower of excellent quality. To Mr. E. Beckett, The Gardens, Aldenham House, Elstree, for Japanese, *Madame Edouard Rey*, a rosy-pink reflexed handsome flower; and to Charles Davis, clear yellow, flushed with bronze, a sport from *Viviani Morel*—the early flowers of this fine sport come of a pale colour, as in the parent variety; this was shown by Mr. H. J. Jones, Lewisham. Several other promising incurved and Japanese varieties the Committee requested should be again sent to them. First-class Certificates were also awarded to Mr. T. S. Ware, for *Cactus Dahlia Ernest Glasse*, *Pompon Dahlia Emily Hopper*, and to *Nerine elegans alba*; to Mr. John Arnold, Stoke, Devonport, for decorative *Dahlia Miss Arnold*; to Messrs. J. Laing & Son, Forest Hill, for double *Begonia Duke of Eife*; to Messrs. H. Cannell & Son, Swanley, for *Cactus Dahlias Old Gold* and *Cannell's Gem*; and to Mr. A. Waterer, Knap Hill Nursery, Woking, Surrey, for *Quercus concolor coccinea*.

KENT COUNTY HARDY FRUIT SHOW.

OCTOBER 10, 11.—This exhibition, held in the Corn Exchange, Maidstone, was by far the largest of its kind that has hitherto been held, and must have convinced everyone who saw it that an immense interest and zeal have been thrown into the cultivation of hardy fruits. In many of the various classes the competition was very keen, especially in class 1, that for single sieves of dessert Apples, there being no less than seventeen competitors, and eighteen for that quantity of cooking Apples. The Society, with a view to the encouragement of fruit growing, offered liberal prizes for sieves, half do., and quarter do., as also for larger collections. Mr. Woodward, gr. to Roger Leigh, Esq., Barham Court, maintained his usual position in the large classes, followed by Mr. G. Chambers, Mereworth, who showed well; Mr. Manwaring, Brenchley; T. Oliver-son, Esq., East Sutton Park, Staplehurst (gr., Mr. T. Skinner); and Messrs. Goodwin & Fearon, Mereworth.

There were capital groups of plants exhibited, not for competition, from Linton Park, Mote Park, Preston Hall, and Barham—very meritorious collections; and also a magnificent display of fruits and vegetables were put up by Mr. Jarman, gr. to H. Brassey, Esq., Preston Hall.

Dessert Apples.—One sieve: Mr. W. W. Hubble, The Elms, Hunton, was 1st, showing Cox's Orange; Mr. W. H. Fearon 2nd, Mr. S. H. Goodwin, Mereworth, 3rd; and 4th fell to Mr. A. J. Thomas, Sittingbourne. There were seventeen competitors.

Cooking Apples.—Out of eighteen lots, Mr. Chambers, Beech Farm, took the lead, showing large and bright fruits of Warner's King; W. W. Hubble 2nd, and Mr. Leney, Court Lodge, Farleigh, was 3rd.

Dessert Apples, Four Quarter-sieves, Distinct Varieties.—1st, Mr. S. H. Goodwin; 2nd, Mr. Thomas Manwaring, Brenchley; and 3rd fell to Mr. Chambers; there were fifteen competitors.

Dessert Apples, Two Quarter-sieves.—1st, Mr. Hubble; 2nd, Mr. Fearon; and 3rd went to Mr. Austin Killick, Weaving, Maidstone.

Kitchen Apples, Four Quarter-sieves.—1st, Mr. Leney, showing large striped Beaufin, Lord Derby, Cox's Pomona, and good Tower of Glamis, the latter being the finest of that sort in the show; Mr. Lockyer, Mereworth, followed very close with Lady Henniker's, Stone's, Warner's, King and Cox's Pomona.

Kitchen Apples, Two Quarter sieves.—Mr. Hubble was 1st, with large and well-coloured Wellingtons and Blenheims; 2nd, Mr. Chambers.

Pears, Two Quarter sieves.—Mr. Leney, Court Lodge, took the lead, showing large Pitmaaston Duchess and Uvedale St. Germain; 2nd, Mr. F. Leney, Wateringbury; 3rd, Mr. Manwaring.

Collection of farm fruits, nine dishes of Apples and three dishes Pears, twelve fruits to a dish. Mr. Goodwin showed good Hoary Morning, Stones, Warner's King, King of the Pippins, Lady Henniker, and Pomona. Pears: Pitmaaston Duchess, Doyenné du Comice, and Hacon's Incomparable, and he was awarded the 1st prize. Mr. Thomas was a good 2nd, showing larger fruits, which fell somewhat short in colour; 3rd, Mrs. M. Fremein, Teston.

For four dishes of Apples and two of Pears, 1st fell to Mr. Fearon, and 2nd Mr. Austin T. Killick.

Collections of any fruits not named above, Mr. Chambers took the 1st, showing well preserved Cherries, Walnuts, Cobs, Medlars, Quinces, Shepherd's Bullaces, Plums, &c.; 2nd, Mr. Tooth.

For twenty-four dishes open. Mr. Woodward took the lead with a fine lot, Mr. Manwaring following, and the third fell to Mrs. Fremein.

Eighteen dishes of Apples and six of Pears: Mr. Woodward was again well to the fore, showing fine specimens of Beauty of Kent, Peasgood's Nonsuch, Cox's Pomona, Bedfordshire Foundling, Alfriston, Doyenné du Comice, Pitmaaston Duchess, Beurré Superfin, General Todleben Pears, &c. Mr. Chambers took 2nd honours, and his lot was also good, especially the Pears. Mr. Skinner was placed 3rd, with a very meritorious lot, his Apples being very fine. There were also prizes offered for dried fruit, jams, &c.

Mr. Frost, of the Borough Nurseries, exhibited a large stand of cut Dahlias, in which Pompons were a conspicuous feature.

CALIFORNIA.

MURRAYA EXOTICA.

I CANNOT recollect having seen any reference to *Muraya exotica* in the columns of the *Gardeners' Chronicle* of recent years. I therefore take pleasure in commending this beautiful shrub to lovers of fine plants. My experience with it has been as follows. Four years ago I purchased a plant from a Florida firm, a very small thing, and evidently a seedling. It is now 4 feet high, about 2½ feet in diameter, of perfect symmetry, and covered with its pure white, many-flowered corymbs of deliciously-scented blossoms, much resembling those of the Orange, though smaller. *Muraya* is a Rutaceous plant, very close to Citrus, I should imagine; indeed, I have been informed that it can easily be worked on to Citrus trifoliata cuttings, though somewhat slow to strike, give a fair percentage of plants. The foliage of *Muraya* is extremely neat, rather small, dark glossy green, pinnately arranged, and quite persistent. This plant has a rather wide distribution, from southern and insular India to North Queensland; notwithstanding this ultra-tropical habitat, it flourishes well with us in the open air, and I fancy would succeed with you admirably under warm greenhouse treatment, taking care that the growth be thoroughly ripened. We grow *Choisya ternata*, and think much of it, but *Muraya* is distinctly a finer thing, and deserves a place wherever fine plants are grown.

FERNS AND BEGONIAS.

To the ordinary observer, the arid, dusty, and russet appearance of much of the open or uncultivated country of Southern California is not suggestive of success in the culture of shade and moisture-loving plants; in the littoral regions the atmospheric humidity is, however, comparatively high during the summer and dry months, ranging between the extremes of 65° and 90°. The average summer humidity of Los Angeles, lying 18 miles from the sea, is about 78°. With this fact in view, and as our garden had become well shaded in places by trees and Palms, and quite protected against wind by trellis climbers, Bamboos, and Arundos, we were encouraged two years ago to attempt the culture of exotic Ferns and Begonias in the open ground, and

the measure of success attained far exceeds anything done within the limits of a small greenhouse. Selecting the most suitable place for a border, the natural soil was removed to a depth of 18 inches, 4 inches of rough gravel put in place, and overlaid by a compost of very old stable manure, clean river sand and leaf-soil, the following Ferns were then taken from the greenhouse and planted: *Adiantum formosum*, *A. excisum*, and *A. pubescens*; *Nephrodium molle*, *Onychium japonicum*, *Pteris argyrea*, *P. longifolia*, and *P. cretica albo-lineata*; *Hypolepis repens*, *Nephrolepis pectinata* and *N. exaltata*, several Hawaiian species not determined, *Alsophila australis*, and *Dicksonia antarctica*, the latter two in tubs. After planting, their culture consisted of simply watering twice a week, the two Tree Ferns being sprayed on their trunks every day. The manner in which these plants have thriven is surprising, bold vigorous growths in quantity affording liberal license with the scissors.

The Begonias have been treated in exactly the same manner, and comprise a few of the commoner species, or varieties of the shrubby section, such as *B. fuchsoides*, *B. semperflorens*, *B. maculata*, *B. rubra*, *B. argyrea*, *B. Weltonensis*, and some other garden varieties. Associated with these we have *Nagelia zebrina* and *Gesnera refulgens*. Altogether, the plants are a marked success, growing with great vigour, and producing flowers copiously. J. C. Harvey, Los Angeles, Cal., August 15, 1893.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inoh.	Ins.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.
	Above (+) or below (—) the Mean for the week ending October 7.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 1, 1893.	Below 42°, difference from Mean since January 1, 1893.				
0	1 — 38	0	+ 538	— 58	3 —	182	35.0	18	25
1	2 — 48	10	+ 328	— 13	3 —	146	19.6	41	33
2	2 — 50	4	+ 477	— 61	1 —	124	15.5	49	37
3	0 aver 67	0	+ 469	— 42	1 +	122	14.1	59	44
4	1 — 59	4	+ 636	— 52	3 +	120	15.0	50	42
5	0 aver 77	0	+ 561	— 46	8 +	118	16.3	52	46
6	3 — 45	5	+ 478	— 60	3 +	146	27.8	45	37
7	2 — 57	0	+ 692	— 93	9 +	136	23.7	39	37
8	2 — 64	0	+ 630	— 71	10 +	124	23.7	48	48
9	3 — 41	4	+ 553	— 101	2 +	157	25.0	44	32
10	3 — 50	2	+ 601	— 99	2 —	136	22.7	55	37
* 0 aver	97	0	+ 827	— 52	3 +	131	20.5	51	57

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts:—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts:—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending October 7, is furnished from the Meteorological Office:—

"The weather during this period was again very changeable and showery, frequent heavy falls of rain alternating with intervals of bright sunshine. Much

lightning was observed from time to time, and in many parts of England and the south of Scotland thunderstorms were experienced.

"The temperature was a little below the mean in nearly all districts, but just equalled it in 'England, S. and E.,' and the 'Channel Islands.' The highest of the maxima were registered on October 1, and ranged from 58° in 'Scotland, N.,' to 67° in 'England, E.' and the 'Midland Counties.' The lowest of the minima were recorded on the 4th over 'Great Britain,' and on the 7th over 'Ireland,' when they ranged from 28° in 'Scotland, E.,' 29° in 'Scotland, W.,' and 30° over both the 'Irish districts,' to 38° in 'England, S.,' and to 49° in the 'Channel Islands.'

"The rainfall was rather less than the mean in 'Scotland, N. and E.,' and 'England, N.E.,' as well as in 'Ireland, S.' In all other districts there was an excess, that in all the western and southern parts of England being large.

"The bright sunshine, notwithstanding the frequency of rain, was very prevalent generally, and exceeded the normal in all districts excepting 'Scotland, N.' The percentage of the possible duration which was actually recorded, ranged from 59 in 'England, E.,' to 39 in 'England, N.W.' In Scotland, however, the percentage was no higher than 18."

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

CAN some reader of the *Gardeners' Chronicle* give an idea of the time that must elapse before germination will take place in the case of seeds of the Palm *Acrocomia sclerocarpa*? I have had seeds in a bottom-heat ranging from 70° to 85° for three and a half years. Perhaps some old-timer will smile, but the seeds on being opened appear perfectly sound; the albumen is quite sweet, no sign of decomposition, and the germs appear quite sweet, plump, and sound, and can be removed with the point of a sharp knife. I have been informed indirectly that a gentleman in Florida raised plants of *Acrocomia Totai* which took five years to germinate. *J. C. Harvey, Los Angeles.*

MARKETS.

COVENT GARDEN, October 12.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

Prices rule as last week.

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	6 0-9 0	Orchids:—	
Aster, dozen bun.	3 0-6 0	Cattleya, 12 blms.	6 0-12 0
Bouvardia, per bun.	0 6-1 0	Odontoglossum	
Carnation, doz. bun.	4 0-9 0	crispum, 12 blms.	2 0-6 0
— dozen blooms	1 0-2 0	Pelargoniums, scar-	
Chrysanthemums, 12		let, p. 12 bun.	3 0-6 0
bunches	4 0-8 0	— 12 sprays	0 6-9 0
— doz. blooms	1 0-6 0	Primula, dble. p. bun.	0 6-1 0
Dahlia, doz. bun.	2 0-4 0	Pyrethrum, 12 bun.	2 0-4 0
Eucharis, per dozen	4 0-6 0	Roses, doz. bunches	6 0-12 0
Gardenia, per dozen	3 0-6 0	— Tea, per dozen	0 6-2 0
Heliotrope, 12 sprays	0 3-0 6	— coloured, dozen	2 0-4 0
Lilac (Fr.), per bun.	4 0-7 0	— yellow (Maré-	
Lilium lancifolium,		chals), per doz.	2 0-6 0
p. doz. blooms	2 0-3 0	— red, per dozen	1 0-1 6
— Harrisii, p. doz.	6 0-9 0	Sunflower, various,	
Maiden Hair Fern,		dozen bunches	2 0-6 0
12 bunches	4 0-6 0	Tuberose, 12 blms.	0 4-0 6
Marguerite, 12 bun.	1 6-3 0	Violets, Parmé, p. bn.	3 0-4 0
Mignonette, 12 bun.	2 0-4 0	— Czar, per bun.	2 0-3 0
Myosotis, 12 bunches	2 0-3 0	— English, per doz.	1 6-2 6
Pansy, per doz. bun.	1 0-2 0		

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	15 0-30 0	— small, per 100	4 0-6 0
— specimen, each	7 6-21 0	Foliage plants, doz.	12 0-42 0
Asters, dozen pots	4 0-9 0	Fuchsia, per doz.	4 0-6 0
Begonia in pots, doz.	8 0-12 0	Heliotrope, per doz.	4 0-6 0
Campanula, per doz.	6 0-12 0	Hydrangea, per doz.	12 0-24 0
Chrysanthemums, doz	6 0-9 0	Lilium Harrisii	18 0-24 0
— large plants, each	1 6-2 0	Marguerite, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, doz. pots	4 0-6 0
Dracena, each	1 0-5 0	Palms, various, each	2 0-10 0
Erica cafra, per doz.	9 0-15 0	— specimens, each	10 6-84 0
Evergreen Shrubs, in		Pelargonium, scar-	
var., per dozen	6 0-24 0	let, per dozen	3 0-6 0
Ficus elastica, each	1 6-7 6	Solanums, per doz.	9 0-12 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, per bush.	1 0-6 0	Peaches, per doz.	2 0-8 0
Cobs, per 100 lb.	30 0-...	Pine-apples, St. Mi-	
Grapes, per lb.	0 6-3 0	chael	2 0-5 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	0 6-...	Lettuces, per doz.	1 6-2 0
Beet, red, per dozen	2 0-3 0	Mushrooms, punnet	0 9-1 0
Carrots, per bunch	0 4-0 6	Mustard and Cress,	
Cauliflowers, each	0 3-0 6	punnet	0 2-...
Celery, bundle	1 0-1 3	Parsley, per bunch	0 2-0 3
Cucumbers, each	0 2-0 6	Shallots, per lb.	0 3-...
Endive, per dozen	1 3-1 6	Tomatos, per lb.	0 3-0 6
Herbs, per bunch	0 3-1 0	Turnips, per bunch	0 4-0 6
Leeks	0 4-...		

POTATOS.

Trade continues in a very unsettled state, and prices very low, except for very best samples, which are readily picked up at from 85s. to 95s.; Medium, 55s. to 70s.; Black Lands, 40s. to 45s. *J. B. Thomas.*

SEEDS.

LONDON: Oct. 11.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market devoid alike of business and of interest. Winter Tares, being apparently as nearly as possible exhausted, show a further advance. Giant seed Rye, on the other hand, continues cheap and good. Trifolium, being now most moderate in price, still finds buyers. Some few sales have taken place of new English Clover seed. Corn dealers and seedsmen, taking advantage of the present low quotations for Canary seed, are laying in their stocks for the winter. Hemp seed keeps steady. There is no change in Peas and Haricots. Linseed is firmer. Mustard and Rape seed are without alteration. The Board of Trade Returns give the imports of Clover and Grass seed into the United Kingdom for the first nine months of this year as 227,883 cwt., value £248,221, as against 207,803 cwt., value £156,631 for the corresponding period of 1892.

FRUITS AND VEGETABLES.

BOROUGH: October 10.—Quotations:—Cabbages, 4s. to 8s.; Savoys, 4s. to 8s.; Cauliflowers, 4s. to 8s. per tally; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; Apples, 2s. to 8s. per bushel.

SPITALFIELDS: October 10.—Quotations:—Cabbages, 4s. to 8s.; Savoys, 4s. to 8s.; Cauliflowers, 4s. to 8s. per tally; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; Apples, 2s. to 8s. per bushel.

STRATFORD: Oct. 10.—The supply to this market during the past week has been excellent, and a brisk trade was done at the undermentioned quotations:—Cabbages, 3s. to 6s. 6d. per tally; Savoys, 5s. to 7s. per tally; Cauliflowers, 9d. to 1s. 9d. per dozen; do., 3s. 6d. to 8s. per tally; Brussels Sprouts, 1s. 3d. to 2s. per half-sieve; do., 2s. 9d. to 3s. 6d. per bushel; Celery, 9d. to 1s. 2d. per roll; Cucumbers, frame, 1s. 3d. to 2s. 6d. per dozen; Horseradish, 1s. 6d. to 1s. 9d. per bundle; Turnips, 2s. to 2s. 6d. per dozen bunches; Carrots, household, 40s. to 55s. per ton; cattle-feeding, 30s. to 40s. per ton; Parsnips, 6d. to 9d. per score; Mangels, 21s. 6d. to 24s. per ton; Sweeties, 28s. to 30s. do.; Onions, English, 110s. to 120s. do.; Dutch, 4s. 9d. to 5s. per bag; Belgian, 5s. to 5s. 6d. per case; Apples, English, 2s. to 8s. per bushel.

FARRINGTON: October 11.—Quotations:—Onions, 5s. to 6s. per bag; Cabbages, 4s. to 8s.; Savoys, 4s. to 8s.; Cauliflowers, 4s. to 8s. per tally; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches.

October 12.—Quotations:—Apples, Blenheim, 4s.; do., cooking, 2s. 6d. per bushel; Pears, Calabasse, 4s. per half-bushel; do., common, 2s. 6d. per bushel; Damsons, 3s. per half-bushel; Plums, 5s. per half-bushel; Melons, 4s. per case; Grapes, 11s. 6d. per barrel; Tomatos, English, 4½d. per pound.

POTATOS.

BOROUGH AND SPITALFIELDS: October 10.—Quotations ranged from 45s. and 105s. per ton.

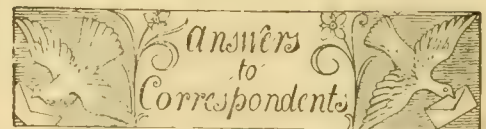
STRATFORD: October 10.—Quotations:—Dark-land Magnums, 40s. to 50s.; light do., 45s. to 60s.; Hebrons, 70s. to 85s.; Imperators, 50s. to 60s. per ton.

FARRINGTON: October 12.—Quotations:—Sutton's Abundance, 70s. to 80s.; Hebrons, 80s. to 90s.; Bruces, 50s. to 60s.; Magnums, 45s. to 50s.; Imperators, 50s. to 60s. per ton.

LONDON AVERAGES: October 11.—Hebrons, 70s. to 90s.; Regents, 60s. to 80s.; Magnums, 45s. to 60s.; other descriptions, 45s. to 50s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 160s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s. Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s. New Mixture, 115s. to 130s.; and Straw, 35s. to 55s. per load.



APPLE RIBSTON PIPPIN: *A Nine Years' Subscriber.* The variety may be grown in a pot in an orchard-house, and it will attain fine proportions and bright colour, but the flavour of the fruit will be much improved by partly plunging the pot in coal-ashes out-of-doors, and surface-feeding with rich mulches, kept in position with a zinc band.

BOOKS: *S. Grant.* The best we can recommend for your purpose is *Propagation and Improvement of Cultivated Plants*, by F. W. Burbidge; published by Blackwood & Son, price about 7s. 6d.

CARNATIONS DISEASED: *G. C.* The leaves are infested by the now common fungus *Helminthosporium echinulatum* (variable, *Cooke*). As the fungus vegetates within the leaf, no remedies will destroy it that do not destroy the leaf as well. Cut off all affected leaves, and burn them.—*Amateur.* *Helminthosporium echinulatum.* See above. For figure and description, vide *Gardeners' Chronicle*, August 21, 1886, p. 245.

CHRYSANTHEMUM BUD DEFORMED: *A. W. W.* The deformed bud sent is, as our authority tells us, but too common this season, and it is difficult to give a reason for this. Such buds are useless, having decayed at the extremity of the peduncle, rendering the further development of the flower an impossibility. As a rule, weakly-growing varieties like Mrs. A. Hardy, for instance, are much subject to the malady. The variety E. Molyneux, from which the specimen was taken, is, as a rule, robust of growth, but the bud sent us does not show it in true form, being weak in wood and leaf. The inability of the buds to grow-on is due to a check given to growth, probably while the bud was being formed. Such check might be caused by affording the plant too much or too little water, more probably the latter. The buds, being at a point farthest from the roots, would be the first to suffer from lack of root-moisture.

DAHLIA: *J. A.* The flower sent is a pretty decorative flower, resembling in colour J. Reuthe, a new Cactus variety. The colour is not yet common.

MELON-PLANTS DECAYING: *A. F.* The loss of plants is due to the presence of eel-worms on the roots. Throw out soil and plants, and make no more use of soil of the kind in which these plants were grown.

NAMES OF FRUITS: *A. B.* Pear Buerré Charnensis.—*Enquirer.* 1, Emperor Alexander; 2, Hawthorn-den; 3, Tibbett's Pearmain.—*G. Winter.* Pears: 1, Emille d'Héyst; 2, Maréchal de la Cour; Apple: 3, Golden Noble.—*J. F. Pears:* 1, Jersey Gratiale; 2, decayed; 3, Gansel's Bergamot; 4, Beurré Superfin; 5, Maréchal de la Cour; 6, Beurré Bosc.—*G. Paul.* Apples: 1, Manks Codlin; 2, not recognised; 3, Rymer; 4, Beauty of Kent.—*Johnson & Sons.* Apple Hambledon Deux Ans.—*G. Abbey.* Pear Soldat Espéren.—*C. B.* Pear Beurré d'Anjou.—*J. John Foster.* Pear Belle de Bruxelles.—*Ed. Allen.* 1, Hoary Morning; 2, Gipsy King; 3, Napoléon; 4, Beurré Diel.—*G. H.* 1, Cox's Orange Pippin; 2, Rawle's Reinette. *W. Tait & Co.* 1, Pitmaston Duchess.—*W. W.* 1, Grenadier; 3, Beauty of Kent; 4, Cox's Orange Pippin; 6, Reinette du Canada; 2 and 5, not recognised.—*T. S. Pears:* 1, Napoléon; 3, Belle de Bruxelles; 4, Swan's-egg; 5, Comte de Lamy; 7, Knight's Monarch; 2 and 6, not recognised.—*W. Waddy.* 1, Duchesse d'Angoulême; 2, Berkman's; 5, Bess Pool; 7, Claygate Pearmain; 8, Cox's Orange Pippin; 3, Pear Triomphe de Jodoigne.—*Jas. Wellington.* 1, Cox's Orange Pippin; 5, Wyken Pippin; 2, Ribston Pippin; 9, Beurré Diel; 6, Lord Derby; 8, Vicar of Winkfield. (For Answers to further questions, see our next issue.)

NAMES OF PLANTS: *W. G. Norrie.* 1, *Adiantum car-diochlena*; 2, *Blechnum occidentale*; 3, *Lastrea filix-mas cristata*; 4, *Adiantum hispidulum*; 5, *Asplenium marinum*; 6, *Polystichum angulare proliferum*; 7, *Cytomium falcatum*.—*H. M.* *Oncidium microchilum*.—*F. M.* 1, *Davallia divaricata*; 2, *Pteris argyrea*. We cannot undertake to name garden *Dracenas* and *Crotons*.—*U. C. B.* 1, *Mesembryanthemum album*; 2, *Nerine undulata*; 3, *Polygonum amplexicaule*; 4, *Asclepias curassavica*; 5, *Alonsoa linearis*.—*J. T. H.* *Fermoy.* *Begonia gracilis*, syn.—*B. Martiana.* *B.*

diversifolia, *B. bicolor*.—*N. J. M. D.* 1, *Scolopendrium vulgare*; 2, *Myrtus communis*, narrow-leaved var.; 3, *Acacia* sps., send when in bloom; 4, *Coronilla glauca*; 5, *Euonymus japonicus* var. *aureo-variegatus*; 6, *Eupatorium Weimannianum*; 7, *Asplenium bulbiferum*.—*G. M. C., Kingstown*. *Cirrhopetalum ornatisimum*.—*C. A. Long*. *Solanum marginatum*. *Ferns*.—*W. Cragg*. The Ferns sent are:—*Polystichum angulare* var. *cristatum*; *Lastrea Pseudomas cristata*, and *L. filix-mas grandiceps*; *Scolopendrium vulgare*, (2) *laceratum*, (3) *grandiceps nanum*, (4) *ramo-cristatum*, (5 and 6) *grandiceps*, all good. The only *Athyrium* worth naming are:—(2) *A. subcruciatum-cristatum*, (4) *cristatum*, (5) *Elworthii* (?), (6) *grandiceps*, (9), *Polydactylum*, (11) *Howardiae*, (14) apparently *torto-cristatum*. Of these, only 5 and 6 are good. Those unnamed are all defective, worthless seedlings, mainly of *A. Craigii*.

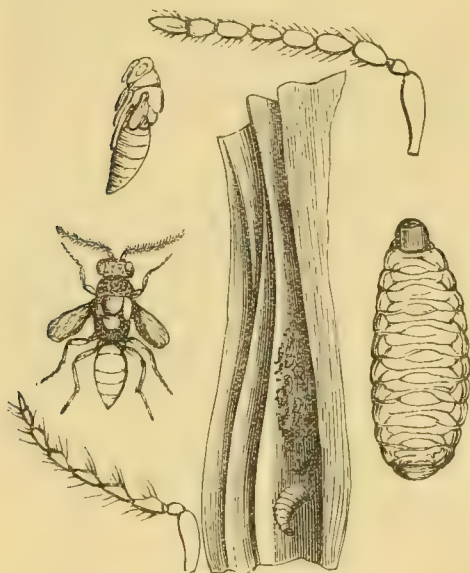


FIG. 83.—*ISOSOMA ORCHIDEARUM*.
Insect infesting Orchids.

ORCHID INSECT: *T. C.* The pest is *Isosoma Orchidearum*, the Cattleya Fly (See fig. 83.) The only remedy we know of is to cut off all infected growths as soon as noticed, which may be seen in the young growths when about an inch high, becoming very thick at base, tapering up very sharply, and making but little progress. (See *Gardeners' Chronicle*, 1869, p. 1231.)

SCALE ON PEAR TREES: *A Nine Years' Subscriber*. Wash the bark with Gishurst Compound Soap in the proportion of 4 oz. to 1 gal. of water, doing this in mid-winter.

SPELLING OF VINE NAMES: *L. Späth*. The best authority on the Vine spells the one, Gros Colman, the other Foster's Seedling, or Foster's White Seedling. Mr. A. F. Barron in his *Vines and Vine Culture*, states that M. Leroy in his catalogue for 1860, spells the first-named Gros Colman; whereas Jacquemet-Bonnefont, of Annonay in 1858 calls it Gros Colmar; and De Bavay in 1852 calls it Gros Colman. It is the Gros or Grosse Kölner of the Germans, and its other names are merely corruptions of this one. Foster's Grape is named after a Mr. Foster, gardener to Lord Downe, Beningborough Hall, Yorkshire. It came from the same potful of seedlings as Lady Downe's Seedling. The cross was in both cases between the Sweetwater and Black Morocco varieties. This was about sixty years ago.

WOODLICE IN FERNS: *H. W. P.* Other remedies having failed to rid the pots of Ferns of the insects, you might try what effect Keating's Insect Powder has on them. It is harmless to plant life.

COMMUNICATIONS RECEIVED.—*J. W.*—*B. P.*—*J. H.*—Constant Reader. —*W. J. Teesdale*. —*A. Plymouthian*. —*W. C.* —*C. T. D.* —*Thos. Lewis, Altrincham*. —*A. F. B.* —*M. C. C.* —*R. D.* —*W. B. Lathom*. —*F. G. H.* —*W. R. W.* —*W. M.* —*T. H.* —*T. H. S.* —*C. H. H.* —*J. D. M.* —*T. J. B.* —*M.* —*J. J. W.* —*W. W.* —*R. D. H. M.* —*A. P.* —*G. F. Wilson*.

SPECIMENS RECEIVED.—*J. B.*—*J. E.*—*W. H.*—*H. E.*—Parplexed.—*Jas. Ewing*.—*C. H.*

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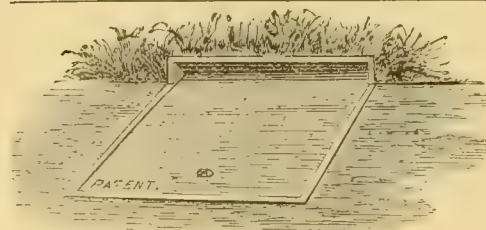
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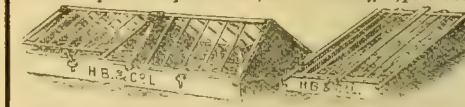
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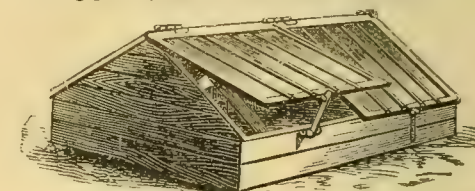
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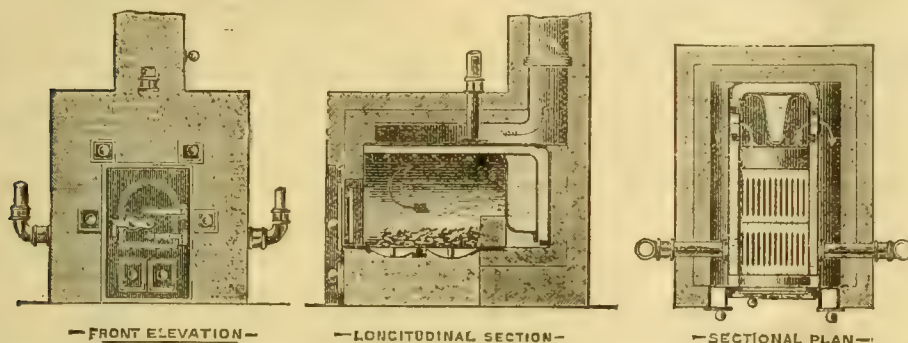
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M B 3	6 6	by 3 0	by 3 0	as follows:—	4000	" 32 0 0
M B 4	8 6	by 4 0	by 3 9		7000	" 60 0 0
M B 5						" 85 0 0

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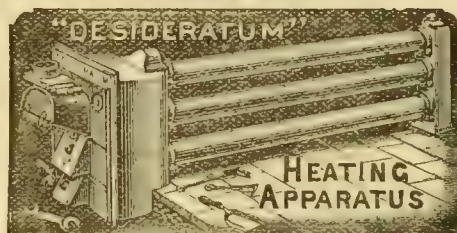
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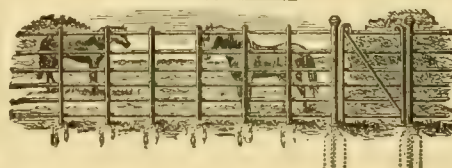
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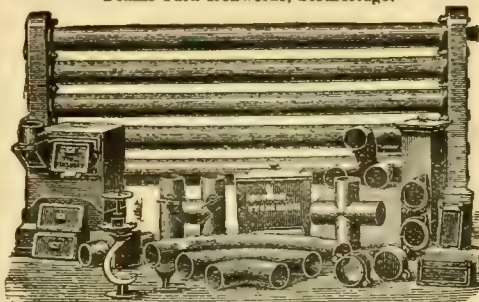
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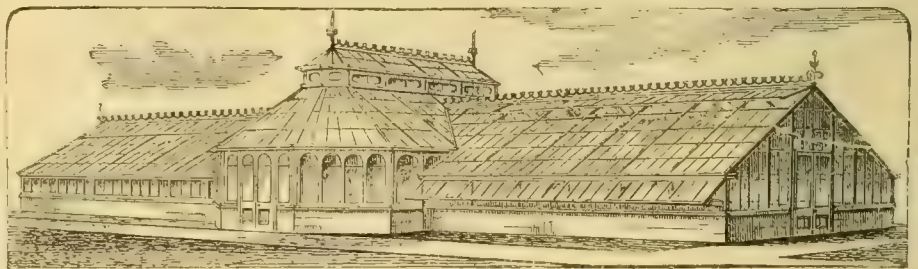
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2756.

No. 356.—VOL. XIV. { THIRD
SERIES. }

SATURDAY, OCTOBER 21, 1893.

{ Regt. as a Newspaper. } PRICE 3d.
POST-FREE, 34d.

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"GARDENERS' CHRONICLE."

Continued Increase in the Circulation.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per Cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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50,000 **LILIES** and **NARCISSUS**, extra fine home-grown; among these will be found extraordinary fine roots of **Lilium Colchicum**, **L. Browni**, **L. Chalcedonicum**, **L. Humboldtii**, the new **Bloomerianum magnificum** from Mexico, **Lilium Harrisii**, **L. Martagon album**, **L. Pardalinum**, **L. Pinnatifidum**, **L. Washingtonianum**, **L. speciosum album**, **L. rubrum** and **L. roseum**, very fine bulbs; **L. giganteum**, and numbers of other rare and beautiful varieties;

ROSES, ORNAMENTAL TREES and SHRUBS.

A grand lot of **Marchal Neils**, in 48-pots, 4 to 5 feet; in 3½'s, 8 to 9 feet; in 24-size pots, 12 to 14 feet; **Gloire de Dijon**, 6 to 8 feet, in pots; do. from ground, 3 to 4 feet, **White Bank-sian**, **Common China**, **W. A. Richardson**, fine stuff, 10 feet; and many others; **Maiden's Blush**, **Lanei**, **Standard** and **Dwarf** **Roses** in variety, including all the popular kinds; 2000 **Veronica Traversi** **Buxifolia**, fine stuff, in pots; **Cistus** of sorts, 500 **Olearia**, **Lombardy Poplars**, fine stuff, 10 to 12 feet, well furnished; a grand lot of **Aralia Sieboldi**, 1000 **Oval-leaved Privet**, good stuff; **American Blackberries**, and many other useful varieties; **THOUSANDS** of **HELLEBORUS** and other choice **Perennials**, including **Eulalia** and other **Ornamental Grasses**; **Everlastings**, **Anemone japonica**, several varieties; **Sunflowers**, **Gaillardias**, **Poppies**, **Centauras**, **Doronicums**, **Lychnis viscaria splendens plena**, **Campanulas**, **Rudbeckias**, **Yuccas**, a grand **COLLECTION** of **IRIS**, fine strong clumps, including the best forcing varieties; **Pumila** of sorts, **Olbienis** of sorts, **Sibirica** of sorts, **Florentina**, the sweet-scented variety; **Germanica**, in great variety; **Kompferi**, and many others; **Delphiniums**, and hundreds of other important families too numerous to mention.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, Land and Estate Agents and Valuers, 67 and 68, Cheapside, E.C.

Uxbridge.—Expiration of Lease.

Important **TWO DAYS' CLEARANCE SALE** of about 4 Acres of **NURSERY STOCK** by order of Mr. Charles Turner, in consequence of the Lease of this portion of the Land being about to expire.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nurseries, Uxbridge, on **MONDAY** and **TUESDAY**, November 13 and 14, at 12 o'clock, the whole of the unusually well-grown **NURSERY STOCK** on this portion of the Land, comprising **Limes**, **Chestnuts**, and other fine **Avenue Trees**; **Acubas**, **Laurels**, **Yews**, **Hollies**, **Box (Tree)**, **Pinus**, **Cupressus**, **Thuia**s, **Poplars**, **Laburnums**, **Mountain Ash**, and a large assortment of splendidly-grown **Conifers**.

Further particulars will appear.

Hextable, near Swanley Junction, Kent.

(About 20 minutes' walk from Swanley Junction Station).
ABSOLUTE CLEARANCE SALE of the whole of the extensive and valuable Collection of **ESTABLISHED ORCHIDS**, and other **PLANTS**, also the **LEASE** of the **NURSERY**, by order of Messrs. Fitcher & Manda, who are giving up the European Branch, in order to devote their entire attention to their American Nursery. The whole for Sale positively without the slightest reserve.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Messrs. Fitcher & Manda, to **SELL** by AUCTION, on the Premises, The United States Nursery, Hextable, near Swanley Junction Station, on **TUESDAY NEXT**, October 24, and **THREE FOLLOWING DAYS**, at half-past 12 o'clock precisely, absolutely without reserve, the whole of the valuable, extensive, and well-grown collection of

ESTABLISHED ORCHIDS,

comprising about

1500 **CYPRIPEDIUMS**,

many of them choice and rare varieties, and forming one of the best stocks in the Trade, including—

C. Arnoldianum, very rare	C. Amesianum
C. Bergenianum	C. Arthurianum, several
C. Barteti	C. calanthum, several
C. chelsiense	C. Godseffianum superbum
C. Chas. Canham	C. grande atratum
C. Leeannum superbum, several	C. Harrisianum superbum
C. leuchorrhodum, several	C. Niobe, Short Hills variety
C. Morganii, 12 plants	C. pavoniam, several
C. macropterum	C. orphnum
C. Schroderi splendens	C. Spicerianum

CYPRIPEDIUM INSIGNIS, in extra fine varieties, possibly the best in the country.

200 fine hybrid Seedling **CYPRIPEDIUMS**, unflowered.

3000 CATTLEYAS and LÆLIAS,

amongst them **Cattleya Trianae alba** (true),

Cattleya Trianae Smithii, the darkest variety; **Cattleya species** (new), not yet flowered; **Cattleya labiata Gravesiana**, **C. Mendellii**, **Mossie**, and speciosissima; **Lælia autumnalis alba** (true), **L. A. Forstermanni**, **L. purpurata**, grand varieties; **L. albidula sulphurea**, **L. Eyermannii**.

ODONTOGLOSSUM CRISPUM,

splendid varieties, established; also semi-established and imported plants. **Odontoglossum luteo-purpureum**, **Harry-anum**, **Vexillarium** (quantity), **Rosii majus**, **Insleyi Leopoldinum**, **tigrinum**, &c.; **Cyclopogon cristata alba** (several).

CYMBIDIUM LOWIANUM MANDANTIAUM (pure yellow), **SOBRALIA XANTHOLEUCA**.

SOBRALIA, PRINCESS MAY (New).

MASDEVALLIAS, a fine collection; **TRICHOPIPLIA SUAVIS**, **DENDROBIUM NOBILE NOBILIS** and **COCKSONI** (several), **D. NOBILE SANDERIANA**.

DENDROBIUM REBLINGIANUM, new hybrid, the entire stock in England.

DENDROBIUM AINSWORTHII, &c.

A good lot of **Rare NEPENTHES** and **SARRACENIAS**.

A large quantity of **ADIANTUM CUNEATUM VARIEGATUM** (New), and many other plants.

Bay Cob, Light Cart, Van, quantity of Lights and Frames, Flower Pots, Erection of Office, Office Furniture, and the whole of the Utensils in Trade. Also the **LEASE** of the **NURSERY** (ten years unexpired), including eight Greenhouses, heated by 2270 feet of hot-water piping; Stabling and Sheds. Held at the extremely low rental of £20 per annum.

May be viewed one week prior to Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call particular attention to this important Sale, comprising, as it does, such a large number of rare and valuable **CYPRIPEDIUMS** and other **ORCHIDS**, the whole for absolute Sale without the least reserve.

Toddington Nurseries, near Winchcomb,

GLOUCESTERSHIRE.

GREAT SALE OF NURSERY STOCK, by order of the Toddington Orchard Company, Ltd., in Liquidation, comprising large quantities of **FRUIT** and **FOREST TREES**, **SHRUBS**, &c.; also **PEACH TREES**, a splendid lot of **TREE CARNATIONS** for winter-blooming, **FERNS**, and **ROSES**, all in pots.

The Fruit Trees include **Standard** and **Half-standard**, and **Bush Apple** and **Pears** of leading sorts, **Gisborne** and **Pershore** feathered **Fruit Trees**, **Black** and **Red Currants**.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, on the Premises, The Nurseries, Toddington, near Winchcomb, on **WEDNESDAY** and **THURSDAY**, November 8 and 9, at 1 o'clock precisely.

May be viewed one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Bagshot.—Preliminary Notice.

IMPORTANT THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted **NURSERY STOCK**, which has been carefully prepared for removal, especially selected for Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, on **TUESDAY**, November 21, and **TWO FOLLOWING DAYS**, several acres of **NURSERY STOCK**, grown to the greatest perfection, and exceedingly well rooted, including a fine lot of named **Rhododendrons**, **Green** and **Variegated Hollies**, **Spruce Firs**, and other **Stock**. Fuller particulars will appear.

Enfield Highway. The Brimsdown Nurseries.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to **SELL** by AUCTION, on the premises as above on **WEDNESDAY**, November 8, a large quantity of well-grown **CONIFERS** and **SHRUBS**, 200 large specimen **Aucubas**, **Irish Ivies**, **Clematis**, and other climbers, standard, half-standard, and Dwarf **Roses**, 1000 Intermediate Stocks, best market strain, and fine assortment of **Stove** and **Greenhouse Plants**, **Ferns**, **Winter blooming Heaths**, &c. May be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.
5000 LOTS SOLD WEEKLY.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class **HYACINTHS**, **TULIPS**, **CROCUS**, **NARCISSEUS** and other **BULBS** from Holland; also **ROMAN HYACINTHS**, **LILUM CANDIDUM** and other bulbs for early forcing, lotted to suit the Trade and private buyers. On view morning of Sale, and Catalogues had.

Monday Next.

English-grown **LILIES**, **NARCISSI**, **IRIS**, **FREESIAs**, new **CARNATIONS**, **CALLAs**, **CANNAs**, **PINKS**, **CLEMATIS**, **IVIES**, **ROSES**, 40 lots of **Greenhouse FERNs**, **TEA ROSES** in pots, **Hardy BULBS**, **PLANTS**, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY** NEXT, October 23, at 12 o'clock. On view morning of Sale, and Catalogues had.

Thursday Next.

200 **AZALEA** **MOLLIS** and other **Plants** from Belgium, **STOVE** and **GREENHOUSE PLANTS** in variety; 150 lots of **Home-grown LILIES**, **CALOCHEORTI**, **CARNATIONS**, and various **HARDY BULBS** and **PLANTS**.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY** NEXT, October 26, at 12 o'clock. On view morning of Sale, and Catalogues had.

Friday Next, October 27.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., on **Friday** next, October 27, 1893, at 12.30 o'clock, by order of Mr. F. Sander,

A splendid importation of

ODONTOGLOSSUM LUTEO-PURPUREUM.

This is the most variable and productive of fine forms of all the species of *Odontoglossum*. Much might be written of the numerous varieties that have been considered worthy of special names, but from among them we may call to recollection some of the most noteworthy, such as the *Grand Yellow variety Vuystekeanum*, the splendid form called *Illustris*, the varieties *Ameianum*, *Rothschildianum*, *Amplissimum*, and numberless mules of great beauty.

The present is a good time to purchase. The plants are in capital order, and will begin to break very quickly.

Odontoglossum luteo-purpureum has not been offered for a considerable length of time, and an opportunity like this to secure a good stock of such a grand, and easily-cultivated, and showy *Odontoglossum*, should not be neglected.

CYPRIPEDIUM ROTHSCILDIANUM,

In fine order and condition.

Oncidium lanceanum *Superbum*, very fine imported Plants, *Cattleya Leopoldi*, very fine.

CŒLOGYNE ASPERATA C. DAYANA.

DENDROBIUM SPECIOSUM FROM THE GULF OF CARPENTARIA.

And many other valuable, established, and imported Orchids. On view morning of Sale, and Catalogues had.

SPLENDID BULBS FROM HOLLAND.

Sales every **MONDAY**, **WEDNESDAY**, **THURSDAY**, and frequently on **SATURDAY**.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice **HYACINTHS**, **TULIPS**, **CROCUS**, **NARCISSUS**, and other **BULBS**, arriving daily from well-known farms in Holland in the finest possible condition. On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Monday Next.

LAST SPECIAL SALE OF THE SEASON OF DUTCH BULBS, from Mr. H. HOMAN.

MR. J. C. STEVENS begs to announce that he will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **MONDAY** NEXT, a Grand Importation of **BULBS**, in splendid order, from Mr. H. Homan, of Noordwijld, Holland. On view morning of Sale, and Catalogues had.

Wednesday Next.

300 choice named Dwarf **ROSES**, a fine Collection of **CARNATIONS** and **PICOTEES**, and other **Border Plants**; 30,000 **LILY OF THE VALLEY** Crowns (Berlin), 1000 Clumps of **LILY OF THE VALLEY**, 1000 **SPIRÆAs**, a Consignment of **AZALEAS** and **DRACÆNAS** from Ghent, 5000 **LILUM HARRISI**, 5000 **TUBEROSAS**, 10,000 Yellow **CROCUSES**, 20,000 **SCILLA SIBIRICA**, choice **LILiums**, &c.

MR. J. C. STEVENS will include the above in his **SALE** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY** NEXT, October 25.

On view morning of Sale, and Catalogues had.

Wednesday Next.

A Consignment of **ROSE TREES**, **CLEMATIS**, **HYDRANGEAS**, **HOLLY TREES**, **RHODODENDRONS**, **LILiums**, &c., from Holland.

MR. J. C. STEVENS will include the above in his **SALE** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY** NEXT, October 25.

On view morning of Sale, and Catalogues had.

Tuesday and Saturday Next.

TWO SPECIAL SALES OF DUTCH AND OTHER BULBS.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **TUESDAY** and **SATURDAY** NEXT, October 24 and 28, at half-past 12 o'clock precisely, each day. Grand importations of **Bulbs** in the best possible condition, from several leading growers in Holland, and specially lotted to suit all buyers. French forcing **Bulbs**, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

A fine Collection of Established **ORCHIDS**, many in **Flowers**.

MR. J. C. STEVENS will include in his **SALE** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY** NEXT, October 26, a fine and varied Collection of well grown Established **ORCHIDS**, chiefly in **Flower** and **Bud**, including some choice specimens.

On view morning of Sale, and Catalogues had.

Thursday Next.

GREAT TRADE SALE OF DUTCH BULBS.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY** NEXT, October 26, at half-past 12 o'clock precisely, an enormous Consignment of **DUTCH BULBS**, specially lotted for the Trade and other large Buyers. On view morning of Sale, and Catalogues had.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold **SALES** at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—

EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.

EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other **Bulbs**.

EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut **Flowers**.

EVERY THURSDAY, at 11.30 A.M.—*Azaleas*, *Camellias*, *Palms*, *Dracænas*, and other **Plants** from Belgium; **Roses**, **General Nursery Stock**, **Carnations**, **Dutch** and **French Bulbs**.

EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut **Flowers**. **EVERY THIRD THURSDAY**, at 12 o'clock.—Established and Imported **Orchids**. All Catalogues post free.

Messrs. JAMES AND BAXTER conduct Sales and Valuations of **Nursery Stock**, **Live** and **Dead Farming Stock**, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

Great Doods, Reigate, Surrey.

Preliminary Announcement.

To **ROSE GROWERS**, **HORTICULTURISTS**, and Others.

MESSRS. JOHN LEES AND BURCHELL are instructed to **SELL** by AUCTION, on the Premises, early in November, the important Stock of about 7000 **EXHIBITION ROSE TREES**, established by the late A. J. Waterlow, Esq., for many years one of the most successful exhibitors of **Roses** at the Crystal Palace and other Shows. Also **STOVE** and **GREENHOUSE PLANTS**, **SPECIMEN FERNs**, **FRUITING VINES**, **STRAWBERRY PLANTS**, **SHRUBs**, &c. **Offices**—17, Wool Exchange, London, E.C.; and Reigate, Surrey.

Dorking Nurseries, Dorking.

Close to L.B. & S.C. and N.E.K. Stations.

ANNUAL SALE of well-grown and healthy young **NURSERY STOCK** (in first-rate condition for transplanting), viz.:—Box, Hollies, **Portugal Laurels**, **Arbor-vitæ**, **Common Yews**, **Flowering Shrubs** in variety, **Abies Douglasii**, **Pinus** and **Piceas** in variety, **Berberis** of sorts, **Privet**, and **Rhododendrons**, mixed **Ivies**, and other **Climbers**; **Spruce** and other **Firs** of various heights up to 10 feet (fine, for immediate effect), a quantity of **Ornamental Trees**, such as **Poplars** of sorts, **Birch**, **Planes**, **Limes**, **Maples**, &c. **Choice Standard** and **Pyramid Apples**, **Pears**, and **Plums**; healthy young **Cob Nuts** and **Filberts**, a quantity of **Gooseberries** and **Currants**, **Laurels**, various sizes; also a collection of strong **Chrysanthemums** and choice named **Carnations** in pots.

MESSRS. WHITE AND SONS will **SELL** the above by AUCTION, under instructions from Messrs. Ivory & Son, on **TUESDAY**, October 24, 1893, at 12 o'clock precisely.

Catalogues may be obtained at the place of Sale; of Messrs. **IVORY AND SON**, High Street, Dorking; at the Inns in the neighbourhood; and of the Auctioneers, Land Agents and Valuers, High Street, Dorking, and on **Fridays** at **Leatherhead**.

Cleeve Hill Nurseries, Exwick, Exeter.

Within a few minutes' walk of St. David's Railway Station. **SALE** of well-grown **NURSERY STOCK**, presenting to Gentlemen and the Trade engaged in planting a splendid opportunity of securing well-assorted and thriving **Young Stock**.

MESSRS. HUSSEY AND SON are favoured with instructions from Mr. R. Vanstone, who is relinquishing the business, to **SELL** by AUCTION, on **MONDAY**, **TUESDAY**, and **WEDNESDAY**, October 23, 24, and 25, commencing each day at 11 o'clock, the whole of the extensive **NURSERY STOCK**, comprising:—Specimen **Border Shrubs**, in rich assortment; large quantity of **Conifers** of the choicest description and various sizes, a quantity of **Evergreens**, comprising **Variegated** and **Green Hollies**, **Golden** and **English Yews**, &c.; **Ornamental Trees**, **Shrubs**, and **Climbing Plants**; large quantity of **Fruit Trees**, including **Standard**, **Dwarf**, and **Pyramidal Apples**, ditto **Pears**, **Peaches**, **Nectarines** and **Apricots**, &c.

Catalogues can be obtained of the Auctioneers, 14, Queen Street, Exeter.

HIGHLY IMPORTANT NURSERY SALE, by AUCTION, at **BELLBRAE NURSERIES**, **CUPAR**, by Mr. **WILLIAM WATT**, on **MONDAY** and **TUESDAY**, November 6 and 7 next, owing to the natural Termination of his Leases, and the REMOVAL of his **NURSERY BUSINESS** to **MIDDLEFIELD**, comprising One of the Finest and Largest Selections of **Forest Trees**, **Ornamental** and **Avenue Trees**, **Shrubs**, **Fruit Trees**, **Roses**, &c., in great variety—all healthy, well fibred, and in excellent condition for removal to any climate, having been grown in exposed situations.

Sale to Commence each Day at 11 A.M. Catalogues will be Ready in a few days, and any information desired will be given on application to Mr. **WATT**, or the Auctioneers—**Cupar**, October 17, 1893. Messrs. **LYON AND TURNBULL**.

Ottershaw Nurseries, near Chertsey, Surrey.

MESSRS. WATERER AND SONS have received instructions from Messrs. Fletcher Brothers (in consequence of the land being required for Building purposes) to **SELL** by AUCTION, on **Monday**, October 30, 1893, and two following days, at 11 for 12 o'clock each day, the exceptionally well-grown **NURSERY STOCK**, in excellent condition for removal, comprising 5000 **Choice Fruit Trees**, **Forest Trees**, **Standard** and **Dwarf Roses**, **Ornamental Evergreen Trees** and **Shrubs**, including many fine **Specimen Plants**; 4000 **Weymouth Pine**, 1 to 10 feet; 1000 **Caucasian Laurels**, 50,000 **Larch**, 1 to 8 feet.

May be viewed seven days prior to Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at Chertsey, Weybridge Station, and Walton-on-Thames.

Moxhull Hall, Erdington, near Birmingham.

MESSRS. JAMES AND BAXTER are instructed by Henry Fisher, Esq., J.P. (who is shortly leaving the neighbourhood), to **SELL** by AUCTION, without reserve, on the premises, The Gardens, Moxhull Hall, Erdington, on **WEDNESDAY** NEXT, October 25, at 12 o'clock, the very fine Collection of **ORCHIDS**, **SPECIMEN PALMS**, **STOVE** and **GREENHOUSE PLANTS**.

Catalogues may be obtained from Mr. DAVIES, the Head Gardener, on the Premises; and of the Auctioneers, 12, Bull Ring, Birmingham.

TO LET, on ten years' LEASE, a good

FLORIST and **NURSERY BUSINESS**, doing a good Local Trade; seven Houses, and Outside Grounds, all well stocked, in a good position in Kent, close to a railway station.

Apply to B. HORTUS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, at a great sacrifice, in consequence

of age and illness, a **FLORISTS' PLANT**, **STOCK** IN **TRADE**, and **LEASE**. In Surrey, near station, short distance from London.—Apply to H. A. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

PROTHEROE AND MORRIS, HORTICUL-

TURAL MARKET GARDEN and **ESTATE AUCTIONEERS** and **VALUERS**, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly *Horticultural Register* had on application.

FOR ORCHIDS and GARDENERS

to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of *Orchids* in the World.—30 minutes from St. Pancras.

FOR SALE, 10,000 three and four times trans-

planted **SCOTCH FIRs**, from 4 to 12 feet, well furnished. Less than half price.

E. TANNER, Nurseryman, Groombridge, Sussex.

CAMELLIAS.—What offers in exchange for

eighteen well-grown *Camellias*, mixed, single and double, varying from 2 to 9 feet high? In full bud. *Palms* and *Cool Orchids* preferred.

W. P. BLACKBURN-MAZE, Shaw House, Newbury.

PELARGONIUMS.—Strong-rooted cuttings,

all the best market sorts. Mixed, 10s. and 15s. per 100. No Seedlings or rubbish.—E. HILLER, Torquay Nurseries, Enfield Road, Old Southgate.

SUPERB ORCHIDS, CHEAP.—Thousands

to select from. Write for LIST, free.

P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

GREAT BARGAINS in valuable PLANTS,

being the unsold Lots from the Sale at Stanmore Park Gardens, Stanmore, viz.:—

TEA, **ROSES** best varieties, in 48's, 9s. per dozen.

H.P.'s, 6s. per dozen; from ground, 5s.

SOLANUMs, well-berried, in 40's, 6s. per dozen.

PRIMULAs, in 48's, 3s. per dozen.

SMILAX, 3s. per dozen.

HEATHs, in variety, 12s. per dozen.

LILUM CANDIDUM, 2s. per dozen.

BUCHARIS AMAZONICA, fine bulbs, 9s. per dozen.

NEAPOLITAN VIOLETs, same as previously advertised

at 12s. per dozen, 6s. per dozen.

Apply to **FOREMAN**, as above.

WINTER-FLOWERING PLANTS

WILLIAMS'	for	AZALEAS.
WILLIAMS'	for	CAMELLIAS.
WILLIAMS'	for	HEATHS.
WILLIAMS'	for	EPACRIS.
WILLIAMS'	for	BOUVARDIAS.
WILLIAMS'	for	SOLANUMS.
WILLIAMS'	for	CYCLAMENS.
WILLIAMS'	for	CARNATIONS.
WILLIAMS'	for	LILACS.

Williams' for all kinds of Winter-flowering Plants.

AN INSPECTION INVITED.

B. S. WILLIAMS & SON,

Victoria and Paradise Nurseries,

UPPER HOLLOWAY, LONDON, N.

FRUIT TREES.**To MARKET and PRIVATE GROWERS.**

We hold an extensive Stock of all kinds of the above, in first-rate quality and at reasonable prices. Intending Planters would do well to send for Descriptive Catalogue free on application.

S. SPOONER & SONS,
HOUNSLOW NURSERIES, MIDDLESEX.

FERNS A SPECIALITY.

A magnificent stock at remarkably low prices.

SPECIAL AUTUMN LIST NOW READY.
FREE ON APPLICATION.

ILLUSTRATED CATALOGUE of FERNs
(No. 22), 2s. post-free.

W. & J. BIRKENHEAD, F.R.H.S.,
FERN NURSERIES, SALE, near MANCHESTER.

DUTCH BULBS!

FRENCH BULBS!

AND
ENGLISH BULBS!

See our Special Wholesale CATALOGUE of BULBS, Containing LIST of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILiums, DAFFODILS, SNOWDROPS, IRIS, &c., free on application.

Please compare our prices before sending your orders abroad.

WATKINS & SIMPSON,

SEED AND BULB MERCHANTS,

EXETER STREET, STRAND, LONDON, W.C.

ENGLISH YEWS—ENGLISH YEWS FOR HEDGES.

ENGLISH YEWS, 2 to 2½ feet, at 9s. per dozen; 50s. per 100.
" 2½ to 3 feet, at 12s. per dozen; 70s. per 100.
" 3 to 4 feet, at 18s. per dozen; 120s. per 100.
" 4 to 5 feet, at 30s. per dozen; 200s. per 100.
" 5 to 6 feet, at 42s. per dozen.
Every plant a perfect specimen. Excellent roots.
Special quotation for large quantities.

JOHN PERKINS & SON,
52, MARKET SQUARE, NORTHAMPTON.
Nurseries, BILLING ROAD.

THE BEST

BULBS

AT CHEAPEST RATES.

EXTENSIVE COLLECTIONS OF
Hyacinths, Tulips,
Narcissi, Snowdrops,
Lillies, Crocuses, Scillas,
ETC., ETC.

ALL THOROUGHLY RIPENED.
Descriptive Catalogue, No. 428, Post Free
on Application.
Delivered Free by Rail or Parcel Post.

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Handsome specimens, 3, 4, 5, and 8 feet high. These are all of the *Best* type, and undoubtedly the finest plants in commerce. They are all Seedlings, the plants usually met with being grafted on the Common Spruce Fir.

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CHRYSANTHEMUM EXHIBITION.**NORMAN DAVIS**

begs to intimate that his magnificent Exhibition of these popular flowers is now open, free of charge. No one interested in Chrysanthemums should fail to visit this, "the oldest and best trade show." (Open all Sundays in October for private inspection only.)

Notwithstanding the splendid Novelties distributed by me last season, and which are giving such unbounded satisfaction all over the country, I feel confident that the present season's Novelties will surpass all previous introductions. Scores of splendid Novelties in all fantastical shapes, and remarkable for their distinctness, are now opening.

CHRYSANTHEMUM NURSERIES, LILFORD ROAD (Near Loughborough Junction), CAMBERWELL, LONDON, S.E.

N.B.—500 Plants of the New "GOLDEN VIVIAND MOREL," and almost as many "WILLIAM SEWARD," are alone worth a visit.

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BEST VARIETY.

GUILLERMO KALBREYER begs to offer the above well-known and justly-prized Orchid at the following prices, free on board of Royal Mail Company's steamers, at Savanilla:—£40 per 1000 good and healthy pieces.

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ODONTOGLOSSUM LUTEO-PURPUREUM,
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£36 per 1000.

CATTLEYA TRIANÆ, best variety, £8 per case.

Each case contains from fifty to sixty good, strong pieces, and measures about 20 inches by 34 inches.

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The best time for dispatching Orchids from here, and to establish them with the best advantage in Europe, are the months—December to April.

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ALBURY PARK NONSUCH.—A large, very heavy Apple, somewhat conical, with prominent ribs; of first-rate quality as a culinary Apple, and a good keeper. The tree is vigorous, and an enormous cropper. Award of Merit from the Royal Horticultural Society.

Dwarf Maidens, 5/-; Standards, 7/6; Pyramids, 7/6.

BEAUTY OF STOKE.—A large, conical, and evenly-shaped fruit, of a uniform brown russet colour, and of excellent quality. The tree is a good bearer, both as a pyramid and a standard. First-class Certificate from the Royal Horticultural Society.

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MCINDOE'S RUSSET.—The fruit is large, and rather flattened with prominent ribs; of a brown russet colour, and of excellent flavour. The tree is of moderate growth, and an excellent bearer. This originated from the same source as the celebrated *Bismark* Apple.

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WEALTHY.—A handsome, beautifully-coloured Apple of American origin. It is of good size, excellent for exhibition, suitable for the table, but, strictly speaking, a culinary Apple. The tree is of moderate growth, and an excellent bearer. Award of Merit from the Royal Horticultural Society.

Pyramids 2/5 to 5/-.

PEARS.

BEURRÉ DE MORTILLET.—A large and handsome fruit of obovate shape, 5 to 6 inches long; the flesh is white and pleasantly flavoured. It requires double grafting; it then forms a prolific bush or cordon.

Bushes, 3/6 and 5/-; Cordons, 2/6.

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THOUSANDS OF BUDS FOR FORCING.

AZALEA, finest Ghent, MOLLIS and PONTICUM.
ANDROMEDA FLORIBUNDA and JAPONICA.
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RHODODENDRONS, Common and Finest, named.

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Our Houses; they are a lovely sight, as brilliant as in May. Plants well set with Bud, in 5-inch pots, 12s., 15s., and 18s. per dozen. These are such as will flower all the winter. Our DOUBLE NEW LIFE, and RASPAIL IMPROVED are the surprise of all. Flowers of these sent post-free for 5d. stamps. CATALOGUES free.

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Trains every twenty minutes from Charing Cross, Cannon Street, and London Bridge to Lewisham, South-Eastern Railway.

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THE NURSERIES,
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FOLIAGE PLANTS
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LARGE PALMS.
PUTNEY, S.W.

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ABIES DOUGLASHII GLAUCOA, 5, 6, 7, and 8 feet.

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.. PUNGENS GLAUCOA (Colorado Blue Spruce),

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CEDRUS ATLANTICA GLAUCOA, 4, 5, 6, and 7 feet.

CEDARS OF LEBANON, 5, 6, 7, 8 to 10 feet.

GOLDEN CHINESE JUNIPER, 4, 5, 6, 8, and 10 feet.

GOLDEN YEW, Seedlings, 4, 5, 6, and 7 feet.

PICEA CONCOLOR VIOLACEA, 4, 5, 6, 7, and 8 feet.

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THUIOPSIS BOREALIS, 5 to 8 feet.

HOLLIES, GREEN, Common, up to 10 and 12 feet.

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.. SILVER QUEEN.

.. WATERER'S, and many other variegated kinds, 6 to 10 feet.

.. PERRY'S WEeping, with straight stems and fine heads.

.. GOLDEN WEeping, with fine heads.

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EXHIBITIONS.

Alteration of Date.

MANCHESTER CHRYSANTHEMUM SHOW.
The above Exhibition will be held on NOVEMBER 14 and 15, instead of November 21 and 22, as originally announced.

KENT COUNTY CHRYSANTHEMUM SOCIETY.

THE SIXTH GRAND EXHIBITION OF CHRYSANTHEMUMS and other FLOWERS and FRUIT, will be held at the RINK HALL, BLACKHEATH, on November 1 and 2, 1893. Over One Hundred Pounds in Prizes.—All particulars to JOHN CARVILL, F.R.H.S., Hon. Sec., 83, St. John's Road, Lewisham High Road, S.E.

ASCOT, SUNNINGHILL, SUNNINGDALE and DISTRICT HORTICULTURAL SOCIETY.
CHRYSANTHEMUM SHOW, November 1 and 2. Open class for Forty-eight Blooms, Prizes £8, £5, £3, £1; and for Four Trained Plants, Prizes £4, £3, £2. For particulars and Schedules, apply to— F. PATTON, Ascot.

CRYSTAL PALACE.

ANNUAL CHRYSANTHEMUM SHOW, FRIDAY and SATURDAY, November 3 and 4.
For Entry Forms and Schedules, apply to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close Friday, October 27.

DEVIZES CHRYSANTHEMUM SHOW.
TUESDAY, November 7.
For 24 Incurred Blooms—1st Prize, 20s.; 2nd, 10s.; 3rd, 6os. For 12 Japanese Blooms—1st Prize, a Silver Cup, value £5 5s.; 2nd, 40s.; 3rd, 25s. And various other classes.
For Schedules, apply to—
The Castle Gardens, Devizes, Wilts. THOS. KING.

BRIGHTON AND SUSSEX (NEW) HORTICULTURAL SOCIETY.
ELEVENTH ANNUAL CHRYSANTHEMUM SHOW, TUESDAY and WEDNESDAY, November 7 and 8. Schedules of the Secretary, MARK LONGHURST, 18, Church Road, Hove. Entries close November 2.

KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.
President—G. C. SHERRARD, Esq., J.P.
The SEVENTEENTH ANNUAL GRAND SHOW OF CHRYSANTHEMUMS, FRUIT, VEGETABLES, &c., will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 7 and 8, 1893, when the Final Contest between the three Successful Competitors for the Sixth Champion Challenge Vase, will take place; and the Seventh Champion Challenge Vase, value 25 Guineas, will be offered, open to all subscribers of 21s. Also a Silver Cup, value 5 Guineas, "Given by Major Collis Browne," in addition to Money Prize, for 24 Incurred Blooms, distinct. Over £160 offered in Prizes.
Schedules, and all information, may be obtained from the Hon. Sec., Mr. GEO. WOODGATE, Warren House Gardens, Kingston-on-Thames. Entries close November 3.

WATFORD CHRYSANTHEMUM SOCIETY.
The EIGHTH ANNUAL EXHIBITION OF CHRYSANTHEMUMS, and other AUTUMN FLOWERS and FRUIT, will be held in the AGRICULTURAL HALL, WATFORD, on TUESDAY and WEDNESDAY, November 7 and 8, when Prizes to the value of £140 will be competed for. Entries close on Thursday, November 2.
Watford, Kent. CHAS. R. HUMBERT, Hon. Sec.

NATIONAL CHRYSANTHEMUM SOCIETY.
GREAT CHRYSANTHEMUM FESTIVAL and PETE, ROYAL AQUARIUM, WESTMINSTER, TUESDAY, WEDNESDAY, and THURSDAY, November 7, 8, and 9, 1893.
On this occasion the National Challenge Trophy, the Holmes' Memorial and other Cups, Medals, and valuable Money Prizes, will be competed for.
Also Prizes for Table Decorations, Fruit, and Vegetables.
Schedules of Prizes, and all information can be obtained from RICHARD DEAN, Hon. Sec. and Superintendent, Ranelagh Road, Baling, W.

LEEDS PAXTON SOCIETY'S CHRYSANTHEMUM SHOW, NOVEMBER 7 and 8, 1893.
ENTRIES CLOSE, OCTOBER 30.
For Schedules and Forms, apply to W. HOLBROOK, Hon. Secretary, St. Ann's Villas, Headingley, Leeds.

BOURNEMOUTH and DISTRICT CHRYSANTHEMUM & HORTICULTURAL SOCIETY.
SEVENTH ANNUAL EXHIBITION, November 8 and 9. Schedules and full particulars to JAMES SPONG, The Gardens, Lindisfarne, Bournemouth. Secretary.

THE BATH CHRYSANTHEMUM SHOW,
NOVEMBER 8 and 9, 1893. Entries close November 3. For Prize Schedules, &c., apply— B. R. F. PEARSON } Secs.
2, Northumberland Bldgs., Bath. W. JEFFERY }

THE WEST OF ENGLAND CHRYSANTHEMUM SOCIETY.
The ANNUAL EXHIBITION will be held in THE GUILDHALL, PLYMOUTH, on November 14 and 15. Over £150 in Prizes.
£23 for 24 Japanese, 24 Incurred, and other Valuable Prizes.
For Schedules, apply—
Messrs. WILSON and DAMERELL, Hon. Secs.
4, North Hill, Plymouth.

SCOTTISH HORTICULTURAL ASSOCIATION.
GRAND CHRYSANTHEMUM SHOW, to be held in WAVERLEY MARKET, November 16, 17, and 18. NEARLY FIVE HUNDRED POUNDS IN PRIZES.
Schedules and all information from the Secretary—
17, South Frederick St., Edinburgh. ROBERT LAIRD.

TWICKENHAM HORTICULTURAL SOCIETY.

THE ANNUAL CHRYSANTHEMUM and AUTUMN SHOW OF FRUIT and FLOWERS will be held at the TOWN HALL, TWICKENHAM, on TUESDAY and WEDNESDAY, November 14 and 15. Entries close Friday, November 10. For further particulars, apply to—
Mr. JAMES J. G. PUGH, Hon. Sec.
2, Heath Road, Twickenham.

Birmingham Great CHRYSANTHEMUM EXHIBITION
TOWN HALL BIRMINGHAM.

On TUESDAY, WEDNESDAY, and THURSDAY, November 15 and 16.
£262 offered in PRIZES as follows:—
For Chrysanthemums £150 0 0
" Primulas 25 0 0
" Miscellaneous other Plants 25 0 0
" Fruit 40 0 0
" Vegetables 22 0 0
ENTRIES CLOSE on November 8.

Schedules post-free on application to the Secretary,
J. HUGHES, 140, High Street, Harborne, Birmingham.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

GRAND ANNUAL SHOW, CORN EXCHANGE, SHEFFIELD, FRIDAY and SATURDAY, November 17 and 18, 1893.
£200 IN PRIZES.
Schedules free on application to the Secretary—
177, Cemetery Road, Sheffield. WM. HOUSLEY.

BORDER CARNATION (Ketton Rose), the
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KENTIAS (Cheap).—Kentia Belmoreana and K. Fosteriana, splendid stuff, from stores. 12 inches high, 3s. 6d. per doz.; 24s. per 100; 6 to 9 inches, 21s. per 100. Package free for cash with order.
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FOR SALE, Cheap, 30 nearly new Iron
TREE GUARDS, suitable for parks.—Apply,
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Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our speciality—really good stuff grown for the Trade.

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Third Edition just out.
Price 5s., post free, 5s. 6d.
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FRUIT TREES, ROSES IN POTS, VINES, OF ALL THE FINEST VARIETIES, NEW AND OLD.

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IRISH IVIES in pots, 3 feet to 12 feet.
SHRUBS, TREES, ROSES, FRUIT TREES, CLIMBERS, &c., in endless variety. Specially low prices for quantities.
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STRONG, well-rooted
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SENSATION, new 1892, 8s. doz. (largest main crop).
ROYAL SOVEREIGN, grand new 1893, three Certificates, an earlier and improved Paxton, flavour very rich, £5 per 100.
Full LIST from—
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NEW TOMATO, "EMPRESS OF INDIA."
For Market Purposes, Exhibition, or Private Use, this variety will prove one of the very best, the fruit being a beautiful bright scarlet colour, massive, and without ribs, very solid and heavy, well flavoured, and with very few seeds. A prolific bearer. Very short-jointed plants, 6 to 7 feet long (single stem), carrying from nine to ten bunches of fruit, averaging 3 to 4 lb. each bunch.
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First-Prize awarded at the Chicago World's Fair, 1893.
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Lily of the Valley Nursery, Pinneberg, near Hamburg, Germany.

ALL GOODS DELIVERED FREE
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LILIAM HARRISII, 5—7 in. circ., per 1000 bulbs. 6 5 0
" 7—9 in. " " " 11 10 0
" 9—11 in. " " " 22 10 0
" AURATUM, 7—9 in. " " " 8 7 6
" 9—11 in. " " " 11 10 0
TUBEROSES, Pearl, select 4—6½ in. " " 1 10 0
" seconds, 3—4 in. " " 1 2 6
Prices for GLADIOLUS, &c., on application.
F. W. O. SCHMITZ and CO., Jersey City, N.J., U.S.A.

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PRIVET, Oval-Leaf, from 2 to 4 feet, fine; ASH, Common, and MOUNTAIN BEECH; HAZEL, HORSE CHESTNUTS, ELM, LARCH, AUSTRIAN PINE, POPLARS (various), EVERGREEN PRIVET, THORN QUICK, SCOTCH FIR, SPRUCE, SYCAMORE, and WILLOWS, all good, well-grown Trees, from 1½ to 4 feet, and upwards.
ROSES, ACUBAS, BERBERIS AQUIFOLIA, BOX, CUPRESSUS, DOGWOOD, GOLDEN ELDERS, HOLIES, IVIES, LAURELS, RETINOPORAS, English and Irish YEWs, AZALEAS (various), and many other varieties.
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 LAURELS CAUCASICA, 2½ to 3, and 3 to 4 feet.
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 " LATIFOLIA, 2½ to 3, and 3 to 4 feet.
 " PORTUGAL, 1½ to 2, 2 to 3, and 3 to 4 feet.
 AUCUBA JAPONICA, 1½ to 2, and 2 to 3 feet.
 CUPRESSUS LAWSONIANA, 3 to 4, and 4 to 5 feet.
 RETINOSPORA PLUMOSA, 3 to 4, and 4 to 5 feet.
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 LAURUSTINUS, 1½ to 2, and 2 to 3 feet.

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 Nurseries, BILLING ROAD.

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FRUIT. Nothing so Profitable
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ROSES. Hundreds of
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Bushes in variety. Packing and Carriage Free for Cash
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Roses in Pots from 15s. per doz.
 Ornamental Trees, 91 Acres.
 4 Acres of Glass.

CLEMATIS (80,000), from 15s. per dozen.
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FRUIT TREES

That will bear regularly, purchase Apples worked upon our
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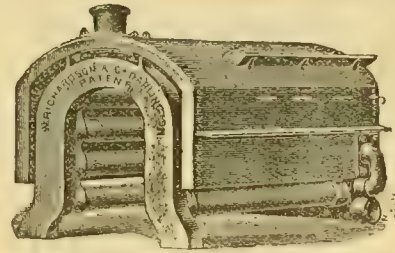
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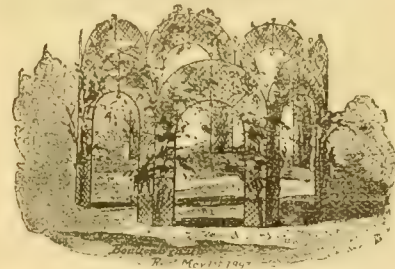
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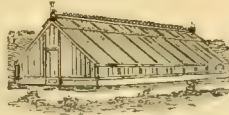
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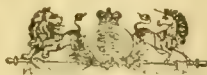
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 21, 1893.

THE PAST ROSE SEASON.

AT last we may write of the Rose season of 1893 as being past; we may, of course, if the weather be fine, gather a few blooms still, yet this notwithstanding, the glory and beauty of the season are over; and what a season it has been! Never since the memorable year of 1879 have the expectations of Rose growers been so hopelessly disappointed. During that year the daily downpour, the grey, dull days on which the sun never shed forth its light, created a state of things which will not be easily forgotten; good Roses were a scarcity, and many stands of flowers were so much below the standard, that the judges hesitated about giving them any award. This year there was much the same state of things, so far as the Roses south of the Trent were concerned, and the northern growers swept all before them. In February things looked well; the plants had gone through the winter fairly well; the continued rains of February had encouraged growth; and as the time for pruning came on, the shoots were evidently in good condition. But alas! after the wettest February we have known for years, there came that uninterrupted drought, which will for many reasons make the year 1893 a notable one; for, from the beginning of the month of March to the beginning of July, no rain of any moment fell, while a blazing sun rushed flowers into bloom long before their proper time—consequently, the blooms were small and deficient in substance, and it was only under the cooler skies of the North that Rose blooms of really good quality, size, and substance could be obtained; and this held good during the whole of the Rose season, for at the Royal Horticultural Society's show in the Agricultural Hall, Islington, on August 29, fine stands of Roses in good character came from Messrs. Cocker & Sons of Aberdeen; it is true that the 1st prize on that occasion was gained by a southern firm, that of Messrs. Paul & Son, but there was a substance and depth of colouring in some of the Scotch flowers which was very remarkable.

It is always a most difficult thing to accurately survey the Rose season, for in nothing else is the saying more true that circumstances alter cases. Temperature and climate vary so much in our islands, that what is true in one case is utterly incorrect in another. It is curious, for instance, to meet at the close of a season with a number of Rose-growers, and to hear their varying remarks. One man will say, "I never knew such a season as this;" while his neighbour will probably rejoin, "I have not seen one good Rose in my

garden, but then I have been greatly troubled with orange fungus; to which another adds, "I have not had any." The complaint of another grower is, "The season has been so dry that my Roses have made no wood;" while another adds, "I never had finer autumn growth, shoots 5 and 6 feet long." But this year has certainly made a sharp dividing line; the story of failure that has come from the South of England has found no echo in the North. From the beginning to the close of the season, the northern growers carried the day; and, as a matter of course, the challenge trophies have gone in that direction; and although Mr. Lindsell managed to secure the Amateur's Trophy at the Crystal Palace, Messrs. Harkness & Son carried off both the Challenge and Jubilee Trophy; and the Amateur's Jubilee Cup went to their neighbour, Mr. A. Whifton, an amateur who has not been conspicuous for success before.

I believe that all those who have visited the Rose shows throughout the country agree in the verdict that Roses were everywhere of a moderate character; of course, there were exceptions, but these only proved the rule. Some facts were, however, noteworthy—one was that dark Roses, to the surprise of most persons, came out very well. The hot, scorching sun which we experienced for many weeks would, it was thought, have "burned them up," but it was not so, such Roses as Horace Vernet and Prince Arthur being remarkably fine; indeed, it was said by some that no such blooms of Guillot's H.P. had ever been shown before. I recollect, however, a stand of it (Horace Vernet), shown some years ago at Farningham by the Rev. J. H. Pemberton, in which the blooms were, I think, quite equal to any of those exhibited this year. Bennett's Rose, Her Majesty, has again proved itself an uncertain doer, for grand as it was last year, it was not exhibited in anything like the same form this year. Mrs. John Laing, on the other hand, has proved itself to be a most constant and reliable flower; I do not think that the blooms exhibited this year have, however, been equal to some that I have previously seen.

It has been for the Tea Roses a most glorious season, but it is amongst the older varieties that we must still look for the gems of this class; indeed, there are not many new candidates for public favour amongst them, and it is difficult to conceive whence Roses are to be obtained that will excel some of those which we already possess. Marie Van Houtte has been exquisite this year, its soft creamy-yellow ground and pink edging to the petals having been brought out in great beauty; and, as I have already noted, a bloom of Madame Cusin exhibited by the Rev. A. Foster Melliar was of itself worthy of a journey to the Drill Hall to see. I question if Countess de Nadaillac had as much richness of colour as in some former years, but then Mr. Geo. Prince, who has always exhibited in such grand beauty, did not compete. Madame Hoste, which some have decried, asserted its place as one of the best of recent Tea Roses. I cannot alter my opinion about Ernest Metz; it is no doubt a very beautiful Rose, but seems especially to rejoice in the air of Colchester—and the rarity with which it was shown, and the absence of exhibitors in the class specially devoted to it, seems to me to imply that it is an uncertain variety. Jean Ducher, again, as might have been expected in so hot a season, was frequently and well shown, the weather being very favourable to the opening of so close and full a flower. Of Sappho and Waban not a great deal has been seen, but the blooms of the former seem to indicate a promising Rose.

It may seem a strange assertion to make, that in a year where three Gold Medals for new Roses have been awarded, there was a great dearth of novelties, nevertheless this was the case—for two of the medals were awarded to Irish Roses and the third to the fine climbing Rose Crimson Rambler, exhibited by Mr. Charles Turner; and in looking through the long list of H.P.'s and Teas sent to us from abroad last autumn, I do not see one which has made, or seems likely to make, any favourable impression upon us, and it is to our home-raised Roses that we are now especially looking. Messrs. Paul & Sons' Charles Gater is bright in colour, good in form and substance, but I fear it is rather small for the present taste. The two Irish Roses which obtained the Gold Medals, were Marchioness of Londonderry and Mrs. Sharman Crawford—the former white with a slight blush tinge in it, the latter delicate soft pink, somewhat of the shade of Madame Gabrielle Luizet, though differing from it in form and substance; and if these Roses are not Home-Rulers, and do not refuse to grow as well on English as on Irish soil, they will be found valuable additions to our exhibition varieties. From the long list of French varieties sent out last autumn, I do not think it is probable that there will be a single variety in either the Hybrid Perpetuals or the Teas which will hold a permanent place in our list; while of those of 1891 it is a question whether the same record will not have to be given. A very close and accurate observer, Mr. Pemberton, only mentions one Hybrid Perpetual, Madame Delille (Schwartz), which he considers worthy of a place. Whilst there are two Hybrid Teas which seem likely to be of service, the one as a button-hole flower, the other as an exhibition variety; the former of these, Gustave Regis, is of a beautiful canary-yellow colour, and has a long pointed bud, that will no doubt make it a favourite for button-holes, &c., although it is very questionable whether it will supersede that universal favourite, William Allen Richardson; the other, Caroline Testout (Rernet & Ducher), is spoken highly of, not only by Mr. Pemberton, but by that veteran and very fastidious judge, Mr. B. R. Cant. It is described as a light salmon-pink, large and globular, very continuous in blooming, as is the way with most of these hybrid Teas; but Mr. Pemberton gives the warning note that it has a defect which spoils many Roses, namely, that of coming quartered. I had intended to have said something as to some of the more remarkable records of prize-winners, and also of the autumn Roses, as well as of garden varieties, but I have outrun the limits of my space, and must reserve these for a future article. *Wild Rose.*

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM × TENNYSON (*Enanthum Superbum* ♀, *Dayanum* ♂).

THE foliage of this new cross-bred is light green, with a fine dark green veining as in the foliage of C. × Ashburtoniae. The flowers are as large as those of C. × Harrisianum, a light form of which they resemble in general appearance. The upper sepal is white, with a greenish tinge at the base, and some purple lines extending two-thirds of the way to the apex. The lower sepals are greenish-white, with a pure white margin. The petals are ciliate, of a pale rose colour at the outer, and a darker rose on the inner halves; the face of the labellum being of the same hue as the petals, and like them exhibiting a polished surface. The staminate node is clear yellow. The flower in elegance of form bears distinct traces of C. Dayanum. The

stock of the plant is in the possession of Mr. P. McArthur, The London Nurseries, Maida Vale, W. *James O'Brien.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PHALÆNOPSIS SCHRODERIANUM.

THE consensus of opinion seems to point to the fact that this beautiful species is one of the best and most free-growing of Orchids; but while most growers have more or less success with it, some of them succeed in making it put on growths far superior to those on imported plants, and to bear, probably, better flowers than they do in their native land. One of the most successful cultivators of this species is Mr. G. Bethel, the manager of Mr. Whiteley's Nurseries at Hillingdon Heath, Uxbridge, at which place a grand show of this species of Dendrobium may be seen at the present time. The flowers make a fine show, but to an Orchid-grower the stout pseudobulbs, clad with spotless fleshy green leaves, supply an equally gratifying sight. Many Orchids useful to the florist are grown at Mr. Whiteley's Nursery, and all of them are in fine health.

CYPRIPEDIUM INSIGNE SANDERÆ.

Another clear yellow and white form of C. insigne, very near to the original C. i. Sanderæ, has flowered out of an importation which Messrs. F. Sander & Co. have sold as Cypridium insigne montanum. This latter species has produced many fine novelties, ranging from the beautiful C. i. Sanderæ (and this second form of the same section, which are as nearly albinos as the species has yet produced), and others which have almost black markings, with purple spots on the white upper third of the dorsal sepal. As an imported plant it was bought with others at Messrs. Protheroe & Morris' rooms for a few shillings, and its lucky possessor got 26 guineas for it at the same establishment on Friday, October 13, as a plant in flower, in an unreserved sale.

MILTONIA SPECTABILIS MORELIANA VAR. ATRO RUBENS.

Probably the best variety of this remarkably showy Orchid is now to be seen in flower in the collection of W. Cobb, Esq., Dulcote, Tunbridge Wells. It was received as an imported plant two or three years ago, and it is therefore distinct from the original stock, to which it is far superior. Its large flowers have shining wax-like sepals and petals of the darkest maroon-purple shade, except a small area around the column, which is of a bright rose colour. The large flat labellum is 2½ inches wide, of light rosy-purple colour, darker at the base, and with several dark purplish-crimson lines extending from the base to the margin. The column and cup are pure white, and the wings purple. It is a beautiful, distinct, and striking Orchid. *J. O'B.*

CATTLEYA LABIATA.

I see that attention is now drawn to the flowering of the two great importations of Cattleya labiata autumnalis, viz., "Warocqueana," by L'Horticulture Internationale, and that by F. Sander & Co. I have several of both flowering freely, and amongst mine the light varieties are in great preponderance. The dark ones are few, and very handsome; and I have one of Sander's of very great beauty, extremely deep and rich in colour, with the lip extremely convolute, and beautifully fringed. *H. J. Ross, Poggio Gherardo, Firenze.*

WEXHAM PARK.

THE Slough district is rich in beautiful gardens. It is a favoured radius that stretches 6 or 7 miles around this quiet English town, and the gardener, or whoever he may be, that wishes to see many good places, could not find a happier hunting-ground. The scenery is full of quiet beauty, and splendid views are got from the more hilly spots. In the neighbourhood, so to speak, of Wexham Park

may be named the Royal Gardens at Windsor, Dropmore, Cliveden, Langley Park, Stoke Park, Stoke Farm, Ditton Park, and many others. Not the least of this famous throng is Wexham Park, near to the quaint church of Stoke Pogis, where the poet Gray is buried.

The surroundings are thoroughly English, and it is difficult to realise that the great metropolis is but a few miles distant.

Wexham Park is the residence of Sir Charles Pigott, Bart., and a good English home. It commands beautiful views of Berkshire, the eye stretching to Windsor Castle and Windsor Forest. To horticulturists it is famed for its gardens. They are not so

pitch of perfection. Everywhere Mr. Ford seems victorious with his plants, and deserves success. His Cinerarias were in particular remarkably fine, but then this is quite a Cineraria country, as Farnham Royal, the nursery of Messrs. J. James & Son, so successfully managed by the late Mr. James' son, is only a mile or two away. A distinctive trait is conspicuous in the plants. They are of very dwarf habit, quite compact, neat, and the masses of flowers are produced in a dense head close down upon the leafage. The colours are superb; one cannot help comparing some strains with those one sees here and at Farnham Royal, the colours not spoilt by bizarre association of various shades, but distinct, rich, and as

stove and other plants grown here, nor the fruit department, which is naturally a feature of interest, but in this respect one garden is much like another.

TUBEROUS BEGONIAS.

At the Chiswick show in July last, Mr. Ford exhibited several tuberous Begonias, which were amongst the finest we have seen this season, and caused general remark at the time. Those interested in Begonias will find Wexham Park a veritable storehouse of the brilliant flower, both inside and out of doors a kind of Halton, although not on such an immense scale. During the summer months the beds are bright with many things, but chief amongst



FIG. 84—VIEW OF WEXHAM PARK, ST. OKE POGIS.

remarkable for size, as for perfect order, and that in the various arrangements artistic effect is not sacrificed to mere petty details. It is a garden that in the fulness of summer is beautiful, not to say picturesque, which is owing partly to its bold situation and the free planting of certain things. We visited this spot when the Cinerarias, Calceolarias, and other florists' flowers of the season were in beauty. There are many good glass-houses in the garden—in fact, it is especially noted in this respect, and the utmost use is made by Mr. Ford, the head gardener, of the means at his disposal. Visitors to exhibitions in the spring months know that fine plants are grown here, and of true exhibition character. The specimens were a picture of superb health and splendid colouring, the outcome of a "strain" raised to the

pleasing to the artist as to the gardener. The same high character that stamps the Cineraria is seen also in the herbaceous Calceolaria, Chinese Primula, Persian Cyclamen, and every florists' flower that is cultivated. In these days it is rare to visit a garden where such plants as those mentioned are grown with conspicuous success, and the greenhouse, too, is deprived of their assistance in forming gay blocks of colour to attract the visitor. We think it is a pity that the stove and greenhouse plants one used to see in days gone by are now comparatively rare in gardens. The gardens, now-a-days, in which they are well cultivated, may be quickly counted, and certainly amongst them Wexham Park may be named.

It is unnecessary to enter at length into the many

them is the fine strain of this flower which has been raised to perfection here. Many of the seedlings are superb for the size, finish, and colour of the blooms. On one occasion last year, if we remember correctly, at the show of the Maidenhead Horticultural Society, no fewer than seven were awarded First-class Certificates. It would be well if we saw more of them at London shows, those of the Royal Horticultural Society in particular, that one might know of the rich treasures found in this garden. This year, although the weather has been much against tuberous Begonias, they have succeeded well, but last year were even better, maintaining their high character from early summer until frosts stopped their career. One may judge of the effect produced when the plants fill two houses, one a span-roofed

structure about 50 feet long, and the other a three-quarter span, 36 feet in length. Robust health is observed in every specimen, and the flowers are invariably of great width, although not coarse. As I am writing of a garden of florists' flowers, I may mention that size is not everything in flowers, and hope Mr. Ford in his efforts to still further enrich the tuberous Begonia, will not sacrifice beauty for mere size. A medium-sized bloom of clear, distinct, and pretty colour, is far preferable to an enormous one which may call forth surprise for its dimensions, but is not beautiful.

The plants are cultivated in comparatively small pots, very few in those larger than 8-inch, the majority in 48's or 32's. But they are true specimens, 2 to 3 feet across, and profusely flowered. The seed is saved from plants selected by Mr. Ford; and a rigid rejection of all forms not attaining a certain standard of excellence, has resulted in the fine strain one sees in these houses. Seed sowing is done in the early spring, and the seed only lightly covered with the compost, which is made up of loam, leaf-mould, and coarse silver sand in equal parts. When the young seedlings are of sufficient size to handle they are pricked out in other pans, and a warm, moist temperature afforded. It is of the utmost importance to place them near the glass, otherwise the growth gets drawn, and the naturally bushy habit of the plant spoilt. A great change has come over the tuberous Begonias in growth. A few years ago it was tall and spreading, but now is exactly the reverse. As spring departs, the plants are gradually hardened-off, until in a condition to be transferred to frames, where they are kept close to the glass, and carefully tended. When all danger from frost is over, the plants are put out in a rich, thoroughly well-prepared bed in the kitchen garden, and here they flower. It is pleasing to see large numbers of seedlings showing a great range of lovely colours, some identical with those we already have, others displaying a new departure to be at once seized upon, as the possible progenitors of another section. Those selected are carefully noted and grown on for another year.

Every department is well managed, and the gardener in the neighbourhood of Wexham Park will learn much by a visit paid either in the late spring when the florists' flowers are in perfection, or in the summer. He could spend a few days in the neighbourhood, not forgetting to visit Dropmore, which in the spring is a revelation of glorious colours from the breaks of Rhododendrons and hardy Azaleas, that light up the scenery with brilliant colours, and spread around a spicy fragrance. Not far distant from Wexham Park is Burnham Beeches, and during the summer months an omnibus meets the London trains and conveys visitors to this lovely spot in hilly Buckinghamshire. *Visitor.*

HARD-WOODED GREENHOUSE PLANTS.

For years past it has been customary to the trade to offer the quick-growing *Ericas*, and several other Cape and New Holland plants, in large numbers during the autumn season. These plants usually change hands in the first instance towards the end of September, when they are purchased largely by nurserymen, being again distributed in due course to private growers in smaller quantities. Those who purchase in the first instance in large numbers are more often alive to the peculiar treatment these plants require, as they are oftentimes departmental men; but when the plants are afterwards "sent out," their culture is not so fully understood as it should be by private gardeners—consequently, the promising appearance the plants may have, does not endure long enough to obtain the best results from them.

As a case in point, we would quote the *Ericas* in the first instance. *E. hyemalis*, it is known, is grown in as large quantities as any winter-flowering Heath, but the very promising look these plants assume during September and October does not last in many cases. For this there must be an expla-

nation. In the first place, this variety is a vigorous grower under liberal treatment, and as the pots are never of excessive size, it follows that, in the case of healthy plants, they are tightly filled with a mass of roots. This causes the soil and plants to dry up quickly, far more so than some would imagine. To allow them to suffer, or even approach that state, is decidedly injurious to the flowers in whatever stage they may be. When the plants have thus suffered, the result will be seen in numbers of yellow buds in various stages of development, which eventually die. Others, which may have reached more nearly to perfect flowers, become crippled, and consequently look badly when expanded. This is occasioned by want of water more than anything else, as has been proved over and over again. There is also another important fact to be borne in mind, which is not generally known; some of the large growers are in the habit of feeding their plants artificially with weak solutions of sulphate of ammonia, or other exciting chemical compounds. In looking through a large stock a few days back, the difference in the appearance of the plants of *E. hyemalis* was most noticeable; these, be it observed, had been grown by various cultivators. Some were of a deep green colour and extremely vigorous, as well as of sturdy growth, betokening good management. Others had less of this appearance, but still showed signs of liberal feeding. The appearance of both of these batches could be clearly traced to something more than clear water, and nothing is better suited to develop a deep green colour than sulphate of ammonia. Another lot of plants in the same place as the foregoing were of a paler colour, but betokened a hardihood which would stand them in good stead. If I were purchasing a stock of this *Erica* I would at once take them from the last-named batch, although they were not so large or of such a dense growth, as they would be much more likely to succeed for several seasons than the others.

When such plants change hands, there is constant need of close attention to the watering; the plants should at any rate be looked over twice a day, and when watering is done, let it be thorough. I would not advise the continued application of the chemical alluded to, but substitute in its place a weak solution of soot-water for a time.

Erica gracilis autumnalis is now flowering most profusely, I never saw it better than the other day in the same establishment as the foregoing. The plants were of extra size, but in remarkably small pots, and the blossoms very highly coloured, the result beyond doubt of the sunny autumn weather. I also observed that *E. Wilmoreana* was further advanced than is usual at this season. This variety wants just about the same kind of treatment as *E. hyemalis*, both being of dense growth, with the possibility of an attack of mildew coming on if wintered in a damp house or crowded. This crowding is a decided evil, and one that should be carefully avoided. It is much better to elevate the plants on pots, with dwarfier ones around them, than to mass them together. *E. mammosa pallida* and *E. verticillata* are two beautiful autumn Heaths, so also is *E. cerinthoides*, but none of these will take so much water as the two former kinds, they being of a more wiry growth with less foliage to support on the whole. With other *Ericas* the same close attention is needed, as in the case of *E. Cavendishiana*, which as a market plant is more largely grown than ever it was. In no case should potting be thought of after the plants are received. This work must be deferred until the flowering season is past, and growth again commencing. One point, however, is worth noting in the case of *Ericas*, which do not flower on the extremities of the shoots, such for example as *E. hyemalis*, which should be clothed with flower nearly up the entire length of the shoots, except where the growth is too sappy. In these cases, pinch out the points of the leading shoots, when their growth is seen to be progressing too fast. Any of these *Ericas* that have been alluded to should now be housed, or at any rate have glass placed over them at night, in case of frost. So long, however, as the temperature does not fall below 35° no harm

will be done. When housed, the ventilation should be free, otherwise the plants will feel the change from the open air, to which they have been for months subjected. *H.*

(To be continued.)

PLANT NOTES.

AMPELOPSIS VEITCHI VAR. PURPUREA.

As this comparatively new climbing plant becomes better known, it will be as much planted as *A. Veitchi*, which it resembles in every particular except the colour of the foliage, which is distinctly purple, as the name implies. Planted against the south and west walls of Longford Castle, the effect produced at the present time is very striking. *W.*

LUNARIA BIENNIS.

This erect-growing leafy biennial plant, commonly known under the name of Honesty, attains to a height of 2 to 3 feet, according to soil and climate, and is furnished with terminal racemes of purplish flowers, resulting in the production of oblong seed pods, which, when the husks or valves have fallen off in autumn disclose silvery transparent partitions, which remain firmly attached to the stalk. These flower-stalks are useful for house decoration in the winter and spring months. The plant is easily raised from seed sown in any kind of light soil out-of-doors early in April. The plants may be thinned out and allowed to stand at 6 inches apart, or be pricked out in reserve beds, finally planting them out in September or October. *W. H.*

DIMORPHANTHUS MANDSHURICUS.

The above is a handsome subtropical plant for beds and shrubberies. Its large bipinnate leaves make it distinct from most other shrubs, and it forms a very pleasing contrast to them. When it has attained 8 to 10 feet, its natural height, its stems have a somewhat bare appearance, and on this account the plants should be dotted amongst lower-growing subjects, or planted at the back of the borders. At Wentworth Woodhouse it is planted in various positions, and unfortunately these not always the most suitable; for instance, in the front of taller shrubs, where in winter they have an unclothed appearance. It is very hardy in Yorkshire, having withstood the rigour of many winters, and has flowered profusely and matured its seeds this year. *T. H.*

THE HARDY FRUIT CROP.

ONE of the most remarkable circumstances of the driest summer on record, has been that the hardy fruit crop, and I refer specially to Apples and Pears, has been not only a remarkably abundant one, but also has promoted size and finish to fruit, beyond almost all precedent. The season has demonstrated the immense value of heat as a fruit-growing and developing force, and indeed, shows that it is of more importance than root-moisture. I do not, in saying so much, judge by what may have been seen on specially cared-for and perhaps watered garden trees. I refer to the produce of trees generally, such as I have seen in various parts of the kingdom, and grown in diverse ways. Apples and Pears have, for size, finish, and colour, proved distinctly a record year; that cracks, canker, and other ills have been singularly absent, and it does but serve to show that whilst the bulk of the ills that come to our hardy fruit trees and their produce comes from cold, heat on the other hand is capable of developing all the best properties in trees and in fruit. The recent hardy fruit show at Earl's Court was specially noteworthy, because it showed Apples and Pears even considerably in advance of what was seen a few years since in the Guildhall, and in the finest and most perfect form ever presented anywhere, and at any time. I merely refer to this fact in support of my proposition, that sun-heat [together with sun-light] is the great factor in fruit production, but on the same ground the assertion on general results. But

a remarkable fact still further is this, that whilst fruits have come of such great size in a year of comparative drought, yet, in many cases, the loss of weight seems to be excessive. This has been specially noted in the case of very fine Apples and Pears, which have wasted to the extent of several ounces after being gathered a couple or three weeks. Naturally it may have been expected that fruit grown under such influences would have been of a more solid description than where the trees were

although that proposition may be contested, yet it is an undoubted fact, that all our finest-flavoured Apples show little colour, and when colour is specially prominent on them, then is flavour somewhat deficient. Even the big Onions of the day, the giants of the Allium tribe, grown after such considerable pains have been taken to render them huge adipose bulbs, attain to that size at the expense of flavour and solidity of flesh, for they, too, lose weight rapidly after being stored. There is

a tree of same size and variety which produces 200 fruits that are of more than double the average dimensions. The plea that the finer sample sells best, and more readily fills the bushel, deserves all consideration, but it is not possible to put out of sight the important fact that after all, these things are grown for food, and if they are not, they are hardly worth troubling about. We must not hastily assume that the remarkable fruit development found this warm season indicates absolute advance in hardy fruit production over that of the Guildhall show year. We may have several seasons to follow of an average character, and these will bring down fruit to average dimensions. It is true that we have added some varieties to our Apples and Pears since that year, but not many, and comparatively few of these are of a specially firm or long-keeping character. It is very doubtful, after all, as to how far such exhibitions as those referred to help in the cultivation of the firmer and best-flavoured and best-keeping varieties. We have far more than is needed of autumn and early-winter Apples, soft of flesh, if big in size, and handsome to look upon; and these gain the attention that the less conspicuous sorts most clearly merit. A. D.

ZYGOPETALUM (WARSCWICZELLA) LINDENI.

This rare species, certainly the most beautiful of its class, and a worthy companion to the pretty *Zygopetalum Lindenii*, illustrated in the *Gardeners' Chronicle*, February 6, 1892, always finds admirers whenever it is exhibited. At the meeting of the Orchid Committee of the Royal Horticultural Society on June 7, 1892, it was unanimously awarded a First-class Certificate; and the appearance of the plant among the rarities shown by Messrs. Linden at the meeting in the Drill Hall on October 10 last well sustained the award previously made, its chaste white flowers, with purple lines radiating from the base of the lip, rendering it a very handsome variety.

It was introduced by Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, and a good illustration was given of it in the fourth part of that excellent work, the *Lindenia* (English Edition).

NURSERY NOTES.

COLCHICUMS AND CROCUSES AT LONG DITTON.

THESE beautiful bulbous flowers were a few days ago in beauty in Messrs. Barr & Sons' nursery at Long Ditton, where a large collection is grown. It is only in such a place as this that one sees these fine bulbs, and English gardens lose greatly in interest by not being more liberally planted with the best species and varieties. They are in perfection at a time of year when the garden is fast going to decay, and properly planted they are not hurt by autumn winds and rains. It is a mistake to plant either the Colchicums or the autumn-flowering Crocuses, for instance, on a plot of ground much exposed, or without a creeping plant of some kind to cover the surface, and prevent the rain from splashing and destroying the beauty of the flowers. Also when planted upon rockeries, the more sheltered spots should be chosen. The bulbs at Long Ditton fill many large beds, and in the sunshine of a late September or early October day, they create masses of colour. The chief species is *Colchicum autumnale*, which goes by the name of the autumn Crocus, although it is not a Crocus. Of this species there are many varieties, both double and single, as indicated by the varietal name. *C. roseum* has rose-coloured flowers, album pure white, but the double forms are remarkably beautiful, plenum, Lilac, and the double white in particular; the latter a lovely flower, and as yet very little seen outside a large nursery or botanic garden. Such bulbs should be plentiful, as the flowers are not only perfectly double, quite a large rosette in form, but of the purest white. The double varieties are not so suitable for planting amongst grass as the single kinds, and should be reserved for the rockery, or the margins of shrubberies, where heavy rains can



FIG. 85.—ZYGOPETALUM (WARSCWICZELLA) LINDENI: WHITE, WITH PURPLISH STRIPES ON THE LABELLUM.

supplied with plenty of root moisture. But then it is invariably found in the case of Apples and Pears grown under glass, that these fruits so fine and so delicately coloured, are relatively soft and light, leading to the inference that the flesh has been too rapidly developed, to have that solidity and endurance so essential to good keeping and usefulness. Colour in this season beautiful, and rich almost beyond precedent, but colour never indicates flavour, and seldom solidity of flesh. Colour seems to be generally created at the expense of quality, and

hardly a case of any vegetable product where great size for the kind or variety does not mean a very great percentage of water in their composition, or else such thin cellular tissue that shrinkage soon follows. Mere size in anything does not indicate a relative quantity of food or nutriment. It much more frequently means a percentage of water, and no more. Yet there are plenty of people who will almost worship size, under the impression that it is all gain. The Apple tree that produces 500 clean, fair-sized fruits, furnishes more real food than does

have little effect upon them; the heavy blooms are soon dashed to the ground. *Colchicum speciosum* var. *rubrum* is a fine form, the flowers of a ruby-crimson colour, and large; and another conspicuous variety of this species is *Sibthorpi*, the segments chequered with a purple-rose colour. *C. Bivona*, lilac-rose; *C. byzantinum*, rose; and *C. variegatum*, sometimes called *C. Chionense*, are also fine species, which will be in all collections at all representative. *C. Parkinsoni* is remarkably distinct, conspicuously chequered with purplish-violet. The single species are well fitted for naturalising in the grass.

It is curious that the autumn Crocuses, which offer such a variety of colours, and are as easily grown as the more common Dutch kinds of spring, are really quite rare in gardens. Even that fine flower, *C. speciosus*, is little seen, but a more beautiful autumn-flowering bulb it is difficult to find. When seen in a large bed, the colour is superb, the flowers expanding widely in the sun, and displaying the orange stigmas, very brilliant against the purple segments. This species should be planted in quantity in the grass, in clumps on the rockery, and in the border, as it is less apt to get knocked about by rains than the heavier-flowered *Colchicums*. There are many species and varieties, and the flowering season commences in August, continuing until quite the end of autumn, when the winter-blooming kinds expand their flowers to the sun. Amongst the finer species worthy of attention, other than *C. speciosus*—the most useful of all, are *C. cancellatus* and its varieties, such as *cilicicus* and *Mazzianicus*; *C. medius*, one of the most easily grown of the genus; *C. ochroleucus*, *C. pulchellus* and its pretty variety, *albus*; *C. Salzmannianus*, *C. serotinus*; *C. Tourneforti*, and *C. sativus* and its varieties. It is especially necessary not to plant the finer kinds except with some green-leaved plant for contrast. Against the bare earth they stand little chance in the autumn, and the colours are so delicate that they are quite lost. There is so much beauty in the *Colchicums* and Crocuses of autumn, as one may see at Long Ditton, that it is to be hoped they will be grown more liberally. *Visitor*.

PRUNING OF FRUIT TREES.

WHERE it is intended to have fruit trees growing in a comparatively small space, and which it is desirable to keep dwarf, a special system of pruning is necessary, and the object would be to get growing branches nearer to the ground, and not up in the air a long distance, where the trees would make large spreading heads. In order to accomplish this, one has to prune out, during the summer, most of the strong and vigorous growths at the apex of the plant, so as to throw the course of the sap into the branches near the ground; for, in a state of Nature, the tendency of the tree is to go up, and to go up as rapidly as it can, and the upper branches are, therefore, the strongest, and the lower branches are the weakest. To cut the strong ones out, therefore, strengthens the lower ones. It is on the same principle that we prune hedges. These we wish to keep low, and for this reason the plants are pruned in the summer time. The strong, vigorous branches—the top of the hedges—being the ones cut out; and this throws the sap into the branches near the ground, thereby strengthening them and making them of equal growth with those at the apex, and this work has to be done during the growing season. If the same kind of pruning were done in the winter time instead of the summer, the result would be that in the next spring innumerable strong shoots would push out where the upper ones are cut off, and growing so strong they would absolutely draw the nourishment from the lower branches. The pruning has to be done in this case while the sap is in vigorous circulation, so that the channel may at once be turned into these lower branches. One might take up any number of questions of trees in detail—Apples, Cherries, Plums, Grapes, or whatever it may be—and the lesson is just the same for

all of them. If you want to keep trees dwarf, with abundance of good growing branches near the ground, cut out all the strong shoots at the apex during the growing season. *Meehan's Monthly for October*.

TREES AND SHRUBS.

CLETHRA ALNIFOLIA.

THIS fine old shrub is rarely planted, as is the case with many others that are good and worthy of more attention. I recently met with several good bushes of it in an old-fashioned garden, where the rarer kinds of trees and shrubs were planted half a century since. Some fine examples of *Clethra alnifolia* were in August loaded with fragrant white blossoms. It is a very hardy plant, and grows freely in good loamy free soil. *W. D.*

TAMARIX GALLICA.

The Tamarix is seen more or less all the year in bloom even by the seashore, where it grows best, and both at Eastbourne and at Folkestone a few days ago, we saw several large bushes covered with their pink-coloured flowers. When in flower this graceful shrub is remarkably beautiful, the feathery growth smothered with pink flowers, making a perfect picture, rare because, as a rule, the shoots are pruned away. It is not until the shrub has grown several feet that it blooms freely; and especially at seaside resorts, it is made into hedges, and gets clipped closely with the shears. It would be well if the Tamarix were allowed to develop its natural beauty, and there are certainly few more graceful shrubs for clothing a dry bank. In inland places I have sometimes seen a splendid treat of Tamarix in bloom. *V.*

PYRUS MALUS BACCATA.

This is a year for hardy fruit of all kinds. The various kinds of Crab are remarkably beautiful, and those that seldom fruit freely are breaking down with their heavy burdens. Many of the Crabs require a very hot season for them to fruit freely, and in France they attain greater beauty than in our colder and more changeable climate. For England the most useful is *P. malus baccata*, more generally known as the Siberian Crab, which is an exceedingly graceful and shapely tree, very hardy, and even in comparatively poor years, freely laden with the neat little fruits. Every branch is however this season, about breaking down, so heavy is their crop, which will make a gay effect in the garden through the early winter months. This tree is beautiful in bloom, in fruit, and at all times for its graceful habit of growth. *V.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

WALL TREES: RED SPIDER AND BLACK-APHIS.—The Peach, Nectarine, Morello Cherry, or any other fruit trees trained on walls, which are infested little or much with red-spider or aphid, should be well syringed with Gishurst's Compound, or any other well-known insecticide. To a 24-gallon tank of water, in which Gishurst's Compound Soap, at the rate of 4 oz. to the gallon, has been added, put half a pint of petroleum, being careful that the petroleum is well mixed with the Gishurst during its use. Having syringed the trees with this mixture, allow it to dry on the branches, &c., and the following day begin to syringe it off with clear water, and repeat the operation for two or three days in succession. By so doing, spider and aphid will be destroyed before the insects seek warmer quarters on the approach of frost, and where they are more difficult to dislodge.

RASPBERRIES.—Whilst Raspberries on a deep holding soil will continue to make good canes and yield satisfactory crops of fruit for many years, in shallow and less favourable soils they will, after

being planted eight or ten years, exhaust the soil very much, and make poor canes which bear unsatisfactory crops, in spite of the application of rich top-dressings. At this season fresh ground should be prepared by deeply trenching it and working into it a large quantity of manure; and unless the ground is naturally of very good quality, add sufficient suitable fresh soil. With this kind of treatment of the land, the Raspberry-canecan will last in a good cropping condition for a number of years. Should the staple consist of stiff soil, the scrapings of the road which have laid in a heap for at least twelve months, burnt garden refuse, and old mortar are the best ingredients that can be used to bring it into condition for the Raspberry.

PLANTING.—Providing the ground is in suitable condition without further preparation, the planting of fruit trees and bushes may at once be begun, but if preparations have to be made, it is better to leave the land till such time as it has been sweetened and pulverised by frost, the planting being undertaken as soon after January is out as the state of the weather will allow. If Raspberry canes are to be trained to strained wire, the rows should be 6 feet apart, and the canes 18 inches. This is a commendable method if properly constructed trellises can be put up; still, I consider that fastening canes to stakes a better one, there being little expense connected with it. In this case the stools may be 6 feet apart from row to row, and 4 feet in the row. The stakes being placed at the proper distance apart, plant three canes triangularwise, tying them loosely to the stakes, and afterwards mulch the land with the spent materials of hot-beds. Obtain the canes from a healthy stock. From my experience with the new variety, Superlative, it cannot be too strongly recommended.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

WORK IN THE HOUSES.—Active growth will now be nearly over, and as the season passes, with shorter days and less light, and more artificial heat required, a slight reduction in the temperature will be needed in most of the houses; less moisture also, so as to cause no more excitement than is really needed. Spot on the leaves is caused, very often, through over-moisture; it causes the foliage of the plants to be very sappy, and any check then produces spot, especially with the East Indian species, such as *Aurides*, *Angraecums*, *Phalaenopsis*, &c. The fine sunny days we are getting at present causes the temperature to run up very high during the day. Whilst I write these notes, the blinds, even on the Cattleyas, are lowered during the few hottest hours, from 10.30 A.M. to 1 P.M., when they are drawn up, and the houses well damped. I make a practice of walking through the houses on bright mornings, and if when I feel the leaves of the Cattleyas they are very hot, it is much safer to use the blinds, and even now, on looking through the plants, we find some have got scorched. The high temperature, also, will cause some to start into new growth again which should be going to rest, such as *Phalaenopsis*, &c. If any of these have started a new leaf, let them be placed in the warmest corner of the house, and have every encouragement to make it up as quickly as possible. In fact, there may be a number of plants in this stage which will require all the attention that can be given them to finish growth before the cold short days set in. The majority, however, are finishing their growth, and must be kept rather dry at the roots, but on no account let them suffer for want of water, as these plants have no pseudobulbs to fall back upon, so that any lack of water will soon cause the lower leaves to turn yellow and fall off. Give as much bottom ventilation to these as is really safe, to make the leaves as firm as can be done before hard forcing has to be resorted to. *Oncidium ornithorynchum*, *O. album*, and *O. incurvum*, will finish flowering and start into new growth, and any that need potting or re-basketing should be done as soon as flowering is over. We find these do best in Teak-wood baskets hung close up to the roof-glass. A good potting material for them is about equal parts good peat and sphagnum moss. *Cattleya crispata*, *C. lobata*, and *C. intermedia* will now be starting new growths, and should be kept carefully watered until the growths get away and begin to make new roots from the base; after that, they may have much more water supplied to the roots. These plants should be placed at the warmer end of the Cattleya-house. *C. Lawrenceana* should by this time be partly made up, and will take a good supply of

water at the roots, always allowing the plants to get fairly dry before applying more, as a constant supply sometimes turns the potting material sour. *Cattleya exoniensis* should be about finishing the new pseudobulbs, that will flower later on. Let this species be watered sparingly from now until the flower-buds can be seen in the sheaths, when more water may be applied; for if kept too wet they may start into growth again, instead of flowering.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES.—An examination of the bunches still hanging should be made two or three times each week, removing all which show signs of decay. Black Hamburgs are among the first to suffer, and as they are valued more than any other variety till the end of the year, they should receive special care. Do not admit front air during damp or foggy weather, and the pipes should be warmed a little daily, to drive out damp, which will be assisted by opening the lights at the top of the structure. Remove all laterals, and shorten back any shoots which are green at the ends. A little fire-heat with a circulation of air are the means necessary to ripen any still immature wood. Pot Vines should now be made ready to start in a mild temperature; put them under cover, and examine the drainage, carefully removing the surface-soil with a pointed stick, which should be replaced by a mixture of good loam, with a little of Thomson's Vine-manure added—put on when somewhat dry, and made firm. If the roots are dry, they should receive a good watering. If any wounds have been made by shortening the rods, a dressing of styptic should be rubbed into them, to prevent bleeding when the plants are put into warmth.

FIGS.—All trees which have done fruiting should be allowed to rest as much as possible. If any root-manipulation has to be performed, it must have prompt attention. Fibrous roots should be encouraged, and it may now be necessary to lift and replant the trees in firm calcareous soil. Remove all useless wood, to admit light and air; crowding being a precursor of fruit-dropping. Those plants standing in pots or tubs may require checking at the root when they have grown into rich soil. The plants should now be well-ripened and ready to rest, by being kept rather dry at roots with abundance of air. Those which are forced early in pots, should be treated as recommended for Vines in pots, and rested till December, but prepared now for forcing.

PEACHES AND NECTARINES.—New plantations may be formed, and if there are trees on open walls which can be transplanted, an advantage will be gained. Young trees which may have grown too vigorously should be carefully lifted, the large fibreless roots shortened, and the roots replaced in good loam, mixed with some lime rubbish, and made firm. Trees for early forcing should now be ready for starting, but for the present kept dry and cool. It was an old practice to take the lights from off the trees, but few modern houses admit of this being done. When planting trees for early supplies on thoroughly-drained borders, a careful selection should be made, in order to have a succession of fruit. Hale's Early and Dr. Hogg for 1st and 2nd; Noble's, Grosse Mignonne, and Royal George, which ripen nearly at the same time, are all good for a 3rd. Elruge and Rivers' Orange we have never found to fail when forced early.

THE FLOWER GARDEN.

By T. H. CRASP.

LILIUM CANDIDUM, ETC.—This beautiful old white garden Lily always moves with least injury at this season, and no time should be lost in doing this if the bulbs have become crowded, or it is desired to remove them from some other cause. The same will also apply to Crown Imperials, taking special care not to injure the bulbs in the process. Plant any fresh bulbs of these; they are noble plants for spring flowering, and always please, especially the variegated variety. The bulbs increase rather slowly, but they can easily be raised from seed, and with a little attention good flowering bulbs may be obtained in three or four years. The seeds should be sown now in well-drained pans or boxes, and placed in a greenhouse or frame where frost is excluded.

THE ALPINE GARDEN, especially where any choice species are grown, should receive a careful mulching after the decayed leaves are removed, for many plants will be found to have grown out of the soil. The most suitable compost is well-decayed

leaf-soil and peat, with the addition of a little sand. Some of our beautiful little Saxifrages, as *S. Burseriana*, *S. Boydi*, *S. oppositifolia*, and vars., will be greatly benefited by working a little of the compost among the rosettes. As a general rule, the alpine garden is very liable to get neglected at this season. A careful look-out should be kept for slugs, &c., otherwise great havoc may be done. Some of the very choice kinds should be protected from heavy rains, which can easily be done with a sheet of glass or piece of slate being so placed over them that air can have free access, but the rain be thrown off.

CANNAS.—These ought to be lifted before severe weather sets in. Leave a little of the soil of the beds on the roots, and after being dried somewhat, place them closely together in a shed or cool cellar, and lightly cover with dry soil or sand. In warm localities where the soil is of a gravelly nature, Cannas may be left undisturbed, if protected with a mound of coal-ashes. The safest course, however, is to lift them and store where frost or much damp cannot reach them, treating similarly such plants as *Salvia patens*, *Verbena venosa*, &c.; but it is best to place these latter in boxes, so that sufficient water may be given to prevent the tubers from shrivelling.

CENTAUREA CANDIDISSIMA.—This well-known plant, so useful for bedding, should now be taken up and potted, and wintered in a house safe from frost, giving it no more water than is sufficient to keep the roots fresh, and removing the old leaves as they decay. Plenty of cuttings will then be obtained next March, at which season they root more readily than at any other.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

ANTHURIUMS.—Specimen plants will be now in a state of rest, and care must be taken not to over-water them, as they require but little when they are not growing, but do not allow them to get dry at the roots at any time. The drainage should be in good order, and the plants placed in a good position in the house so as not to be crowded with other plants. *A. Andreanum* is the most continuous flowerer of the class, and it is excellent for brightening the stove or for decorative purposes during the winter. A good quantity of them should be kept in 5 or 6-inch pots for this purpose. During the summer they will grow well and keep a bright colour in quite a cool house. *A. Veitchii*, one of the most useful of the large foliage section, grows well in a cool conservatory during the summer, it is much harder than *A. Warocqueanum*.

POINSETTIAS should now have a warm moist stove temperature, and a liberal supply of manure-water at the roots; but care will be required not to over-water, or yellow drooping foliage will soon be seen. A slight amount of shading is sometimes necessary, but avoid it as much as possible; during bright weather syringe and close the house early; but syringing overhead must be discontinued when the bracts are showing colour. A temperature of from 60° to 65° by night, and 65° to 75° by day, suits them well.

ARDISIA CRENULATA, *A. alba*, *Rivinia humilis*, pretty berry-bearing plants, are very useful during the winter months; they should be placed near the glass at the cool end of the stove. Give them manure-waterings, and keep clean from red-spider. *R. humilis* in small pots is very useful.

GREENHOUSE HARD-WOODED PLANTS will need careful attention to watering and ventilation during the declining days of the season. Avoid over-crowding as much as possible. If grown in mixed houses of plants, they should be placed on side-tables, or on inverted large pots in the best positions, as near to the glass as possible, and where they will get abundance of air. If mildew is seen upon them, dust with flowers-of-sulphur.

CHRYSANTHEMUMS will require constant attention, and all plants should now be safely under protection. Abundance of air must be given night and day. A temperature of from 40° to 50° by night, and 55° to 65° by day, is best for them; fire-heat should be avoided as much as possible, as it spoils the incurved varieties. Liberal waterings of cow-dung water, clear soot-water, or a pinch of some well known plant-food about twice a week, should be continued. Proceed with the training, but from a decorative point of view the less this is done the better. Hazel-stakes are best, they are easy to cut up for specimen plants, and are about the same colour as the *Chrysanthemum-wood*. For decorative plants

in 8 and 10-inch pots, one strong stake in the centre, and each shoot neatly looped with thin twisted pieces of raffia are best.

ROMAN HYACINTHS, NARCISSUS, TULIPS, ETC.—The early-potted batch placed under ashes should be examined, and brought into a cool-house or pit, if they are starting to grow; if left too long, they will spoil. Do not give them much air for a few days, and if the weather is very bright, afford a little shade for a day or two.

PELARGONIUMS.—The show, spotted, French, and general collection of these should be potted on as they require it; give them a light, airy place in a span-roofed pit, if possible on a wood trellis. Old plants that were cut down in August should now be growing well; do not give them much water till they are growing. Strong cuttings that are well-rooted should be potted off into 60's; affording them good loamy leaf soil, with a little rich manure, and plenty of sea-sand.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

FRENCH BEANS.—In most districts these are still flourishing in the open ground, and those who made late sowings have gathered an abundance of this most useful vegetable. Up to the present time frosts have been slight, except in low damp situations. With shorter days and subsequent lowering of temperature, vegetation is not so rapid, and we must expect frost to soon put an end to all further outside growth. Those in frames must be protected with mats or other warm covering to exclude the cold, but air should be freely admitted on warm days if the sun is bright, to keep the plants sturdy. Make another sowing for succession, either in heated pits or in pots. If in the latter, they should be placed near the glass, to keep the plants dwarf. Those that are well up through the soil must have all available light and air. Thin out the plants where too crowded, as nothing is gained by growing closely.

SALADS.—These are now good and plentiful—Lettuce has made rapid progress since the rains, especially Sutton's Mammoth and Hick's Hardy White, two good autumn varieties. Brown Cos is also turning in well, and will prove useful later. Material should be at hand for protection, in case of an early severe frost. Continue to blanch Endive, taking care to do so when the foliage is quite dry. Planting of these and Lettuce may still be done in favourable situations, for in the event of a mild winter, they will be serviceable in spring. Dandelion and Chicory should be taken up for blanching as required, and where young Onions are in demand, sowings should be made in pans or on slight hotbeds, to keep up the supply. Radishes are now crisp and tender, especially those that were sown thinly on a south border, but as they are not now so much in request, further sowings are hardly necessary at the present time.

CAULIFLOWER.—This crop will now demand careful attention, for a slight frost will injure the tender heads, and render them useless. Those just turning in must have the leaves bent over them, and if there be any signs of a frosty night, a little bracken put on the top will prevent the frost from penetrating. Young plants should be transplanted into frames, or on to a sheltered position outside, where they can be protected.

BROCCOLI.—On cold, heavy land, it is well to lift these and lay them down with the hearts facing north. It is usually the stalk, just at the bottom of the leaves, which suffers most from frost, and if the plants are lifted now, and laid down in such a manner that this part of the stem is covered with soil, there will be little fear of their being killed. From experience we find it a thorough good plan to lift all except early kinds. These usually turn in before very severe weather comes.

ASPARAGUS BEDS.—The top-growth on the plants will now be ripe, and as it will be of no further benefit to the roots, may be cut down. Should there be any ripe seed, it may be gathered and put together for the pulp to decay, after which the seeds may be washed and put to dry. The seed will be found useful for sowing thickly in small pots where there is a lot of decoration to do; as when growth is small it is very effective. All weeds should be cleared off the beds; and where they were earthed up in spring for blanching, the soil should be raked down into the alleys. The beds may then have a dressing of well-decayed manure spread over them, about 4 inches thick.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY,	Oct. 24	Royal Horticultural Society's Committee, at the Drill Hall, James Street, Westminster.
WEDNESDAY,	Oct. 25	Floral Committee of the National Chrysanthemum Society, at the Royal Aquarium, Westminster.

SALES.

MONDAY,	Oct. 23	Dutch Bulbs at Protheroe & Morris' Rooms.
		Plants at Protheroe & Morris' Rooms.
TUESDAY,	Oct. 24	Clearance sale of Greenhouse Plants at Lyndhurst, Alley Road, Dulwich, by Protheroe & Morris.
		Absolute unreserved clearance sale of Nursery Stock at the Nurseries, Sunningdale, Berks, by order of Mr. C. Noble, by Protheroe & Morris. (Three days.)
WEDNESDAY,	Oct. 25	Dutch and other Bulbs, at Stevens' Rooms.
		Dutch Bulbs at Protheroe & Morris' Rooms.
THURSDAY,	Oct. 26	Absolute clearance Sale of the Orchids and other Plants, also Lease, at United States Nursery, Hextable, Kent, by order of Messrs. Pitcher & Manda, by Protheroe & Morris. (Four days.)
		Special Sale of Dutch Bulbs, at Stevens' Rooms.
FRIDAY,	Oct. 27	Great Annual Sale of Nursery Stock, at Mr. E. Hollamby's Nurseries, Tunbridge Wells, by Protheroe & Morris (two days).
		Dutch Bulbs, at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 28	Plants, Carnations, &c., at Protheroe & Morris' Rooms.
		Dutch Bulbs and Orchids in Flower, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—47°·7.

Art out-of-doors.

WERE it not for the sub-title, "Hints on good Taste in Gardening," we might have been reminded by the title of this book* of those plaster nymphs and arches of burrs and whelkshells which are still so common in our suburban gardens, and of those fearful and wonderful constructions of globes and obelisks of flowers and foliage common in American parks. These things belong to the infancy of garden decoration, and are sure to be discarded as knowledge increases. The architects of our time, who ought to know better, are wont, or some of them are, to refuse to consider the creations of the landscape gardener as works of art, but place them on a level

with the ignorant vulgarities of which we have just spoken. Mrs. VAN RENSSELAER holds different opinions. To her gardening is "the art which stands nearest to Nature," and this expression forms the key-note to her book. Now, natural scenery, which is so full of suggestion to the landscape artist, is in all cases the result of adaptation to circumstances. The hills owe their outline to a compromise between the resisting powers of the rock or soil, and the disintegrating action of water, or ice, or air. The river-banks owe their curves and bends to the reciprocal action of the texture of the soil and the action of the water. The vegetation differs according to soil and aspect, and that aggregate of conditions which we call climate. When the balance is fairly adjusted, the general impression is one of harmony. Such harmony might, it is conceivable after a time, be monotonous; but this is obviated by the infinite variety of colour, and the exquisite gradations of light and shadow to which even the tamest of scenery is subjected. Moreover, the beauties of natural scenery are often intensified by sharp contrasts. It might seem at first as if these contrasts were antagonistic to the principle of harmonious adaptation to circumstances; but a moment's reflection will show that they are not so, but are simply the expression of a harder struggle to gain the same ends. Whether it be the Matterhorn rising in marked contrast from the pastures at its base, or whether it be a mound of London clay, scarcely differing, save in being a mound, from the surrounding green meadows—the principle of formation is the same. It is only a question of degree. The contrast does not imply an absolute difference of procedure, but only a variation in its intensity, owing to diversity, again of degree, in the material operated on. Harmony and contrast, then, so often considered as opposite and antagonistic properties, are but extreme conditions of one and the same faculty of the adaptation of things to circumstances. We can hardly conceive of any other relation in natural work, but in the work of man we are too often shocked by the irrelevance and utter want of relation between his productions, the place they are to occupy, and the office they are to fulfil. Of course, this arises from ignorance and want of observation, and it is the function of such a book as we have before us to dispel that ignorance, and to induce people to make intelligent use of their eyes. The most successful landscape gardener is not he who servilely copies what he sees in Nature, but he who has the sense to select what Nature offers, and to adapt it most fittingly to the desired purpose. This demands skill, and necessitates imagination and genius. To refuse the title of artist to a man who possesses these faculties is clearly absurd.

Mrs. VAN RENSSELAER, whose opinions on these subjects were originally published in *Garden and Forest*, is not the advocate of any one style exclusively. She is devoid of any extreme views, dogmatism, or "fads." On the contrary, much of what she says is marked by sound common sense, a rare faculty in art critics, and her views on the beauty of appropriateness sketched in her first chapter, and touched on in numerous other parts of her book, are in full harmony with the general principles of adaptation to circumstances as before alluded to.

In illustration, we may cite one passage relating to formal flower-beds, which the author tells us "are artistic whenever they look as though they belonged in the place where they lie; and this leads us to the fact that they are especially artistic when they look as though this place

belonged to them, as though it had been prepared for them, and could not rightly be filled with anything else." This, of course, is the principle upon which all ornament should be applied, whether it be intended for the decoration of a façade, or the adornment of a terrace-garden. "We shall be well served," says Mrs. VAN RENSSELAER in another place, "only by good sense taking account of particular local facts, and based upon principles which themselves are based upon the same great laws that direct intelligent effort in all the other arts. Simplicity, harmony, appropriateness, variety in unity, clear expressions of clearly conceived and fitting schemes. These are the results to be desired in our parks and country homes as in our pictures, our statues, and our city houses."

We have said enough to indicate the general trend of Mrs. VAN RENSSELAER'S book. It is written mainly for American readers, and for conditions which are always not the same as ours, but we may, in cordially recommending the book to the notice of our readers, give a fuller idea of its nature by indicating the titles of its chapters, as follows:—The Art of Gardening—Aims and Methods—The Home Grounds—Close to the House—Roads and Paths—Piazas—Formal Flower-beds—Formal Gardening—A Word for Architecture—Outdoor Monuments—Cemeteries—The Beauty of Trees—Four Trees—A Word for the Axe—The Love of Nature—A Word for Books, and the Artist. An appendix contains a list of the principal books on gardening art.

Violet Culture in London.

WE have received from a lady correspondent, residing in the neighbourhood of Regent's Park, a letter complaining of her inability to make Violets in frames bloom satisfactorily; in fact, her efforts have resulted in a total failure to obtain any flowers during the winter. This unfortunately happened, notwithstanding a close observance of the directions for cultivating Violets in frames given by ourselves. Provided there was no lack of the proper and essential matters of giving air, little or much in all weather, when there is no actual frost, that the frames are fully exposed to sunlight, and uncovered in the morning as soon as the sun shines on them, or before that point of time if it be mild weather, we can only account for her want of success by the well-known susceptibility of the Violet to the malign influences of London fog, and the consequent diminution of sunlight. It is the usual case with Violet plants out-of-doors in suburban gardens to dissolve, as it were, into nothingness under the usual conditions of the weather during December, January, and February. The plants do not then, as a rule, die out the first season, but make feeble efforts to grow, but so weakened are they that they succumb during the second winter. In a lesser degree this would probably be the case with plants in cold frames, and they would flower but little or not at all until the spring. Other plants suffer greatly from London fog, of which we may instance Pansies, but they are not so much enfeebled as the allied Violas, which may die down to the roots, but still bloom abundantly at the proper time; Picotees and Carnations, but not all varieties; plants of the Primula family; Saxifrages, with moss-like foliage; and such hardy subjects as Sage, Thyme, Southernwood, and Lavender. These ill-effects of fog and smoke have greatly increased with the extension of London, rendering the cultivation of many hardy herbaceous plants that were formerly grown very well within 2 miles of Charing Cross an impossibility.

* *Art Out-of-Doors*, by Mrs. Schuyler van Rensselaer, (London, T. Fisher Unwin, 1893). Pp. 399.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held on Tuesday, October 24, in the Drill Hall, James Street, Victoria Street, Westminster. The Council of the Society have offered special prizes for Apples and Pears grown in the open air, and also for Grapes. At 3 P.M. Mr. A. DEAN, F.R.H.S., will deliver a lecture on "The Cultivation of Onions," examples of which would be welcomed at the meeting.

NATIONAL CHRYSANTHEMUM SOCIETY.—We are requested by the Hon. Secretary to state that on the occasion of the great exhibition at the Royal

exhibition has been arranged as follows:—President, M. ALPHONSE DE COCK, administrateur de la Société royale d'horticulture of Antwerp; vice-presidents, the Comte DE KERCHOVE DE DENTERGHEM, membre de la chambre des Représentants, and president of the Royal Agricultural and Botanical Society of Ghent; M. JEAN EVERAERTS, vice-president of the Royal Horticultural Society of Antwerp; Secretaries, MM. ANATOLE DE COCK, assistant-secretary to the last-named Society; LOUIS LUBBERS, secretary to the federation of the Horticultural Societies of Belgium; and CHARLES VANDERLINDEN, secretary to the Royal Horticultural Society of Antwerp.

the bare rock, will prove valuable for cutting, as no other species of the same genus has such long flower-stems. A Diploma of Honour à l'unanimité was allotted to M. MOENS, for *Cypripedium Spicerianum* × Lowi, and most resembling the latter variety; a similar award was made to M. LINDEN, for a new *Cypripedium*, the petals of which were curled up along their entire length. A Certificate of Merit was awarded to the same exhibitor for *Catasetum Claesianum*, with yellow hermaphrodite (?) flowers. First-class Certificates of Merit were awarded à l'unanimité to M. LINDEN for *Cattleya maxima* Leopoldi, the flower unusually dark, the lip very peculiar, with



FIG 86.—MR. G. F. WILSON'S JAPANESE IRIS GARDEN, WISLEY. (SEE P. 499.)

Aquarium on November 7, 8, and 9, the flowers competing in class 27 of the amateurs' division will be considered when the special *Gardeners' Magazine* Medals are awarded. This class was unfortunately omitted from those mentioned on p. 64 of the schedule of prizes. Also that the awards in class 48, being special prizes given by Mr. E. C. JUKES, will be the Silver-gilt, Silver, and Bronze Medals of the Society. The Floral Committee will meet on the second day of the show, Wednesday, November 8, at 2 o'clock, and not on the first day of the show, as heretofore.

THE ANTWERP EXPOSITION UNIVERSELLE.—The management of the horticultural section of this

MEETING OF THE BRUSSELS ORCHIDÉENNE.—One of the best shows held by this Society during the five years that it has existed. Sixty fine Orchids were shown by thirteen growers. A First-class Diploma of Honour was awarded to M. CLAES, who both introduced and staged some *Cattleya Alexandræ*: one of the varieties had an unusually dark lip; another, broad, and almost greenish divisions. The plants were, indeed, just as they were described when discovered. One of the specimens bore a flower-stem with five blooms; in a year or two they will bloom as they do in their native country. The divisions of the flower are brown at first, afterwards shading into a violet tint, which makes them very distinctive. This *Cattleya*, which in Brazil grows on

a broad central band of golden yellow and a white ground veined and streaked with dull purple; to the same exhibitor for *Cattleya Eldorado* var. *Oweni*, with the divisions creamy-white, the base of the lip saffron-yellow bordered with white, and the extreme edge purple; and for *C. Warocqueana fascinata*, a large flower of wonderful colouring, the lip very dark, edged and marked with lilac. First-class Certificates of Merit were allotted to M. LINDEN for *Cattleya Warocqueana flammea*, with a large lip and dark colouring; and for *Cypripedium Rothschildianum*, Linden's var., a fine variety, with four good flowers all equally fresh; also for *Cattleya Eldorado Treylonis*, flower pale, an unusually beautiful shade of tender rose, the lip orange-yellow; also for *C. E.*

Lindeni, flower lilac-rose, lip wide, at the base bright yellow bordered with dark purple; to M. LANSBERGER for Paphinia grandis, a large and fine flower; to M. LINDEN for Lælia grandis, a splendid flower, with a large lip of dull and very rich colour; to Dr. CAPART for Odontoglossum crispum, petals white, sepals white bordered with violet, each division marked with a great red spot—a fine variety; to M. LINDEN, for O. crispum, flower-stem with fourteen blooms, with pure white petals and sepals marked with red, flowers large, and well massed; to M. VAN IMSHOOT, for Cattleya aurea, a beautiful flower, with a very large lip, the ground colour very bright yellow, marked with broad stripes; and for C. aurea, a variety with a large and entirely-striped lip; also for C. gigas, a flower of unusual size, each petal measuring over 5 inches in width—a splendid thing; also for Miltonia Moreliana atropurpurea, remarkable for the darkness of its colouring. Second-class Certificates of Merit were awarded to M. VAN WAMBEKE for Cattleya Warocqueana majestica, remarkable for its fine colouring; and to M. LINDEN, for C. W. formosa, dark in colour—a fine flower, with a lip well-marked and bordered. *Ch. de Bosschère.*

SECOND CROPS.—There were shown at Brussels on October 7, some Pears gathered from a tree which bloomed for the second time in July, and also a branch of Apple bearing both fruit and a second crop of bloom.

EXETER GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—At Exeter Guildhall on Wednesday evening, 11th inst., Mr. D. C. POWELL, of Powderham Gardens, read an interesting and instructive paper on "Pears and their Culture." This paper was the first of a series of essays which will be discussed during the winter session. Mr. G. B. CARLILE presided over a large attendance. A long discussion followed, and the meeting terminated with a vote of thanks to the chairman and the essayist.

A LARGE PEAR.—A Pear has been gathered at Charly (France) measuring nearly 10½ inches in circumference, and 5½ inches in length without the stalk.

A NURSERYMAN'S CATALOGUE FROM AUSTRALIA.—There has recently come to hand a catalogue of seeds, plants, trees, and shrubs from Messrs. ANDERSON & Co., 216, 218, Pitt Street, Sydney, which, in regard to its numerous illustrations, may be classed with the best of those issued in this country. Amongst the vegetables offered are the best of our home kinds and varieties, with a few which are presumably native to the soil; and as befits a catalogue intended for residents in a climate warmer than ours, we find highly recommended for cultivation Soya Beans, Snake Beans, Table Maize, Butter Beans, Okra (*Hibiscus esculentus*), Rosella (*Hibiscus rosella* var.), Pumpkins, and Squashes. Amongst fruits are given Jack Fruit, Loquat, Mango, Rose Apple, Japanese Persimmons or Date Plums, Lemons, Oranges, Limes, Shaddocks, Citrons, Himalayan Blackberries, Cape Gooseberry (*Physalis edulis*), Japanese Plums, Bananas, Water Musk or Rock Melons, Egg plants, and many kinds of Pepper (*Capsicum annum*). The new Clover, *Lespedeza striata*, is a plant squatters and station-holders are recommended to sow, it being one that does well in any kind of soil, and withstands drought. Teosinte, a Maize-like plant from the Tropics, and growing from 10 to 12 feet in height, is stated to be a desirable forage plant for Queensland and other warm parts of Australia. Seeds of a good many species of Eucalyptus are offered, and the uses to which they can be put are indicated, and a brief description of the timber is given. The same is done with Casuarina and Acacia. The flower-list is good and extensive, but we should say that native flowers ought to preponderate, and not those found suitable in Britain. Such, however, is not the case, for we do not find one native flower mentioned. How odd it must be to find in an Australian garden the Cowslip, Convolvulus, Aubrietia, Armeria, Arabis, Antirrhinums, Daisies, Cornflowers,

Pansies, Marigold, Musk, Lunaria biennis, Myosotis, Polyanthus, and species of Primula. We can but wonder how such plants appear under the brilliant sky and unclouded sun of that southern continent. The catalogue is rich in Roses, in Camellias, and in our varieties of florists flowers. As showing how we English carry the old home over the world wherever we may chance to settle, this list is a capital indicator.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—The annual report by the Directors, read at the meeting, stated that the floral gala, held in the Central Park, Aberdeen, on August 17, 18, and 19, proved to be the most successful yet held under the auspices of the Society in respect of entries and the quality of the exhibits. The entries numbered 1778, being the largest number since the formation of the Society. The financial result was not so satisfactory, although the Directors endeavoured to cater for the public by providing additional attractions.

DR. JOWETT.—In reference to the late Master of Balliol, it is recorded in the *Times* that in the previous generation another member of the family, Dr. JOWETT, was Master of Trinity Hall, Cambridge. He was a man of worth and ability, whose diminutive stature and certain idiosyncrasies of character led to the production by one of his undergraduates of the following lines:—

"A little garden little JOWETT made,
And fenced it with a little pallisade.
But little taste had little Dr. JOWETT,
And little did his little garden show it."

FLOWERS IN SEASON.—Recently we received from Messrs. BALCHIN & SONS, Hassocks Nurseries, Sussex, a few spikes of Tuberoses which were remarkable for the number of blooms which they carried, and the strength of the spikes. On each stem there were from forty to fifty open flowers and buds.

NOMENCLATURE OF HORTICULTURAL FORMS.—The committee appointed by the Madison (U.S.A.) Botanical Congress recommended:—"1. That the nomenclature of the species and natural varieties used in forestry and decorative gardening should be treated by horticulturists precisely as they would be treated by botanists if found growing wild, and that they should therefore be subject to whatever rules by international agreement are adopted for general botanical nomenclature. Pending the adoption of such a code of rules, however, the names used in NICHOLSON'S *Dictionary of Gardening*, so far as they go, should be used. In cases where NICHOLSON is insufficient, the *Kew Index*, now in course of publication, should be followed so far as it goes. In case of the displacement of familiar names, these should be retained in parenthesis until both dealers and purchasers have become familiar with the change. 2. The nomenclature of florists' races and forms, as well as the more numerous artificial, and more or less transient forms of the fruit grower, vegetable gardener, and farmer, should be conducted on quite different lines from that of natural species and varieties, and all names used for such forms should be in the vernacular. Phrases should not be employed as names, and all such vernacular names should be limited to one, or at most two, words, avoiding high-sounding or bombastic names, as well as those which have already been relegated to the list of synonyms. Priority of naming these forms should be recognised. Varieties and forms transferred to a country possessing a different language from that in which they were first named may be re-named, in case the name cannot be transferred directly to the language, the new name conforming so far as possible to the form and sense of the original name, and citing it as a synonym. For use in trade catalogues the names adopted in the official lists of various national societies should be adopted." [It will be seen that these recommendations are in the main those which have been repeatedly advocated in these columns.]

JAMAICA.—Mr. WILLIAM FAWCETT, the Director of the Public Gardens, &c., in Jamaica, has published a provisional list of the indigenous and naturalised flowering plants of Jamaica. It is based on GRISEBACH'S *Flora of the British West Indian Islands*. The total number of species amounts to 2130, about 150 of which are Orchids. An index is also provided, so that this list will be very serviceable to all who are interested in the flowering plants of the island.

GILBERT WHITE.—The current number of the *Journal of Botany* contains a list of plants growing in the neighbourhood of Selborne. The list is taken from a copy of HUDSON'S *Flora Anglica* (1762), which has WHITE'S autograph on the fly-leaf, and a note, also in his handwriting, in which it is said that all the plants "found within the parish of Selborne, in the county of Southampton, are marked with a ×." The enumeration contains 439 species.

A. M. FERGUSON, C.M.G.—The *Tropical Agriculturist* for September has a portrait and a biographical notice of this gentleman, who was born in Wester Ross in 1816, and died at Colombo in 1892. Fifty-five years of his life were passed in Ceylon as a planter, and later as a magistrate and editor. His services in the development of the industries and general welfare of Ceylon were exceptionally great, and were appreciated far beyond the limits of the island.

MANCHESTER FIELD NATURALISTS' SOCIETY.—The report for the year 1892 contains the second report of the Air Analysis Committee, including details as to the amount of sulphurous acid and organic matter in the air, the atmosphere of towns in relation to animal and plant life, the occurrence of fogs, the intensity of light in Manchester and the suburbs, and cognate subjects.

TRINIDAD.—The March number of the *Bulletin of the Royal Botanic Garden, Trinidad*, contains a classified list of the plants cultivated in the garden. The distribution of plants from the garden now averages 30,000 per annum, and in some years this number is almost doubled. The list contains the scientific and vernacular names, the habit, and what is not so common in similar lists, the price at which plants may be purchased. The whole is compiled by the energetic curator, Mr. Hart.

LARGE PEARS.—Mr. R. LEWIS, of Cholsey, Berks, last week gathered five Pears, measuring on an average 15 inches in circumference, 6½ inches in length, and weighing 1½ lb. each. They were specimens of the variety Grosse Calebasse.

HORTICULTURAL COLLEGE, SWANLEY.—At the Experiments Committee of the Kent County Council, held at the Horticultural College, Swanley, on Thursday, October 5, Professor F. CHESHIRE, F.L.S., gave a lecture on the "Root Pruning of Fruit Trees," with special reference to Apple on the Paradise stock, and Pear on the Quince stock. At the next meeting, Thursday, October 19, a free public lecture is to be given on Fruit Culture, illustrated by photographic lantern slides.

"NATURE LOVER."—We have received the first (October) number of the *Nature Lover* (ELLIOT STOCK), a magazine whose title sufficiently shows its scope and contents. It is addressed to the observant enjoyers of Nature rather than to her earnest students. There is a sprinkling of poetry through the pages, and the list of contents concludes with an "&c., &c.," which we suppose to allude to the answers to (early) correspondents. The whole paper reminds us of our old friend, *Nature Notes*. The bad taste with which the anonymous writer in the *Nature Lover* attacks the dead and gone IZAAK WALTON, whose fame is certain to outlive his detractor's abuse, is to be deprecated.

CHRYSANTHEMUMS IN SOUTHWARK PARK.—The show of Chrysanthemums at Southwark Park to the number of 2000 is now, and will be for four weeks longer, open to inspection of the public. The plants

have been arranged by Mr. BAILEY, the Superintendent, in a manner as artistic as is compatible with the circumstances.

THE POTATO HARVEST IN LINCOLNSHIRE.—The Potato harvest in the Fen district of Lincolnshire, as we learn from the *Leeds Mercury*, is now almost completed. Generally speaking, it has been one of the best experienced for several years, and those who risked planting a large acreage with the tuber have had no cause to regret having done so. The early varieties, especially, made some very high prices, and several growers made as much as £20 per acre, exclusive of the cost of digging the crop. The season has been an exceptionally favourable one, and owing to the absence of rain, very little disease has been noticed, and consequently less labour has been required for picking and sorting. *Magnum Bonum*, which is a variety much grown in the Fen district, has yielded heavily, and there are numerous instances—notably amongst allotment occupiers—where the crops have yielded at the rate of 7 and 8 tons to the acre.

HORTICULTURAL CLUB.—The session of 1893-1894 was opened on Tuesday, the 10th inst. The usual dinner and *conversazione* was accompanied by an interesting debate opened by Mr. GEO. BUNYARD, "On the Effects of the Drought as affecting Horticulture, more especially in its relation to Fruit." There was a good attendance, and much interest in the proceedings.

PUBLICATIONS RECEIVED.—*An Elementary Text-Book of Agricultural Botany*, with ninety-nine illustrations. Price 3s. 6d. (University Extension Series.) By M. C. POTTER, M.A., F.L.S. (METHUEN & Co., Bury Street, London, W.C.)—*The Shrubs of North-Eastern America*. By CHAS. S. NEWALL. Price 10s. 6d. (G. P. PUTNAM'S SONS, 24, Bedford Street, London, W.C.)—*Annual Administration Report of the Forest Department, Madras Presidency, for the Official Year 1891-1892*. (Madras: Government Press.) Price 1 rupee 12 annas.—*Die Natürlichen Pflanzenfamilien*. By A. ENGLER. Ninetieth number. (Leipzig: WILHELM ENGELMANN'S Buchhandlung.)—*The Narrative of a Busy Life: An Autobiography*. By ARTHUR HILL HASSALL, M.D. (London: LONGMANS, GREEN & Co.)—*Romance of Low Life amongst Plants*, by M. C. COOKE. (Published by the Society for Promoting Christian Knowledge, Northumberland Avenue, London, W.C.) Price 4s.

PLANT PORTRAITS.

CYRIPEDIUM STONEI var. *CANNATÆ*, *Gard. Mag.*, September 30.

ILLICUM FLORIDANUM, *Bull. Soc. Tosc. d'Orticoltura*, October.

SCILLA TAURICA, *Garden*, September 30.

A JAPANESE IRIS GARDEN.

WE wrote of the beautiful gardens of Mr. G. F. Wilson at Wisley and Heatherbank in the *Gardeners' Chronicle* of August 12 of the present year, and made special reference to the flower that is depicted in the accompanying illustration (fig. 86, p. 497). This garden, which is at Wisley, is in its way unique; it is utterly informal, and the grouping of many lovely plants is a source of relief to the eye tired by a repetition of tuberous Begonias or Pelargoniums in rigid beds. Here, in this Surrey wild, the Japanese Iris *lævigata* (I. *Kämpferi*) is perfectly at home, and we venture to think that in no other spot in England is got together such a splendid collection, or grown in a more natural way. The time to see them in their full beauty is in the beginning of July, although a common impression is that August is the month for the Japanese Iris. Much depends, of course, on the character of the season; but, as a rule, the time named is the season for this annual revelation. The plants enjoy positions in the full sun, and are the earliest to arrive at their flowering stage, but a succession is maintained by planting in shady spots, prolonging the season for two months. I. *Kämpferi*,

as it is generally called, is a stranger to most gardens, and in many places it is impossible to grow it well through lack of moisture in the soil. But English gardens are not all of this character. They are often adorned with artificial canals, trickling brooks, lakes or ponds, at the sides of which this great Japanese flower will luxuriate.

Mr. Wilson is an enthusiast, as all the flower-world knows, and raises his own seedlings. He has hundreds of thriving masses, and a veritable stream, a wide ditch, the sides of which are clothed with I. *lævigata*, which in the summer creates a splendid picture of graceful growth, with varied coloured flowers poised above it. Near the entrance to Oakwood, a large pond is planted also at the side with this Iris, and the plants thrive to perfection, standing with water actually at the roots during the winter months. It was formerly considered fatal to permit this, but plants in this position have, from Mr. Wilson's experience, suffered no injury. The field of seedlings is worth looking at when the plants are in bloom. In a part of the new field upwards of 4000 clumps were planted, and many precious things occur amongst them. In Mr. Alfred Parsons' *Pictures of Japan*, one gets glimpses of this flower, which is grown very largely in that land of quaint and picturesque beauty. A coloured photograph by the writer's side shows a stream with this Iris enriching its slopes with flowers, and it is from this country that the large importations are sent to England. With each batch comes roughly-coloured sketches of the several kinds done on Rice-paper to give the purchaser an idea of the colours of the flowers. In Pigott's *Gardens of Japan*, allusion is made to the I. *lævigata*, and at p. 40 a drawing is given. The author describes the flowers as of every shade, from purest white to pale crimson. In a note Mr. Wilson contributed to the horticultural journals some time last year, he says that when Mr. Pigott was looking at the flowers at Wisley, he told me of flowers he had seen in Japan larger than any I had known in this country. When I told him of the belief that up to the time of the Vienna Exhibition I. *lævigata* had been sacred to the Mikado's garden, and not allowed to be sent out of the country, but that the desire to make the most effective Japanese garden prevailed, and Irises were sent over, and sold at the close of the exhibition, and distributed over Europe, he had not heard of this, and said he had seen them in several parts of Japan.

Writing of the size of the flowers, some of the bigger kinds in this respect are not the most beautiful, and there is an unfortunate tendency to get them double or semi-double. The single varieties are far more inviting, the beautiful curves of the segments are not destroyed, and they stand up boldly in the garden, creating a much more striking effect.

The Iris in any form does not lend itself to doubling. We once saw a double variety of I. *sibirica*, and we hope for the last time. The flowers of I. *lævigata* are of remarkable colouring, exhibiting charming diversity of shade, from pure white, through many tones of purple, to crimson. The spotted, or mottled, types are not a success, and lose in effectiveness. To get richness, one colour, or at least shades of one colour, melting one into the other in gentle gradations should be selected.

Why should not all good gardeners take a lesson from Wisley, and plant the Iris *lævigata* naturally, as one sees it in its native home? The impression that once gained ground, that the plant was difficult to grow, is, we hope, removed, as it is as easy to manage in this respect as any other Iris, if given moisture, which is essential. Dryness is fatal, and the miserable plants one sometimes sees are simply due to a want of this necessary to existence.

All good nurserymen now supply plants at a reasonable price, and the enjoyment of growing the lovely flower is increased by raising seedlings, as does Mr. Wilson. There is the anticipation of something new, or one gratifies oneself, and gives to the world a novelty. Many hardy plants are grown at Wisley, but I. *lævigata* shares with the Lily

the first place. *Visitor*. [The photograph, which is reproduced in our illustration, was taken by Lady Pigott. Ed.]

HOME CORRESPONDENCE.

HOW RED SPIDER WAS GOT RID OF.—Readers of the *Gardeners' Chronicle* for August 20, 1892, p. 210, may probably remember my having strongly recommended the use of bricks for the covering of the surface of Vine-borders, both inside and out. The bricks should be merely laid on, without being either pointed in cement or mortar. I am still as great an advocate for the brick "dodge" as ever, not only because their protective presence brings the roots to the surface, where they can be readily and effectively fed with manurial stimulants, resulting in better Grapes, and of a rich blue-black colour, which the brush of no artist could equal. What I most desire to set forth here is, that by their use I have completely got rid of that—to gardeners—most troublesome pest, red-spider. The summer now passed away being so unusually hot and dry, I have heard gardeners complain what a dreadful season it was for red-spider. I am now, however, in a position, and pleased to be able to say, that the brick mulching as adopted here has brought about total immunity from this persistent, busy little tyrant of our houses, and specially so of our vineries and peacheries. In proof of my assertion, I send herewith a couple of leaves from our early Peach-house. From the time of starting the respective houses down to, and long after the time of, gathering the fruit, these bricks are kept always moist—wet, I might rather say. No dry dusty borders are ever allowed. Whether these insects lay their eggs in, and reproduce themselves amongst, the dry dust of the borders, I am not prepared to say; but having guessed as much, and having tried the antidote of perpetual wet bricks, I am now in a position to say that I have got rid of this disagreeable little lodger, who has, to our great grief, hurt, and annoyance, so long associated himself with almost every move of our indoor horticultural practice. The above refers only to what we call here our "long range" of vineries and Peach-houses. We have, besides, other two long lengths of Peach-cases, to which the brick cure has not yet been applied, in which I am bound to admit we have still a slight sprinkling of spider, notwithstanding all our efforts of constant and copious syringing. There is an old maxim, namely, that "Cleanliness is next to godliness." We should hoe where there are no weeds, smoke where there are no green-fly, syringe where there are no red-spider, and do all else imaginable where there is not even the ghost of a mealy-bug. Young gardeners might do well for themselves by committing these rules to memory, and observing them in their daily practice. Modern technical education teaches many useful things, but these, too, ought to find a place in its curriculum. W. Miller, Combe Abbey.

THE NAMES OF THE VINES AT CHISWICK.—There are some names given by "A. D." in his note in a previous issue of the *Gardeners' Chronicle* which do not seem to be right; for instance, Moore's Seedling is more generally known as Moore's Early, and White Royal Muscadine is simply Royal Muscadine. Traharis puzzled me a good deal, and must be a misprint for Tenturier. B. C.

EMPEROR ALEXANDER APPLE.—It surely must have been through a slip of the pen that "W." at p. 426, referred to this well-known Apple as "comparatively new." Some fifty-five years ago, when a school-boy, I, with my brother, "R. D." had several times a day to pass a large tree of this Apple on our way through the Hill Nursery, Southampton, to and from school; and I have a vivid recollection of forcing one of the fine fruits that had fallen from the tree into one of my pockets, and of being unable afterwards to extract it whole, and of having to cut it out in pieces with a knife. It is, of course, of Russian origin, and, excepting perhaps Duchess of Oldenburgh, the best we have had from that northern country. Alma is a handsome and beautifully-marked Apple; it was, I think, then the finest fruiter of a large—or what was then esteemed a large—collection in the nursery, with perhaps the exception of the Cat's-head Codlin. There is hardly a fine variety of to-day amongst kitchen sorts that has not come into commerce since that day, or at least, if they were existing, they were not much known. Blenheim Pippin and Alfriston, two perhaps

of the older of modern show Apples, were certainly not much in cultivation. In the Hill Nursery all the trees were marked by bricks inserted under them on end in the ground, the end projecting being painted white, and numbered in black—an excellent method. I used to see my father's list of these Apples, and can now repeat accurately, as they ran up to twenty-five at least, and they were committed to memory more than half a century since. *A. D.*

THE PEAR CROP.—Although we experienced a summer of exceptional dryness and heat, the later varieties of Pears carried fruit of more than average size, and some, notably Pitmaston Duchess, appear to have exceeded all others. Here the variety was much larger than usual, my heaviest fruit scaling 2 lb. 1 oz., and the crop numbered forty, the total weight being 55 lb. 3½ oz. Hacon's Incomparable, Glou Morceau, Beurré Rance, and Catillac have also grown to a much larger size than usual. The earlier varieties were small, and are keeping very badly, as also are most of the Apples, so many of them having been injured by wasps and birds. *J. H., Benham.*

CENOTHERA MACROCARPA.—This plant was very telling in effect in the border during the past dry season, having been in flower from May until the present time, although the majority of the border flowers have had a much shorter season of flowering than usual. It is a plant that does not like being disturbed, but should be allowed to establish itself in good clumps at a short distance from the front of a border. *J. H.*

POOR FOLK AND THE DISTRIBUTION OF BULBS.—Among the multitudinous charitable ideas of the present day, that have expressed themselves in societies, it seems strange that the idea of distributing bulbs among the poor of our large towns has never occurred. There is scarce a purer enjoyment, especially to children, than that of flowers, and the interest with which they would watch the sprouting and blooming of a Crocus, a Snowdrop, a Jonquil, or perhaps a Hyacinth, which would only require one bulb to satisfy, and how little it would cost! If a few ladies with spare time would start it, they would be amply repaid with the good they would do, and doubtless many of our bulb merchants would contribute donations of bulbs out of their abundance. The objection to many charitable societies is, that they make the poor less self-reliant, but that cannot be urged against this. *B. Piffard.*

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—As a member of the committee of the above society, I should like to be allowed to express my gratitude to those gentlemen who spoke in such an admirable manner at the annual dinner last week, a report of which appeared in the last issue of the *Gardeners' Chronicle*. The chairman, Mr. P. C. M. Veitch, in proposing the toast of the evening, made an excellent speech, clearly demonstrating the advantages to be derived by gardeners joining our Society. In speaking of the rules, he said he would like to see a graduated scale of payment, so that a member joining at an early age would not have to pay so large a contribution as an older one. But there is no necessity for such an alteration, because under the existing rules, a young man may join at the age of eighteen years, and should he live to reach the age of seventy, he could then draw his deposit with the accumulated interest, which would amount to considerably more than double the amount due to a member who does not join before reaching the age of 36 or 40 years. One thing should not be lost sight of, that is, after a member has subscribed for some years, the interest added to his deposit amounts to more than his annual contributions. Mr. Sherwood, who has done such noble work in starting and adding capital to the Convalescent fund, made a capital suggestion when he said that gardeners should endeavour to get their employers to subscribe to this particular fund, one reason why they should support it being, that if a gardener unfortunately have a serious illness, when recovering, a change of air might benefit him to such an extent, that he would be able to resume his duties weeks sooner than he could have done without the change. The work of the officers and the soundness of the Society, was highly spoken of by gentlemen competent to judge on these important matters. Mr. Marshall being one of the founders, knows something of the management, and he made an earnest appeal for donations to the Management fund. The committee do not feel justified in recommending a further tax upon members beyond the payment of

their annual subscription of 2s. 6d. to the fund; but if, instead of 500 members, we numbered 5000, the annual income to the management fund derived from the 2s. 6d. payments would amount to £625, then the committee would be in a position to provide their excellent Secretary with paid assistance, and adopt other methods of making the Society known throughout the country. The work at present is performed in a too economical manner, but the committee have no power to spend a penny more than is received for the management. As the Society is established for mutual benefit, I think it deserves the consideration of every Gardener's Mutual Improvement Society. Would secretaries of these but apply to Mr. Collins for the rules and the last report and balance-sheet, the subject would form a most appropriate one for discussion amongst the members. When gardeners join in large numbers, and contribute voluntarily the sum of 1s. per annum to the Convalescent fund, there will be no cause to plead for outside help either for that or the Management fund. We have at the present time, in round figures, 500 members, and a capital of £8000 invested, or an average of £16 each member. *G. W. Cummins, The Grange Gardens, Wallington.*

MANURE FOR FRUIT TREES.—Perhaps it may not be generally known that Sea-weed is good manure for Pear and Apple trees. I have used it for some years with success; and I was acquainted with a gardener who applied Sea-weed every year to his Grape Vines, which bore heavy crops of Grapes. The weed has the best effect when it is laid on the soil at this season, what is left in the spring being dug in. *J. Maers, Marazion.*

STRAWBERRIES.—It may interest the readers of the *Gardeners' Chronicle* to know that I have for the last three weeks been gathering Strawberries perfectly ripe, and on looking through my beds to-day, October 10, I counted fifty berries on one plant, and should the weather continue fine and warm, I shall gather many more dishes. The variety is Vicomtesse Héricart de Thury, of which I grow about 500 plants. I may add, these were not transferred from pots in the spring. *F. Roberts, Prestwood Hall, Stourbridge, Worcestershire.*

UNSEASONABLE FLOWERING.—The Narcissus (see p. 468) by no means stands alone. *Cooperia pedunculata* is making the same miscalculation; and as for Gentians, my garden looks like April so far as they are concerned. Irises, Anemones, &c., are all under the same delusion, as you will see from the contents of my little box. *H. E., Ryde.*

POTATOS IN 1893.—Will some readers of the *Gardeners' Chronicle* who are growers of Potatoes, kindly say if the past summer has been favourable or unfavourable to the growth and quality of Potatoes? We have about one acre of field Potatoes which are little less than useless. The varieties are the Bruce, Schoolmaster, and Magnum Bonum, and the last is the worst. The soil is a sandy loam, that was heavily manured for a previous crop—Turnips, which were consumed by sheep on the ground, but no other manure was afforded. The tubers were planted at the usual time, and no rain came from the time of planting till about the middle of August, and by which time they were nearly ripe, and the tubers about half the proper size; after the rain, they started to grow again, and the result is, one end of the tuber is very hard and quite ripe, while the other end is still in a growing state. It should be understood that there is but one crop of Potatoes, but a second growth of the tubers. I should be glad to know if anyone else has got any of the same, or if it could have been avoided this dry summer. I may add, that we had some in another field that was well manured, and these were just the same. We are about 150 feet above sea-level, and the ground is naturally very dry. *Constant Reader.* [The above letter illustrates a common occurrence in dry seasons; it may, perhaps, be avoided on land which can be irrigated—not otherwise. *Ed.*]

NAMES—NAMES.—With reference to your remarks at foot of Kew Notes, published in your issue of September 23, we would say that we always do consult competent authorities before giving names to new plants; but nurserymen like ourselves, who possess a certain [amount of] botanical knowledge, have to meet with many difficulties, especially in this country, where we do not often obtain the necessary support. After all, we must sell our goods, and we name them as we think fit, using as short and as characteristic names as possible. How would

it sound if we had named the plant "Colocasia antiquorum var. Duffii?" From a botanical point of view, this would perhaps have been correct, but certainly not practical from that of nurserymen. Moreover, we could not afford to wait perhaps many years before such a rather difficult plant produced flowers. *Dammann & Co., Naples.* [The proper course in such a case as our correspondents allude to, is to adopt a vernacular name, and not to give a Latin one, which may be misleading. We admit the right of our correspondents to name plants "as they think fit," but always providing they do not contravene botanical usage, or use a name likely to give rise to misapprehension. *Ed.*]

THE ONION TRIAL AT CHISWICK.—It is hardly open to Mr. Barron, having regard to his official position at Chiswick, one needing much tact as well as complete impartiality, to enter into a discussion such as "Pioneer" invites. That objection, however, does not apply to any member of the Fruit Committee, and especially one who, like myself, was present at the meeting held at Chiswick for the consideration of the Onion trial of the past season, which admirably concluded there. The members present were all persons having as much knowledge of the merits of Onions as does "Pioneer," and under no circumstance did they hold a brief for any seedsmen. They found the trial as it was a very good one indeed for that season, and without any reference to the age or newness of sorts, or to the firms sending the stocks, made their awards absolutely and only upon the merits of the stocks as presented whilst yet in a growing state. I am absolutely certain that no impartial body of persons could have come to any other conclusions. We had as a committee no command to exploit Deverill's or any one else's Onions; and if there had been such, we should have treated it with contempt. "Pioneer's" knowledge of certain Onions might previously have been such as to have rendered him a useful member of the Fruit Committee; but now, whatsoever his knowledge, his gross partiality has been shown in so obvious a degree, that he is quite out of court, and his opinion is not worth a rap. If trials are to be conducted at Chiswick, it is obvious that the fullest consideration must be given to the results they exhibit. In every case the sorts selected for awards were the best stocks, most even, fine, and true. Mr. Barron deserves all credit for the excellent form in which the entire bed of some fifty rows was presented to the committee. To write about certain new Onions being best suited to our English climate is nonsense, for we have had plenty of sorts that did admirably here long before the name of Deverill was heard of. If out of the seven sorts selected for awards so few are fit for our English climate, how came it that Mr. Deverill put into commerce the two Southport varieties and Cocanot? Is it not a little too absurd to evoke the name of Deverill and also denounce it. This is indeed trifling. "Pioneer" may be interested to learn that not only were Improved Wroxton and Cranston's Excelsior included in the trial, but also such vaunted varieties as Ailsa Craig, Lord Keeper, Anglo-Spanish, and Royal Jubilee, but these under the ordinary culture of the trial were not so good as were those selected for the awards. With the prevailing prices of seed the committee have nothing at all to do. Were that point considered, awards could never be made to novelties. With respect to the Italian Tripoli Onion selected for an award, the seed came from the comparatively unknown firm of Vilmorin & Co., Paris, and not from the house of Deverill. Still, I hope some good may even come from Paris. As to selections from Excelsior, or any other variety, others have laboured longer in that field than even the late Mr. Deverill. *A. D.*

ODONTOGLOSSUM AND PHALÆNOPSIS.—The advice of Mr. Holmes, in his Calendarial notes in your last issue, as to the winter treatment of *Odontoglossum* and *Phalænopsis*, is somewhat new to me. I should like to ask him, through the columns of your paper, if he has found such treatment successful? *G. S.*

NERINE FOTHERGILLII.—I saw a fine batch of this plant in full flower at the Mote Park, near Maidstone, last month. The plants were standing on a shelf in a cool-house, where they got plenty of air. For all kinds of decorative purposes it would be hard to find anything more pleasing than this plant when in flower, and the flowers have the merit of being a most conspicuous colour, and an airy and beautiful form when closely inspected. *W. H. Divers, Ketton Hall Gardens, Stamford.*

A LARGE HOLLY TREE.—May I venture through your columns to describe a Holly tree within 10 paces of my house, which is 1040 feet above the sea, which I venture to think is the largest in Great Britain. I have in my possession a report which was made on it in January, 1836, and at that time the tree "measured in circumference above the roots thereof 27 feet 6 inches, and estimated to be 60 feet in height, and is very branching, and the general opinion is that it is four hundred years old." The circumference of the tree now is 30 feet, and its height 43 feet, and it has sixteen main branches, measuring in circumference 11 feet 7 inches, 8 feet 2 inches, &c. It covers a circle the diameter of

were made is so peculiar, that no one really understands it (excepting possibly the chief of the department of awards). However, the awards have been dealt out with a very liberal hand, scarcely anyone appears to be omitted, though I doubt whether the exhibitors of really meritorious displays will feel the honour of an award so great when they notice that similar distinction has also been given to exhibits of decided mediocrity.

Among the English exhibitors named in the first list of awards are the following firms:—Jno. Laing & Sons, James Carter & Co., Kelway & Son, H.

the judges, some of the appointments made caused very unfavourable comment, as, for example, that of a lady unknown to horticultural fame, as a judge of florists' requisites!

Among American exhibitors, the State of New York claims the largest number of awards, the greatest display having come from that place. F. R. Pierson & Co., Peter Henderson & Co., Siebrecht & Wadley, Ellwanger & Barry, and Wm. Tricker, of New York; H. A. Dreer, A. Blanc, B. A. Elliott, and Dingel & Conard, of Pennsylvania; J. C. Vaughan, of Chicago; Pitcher & Manda, and E. D.



FIG. 87.—*IRIS LAEVIGATA (KEMPFERI) VAR. E. G. HENDERSON*: FLOWERS NATURAL SIZE; LARGE, DEEP PURPLE, BARRED WITH YELLOW. (SEE P. 499.)

which is 54 feet, and its branches have numerous initials and dates cut on them, those which can be still deciphered ranging from 1700 to 1864. The most legible is that of J. Broughton, August 22, 1756, which is almost as clear as the day on which it was cut. Many of the branches are half eaten through with rot, and I have had all the sixteen supported by iron rods. The tree still shows great vitality, each year bringing forth numerous young shoots. It is rather curious that on the opposite side of the valley is another large Holly tree, which measures 17 feet 6 inches in circumference. *Geo. H. Lloyd-Verney, Col., Clochfaen, Llanidloes, N. Wales.*

THE WORLD'S FAIR, CHICAGO.

THE first announcement of awards in the horticultural department was made in the latter part of September. The system by which these awards

Cannell & Sons, Anthony Waterer & Sons, Alexander Dickson & Sons. This list makes no mention of John Waterer, whose Rhododendrons were so much admired in June last; but it is likely that the list, though official, is by no means perfect, as I know of some omissions in the list of American exhibitors.

Among Continental exhibitors receiving awards, we find Hillebrand & Bredemeier; Vilmorin, Andrieux & Co.; Croux & Sons; V. Lemoine & Sons; M. Moser; and a long list of German seedsmen, nurserymen, and florists, including Henry Mette, Ernst Benary, Haage & Schmidt, Oskar Tiefenthal, Wm. Pfitzer, F. Roemer, Joseph Mock, and others. It must be stated that these awards are not competitive in the ordinary sense, since all who get them are on a parity; there are no distinctions of merit. Though there were some men of worth and standing among

Sturtevant, of New Jersey; R. & J. Farquhar, of Massachusetts; and E. G. Hill, of Indiana, are among the American firms receiving awards. But I think the real distinction of any display at the World's Fair will be the verdict of competent critics, rather than the official award.

In the latter part of September rain came, after eighty-three days of dry weather; this has been followed by violent storms and sharp frosts, which have wrecked the outdoor plants. The Dahlias from various foreign houses, including a good bed planted by Messrs. H. Cannell & Son, suffered so badly from the drought, that they did not bloom at all, and much of the herbaceous planting presented a miserable appearance. Among the exceptions, however, were the native Asters and *Boltonia latissquamæ*, which bloomed freely, in spite of dry weather. A fine show is made at the present time by a

collection of new Brazilian *Caladiums*; they are remarkable in colour, including a number of varieties, so waxy and translucent that one may read ordinary writing through the leaf. Among the odd colours may be mentioned *Azulao*, with centre and veins of mulberry-purple, with a grape-like bloom. Another very beautiful variety is *Rio de Janeiro*, a waxy leaf, bright flesh colour, with rosy veins. *Guacahy* is another rose-coloured leaf, with red veins and deep purple stalks. These *Caladiums* are said to be entirely new to cultivation.

The beautiful *Dicksonias*, *Todeas*, *Alsophilas*, and *Aspleniums* exhibited by New South Wales will remain in America, the greater part of the collection going to the new Shenley Park conservatories at Pittsburg. The collection of *Caladiums* loaned by Mr. Geo. W. Childs, of Philadelphia, has been presented to the city of Chicago, a destiny which will be shared by many of the other plant exhibits.

The *Canna* exhibit is, of course, over now. The plants suffered at times from their exposed situation, but they made a brave show, though the German varieties were rather a disappointment. The general verdict is that Mme. Crozy is still the best for general excellence; add to this J. D. Cabos, Captain P. de Suzzoni, Florence Vaughan, Alphonse Bouvier, and Comte Horace de Choiseul, and we have six robust, free-blooming *Cannas*, which compose the cream of the lists, according to our experience in Chicago.

The *Nymphæas* did but poorly, the Egyptian *Lotus* was a failure, and the *Victoria Regia* did not bloom at all. With these tender Lilies, no doubt the failure was due to the coldness of the water in the early part of the season.

In the Chicago parks, where all the tender Water Lilies are bloomed in the open air, a steam-pipe passes through the pond, and heat is turned on whenever the weather warrants it. Under these circumstances the *Victoria* has bloomed very successfully. However, in spite of cold water, *Nymphæa Laydekeri rosea* bloomed freely at the Fair, making a very favourable impression.

At the present time, the Chicago Horticultural Society is endeavouring to induce the Directors of the World's Fair to co-operate with them for the purpose of holding a grand *Chrysanthemum* show at the Fair during the first week in November, after the closing of the main exhibition. If the Directors think such a show will prove a financial success, there is no doubt of their aid. *E. L. Taplin, Chicago.*

THE BIRMINGHAM BOTANICAL GARDENS.

THE large glass annex connecting the large Palm-house with the Orchid and other houses, is now fully occupied with the *Chrysanthemums*, a very fine lot of medium-sized specimens in admirable health, but scarcely any yet open.

In the Orchid-house, a large plant of *Aristolochia gigas Sturtevantii* is in bloom, and has been blooming very freely for a long time. It is a spring-struck plant, growing in a monster pot, and has covered a large space at the end of the house, and on the roof. Several Orchids are in flower, amongst them *Dendrobium Phalaenopsis*, and *D. Schillerianum*; the pretty *Scuticaria Steelii*, with its *Odonoglossum*-like flowers, lemon yellow with cinnamon spots, growing in a small pan, and suspended; *Cypripedium concolor*, and several others; a fine specimen of *Oncidium pulvinatum*, *Dendrobium formosum giganteum*, very fragrant; the curious little *Phalaenopsis Emeraldæ*, *Cologyne (Pleione) præcox Wallichianum*, and some *Cattleyas* and *Lælias*.

In the new glass corridor from the entrance-gate to the Lily-house, with a row of *Madame Desgranges Chrysanthemums* on either side, a mass of a brilliant scarlet climbing *Tropæolum*, of which Mr. Latham never had the name, is a superb object just now up the side and over the roof, showing how valuable these climbing varieties are for autumn and winter decoration when struck in the spring.

In the large circular pond in the centre of the

Lily-house, *Nymphæas alba* and *rosea* especially are very charming just now, and in this house *Solanum Wendlandii* has been a striking and beautiful object for a long time, with its huge bunches of lovely mauve-coloured flowers hanging from the roof. This plant should be in every warm stove as a climber. Year after year that much-neglected plant, *Callicarpa purpurea*, is to be seen here in a high state of cultivation. Old plants are cut back hard in the winter to about 3 feet in height, and young growth made, and examples are now to be seen here of grand specimens, with shoots from 3 to 4 feet long, some longer, clothed with handsome clusters of berries of a rich colour resembling well-coloured Grapes. Grown in this way, they are very ornamental indeed.

The Edgbaston Gardens are always worth seeing, as things are done well there, and cleanliness and good culture strike one.

Mr. Latham has a great fondness for rare herbaceous and alpine plants, and many choice things can always be met with here in flower. On a narrow border running the length of the glass structures, many very interesting plants are to be met with; and here, against a low wall, the very pretty and quite distinct *Cotoneaster horizontalis* is a pretty object in its style of growth, and flower and berries. It is a beautiful plant for covering low walls, and should be in general use. On this border is a fine mass of *Opuntia vulgaris* and other Cacti, which has stood unprotected for several winters, and are in excellent health. Amongst other herbaceous plants in flower just now on this border are the pretty *Erigeron mucronatus*, a procumbent plant with its daisy-like flowers; *Caryopteris mastacanthus*, *Ophiopogon spicatus*, *Campanula isophylla alba*, a prostrate-growing variety, with an abundance of snow-white flowers, and an excellent basket-plant; the curious and pretty *Veronica cupressoides* (this was not in bloom), a very ornamental plant for edgings of beds or carpet bedding, resembling a small Heath in growth; a mass of *Linaria pallida*, with its bright pretty blossoms; *Aster discolor*, one of the prettiest; and the curious *Amicia zygomeria*, a sub-shrubby Mexican plant, with yellow Pea-shaped flowers, and with strongly developed bracts, and of an ornamental character. *W. D.*

AMERICAN PARKS AND GARDENS.

(Continued from p. 429.)

Notable Nurseries.—"I presume you [Mr. G. Nicholson] visited some of our large commercial establishments in different parts of the country?"

Ellwanger & Barry.—"You may be sure I did, and found them very instructive. The famous nurseries of Ellwanger & Barry, of Rochester, for instance, which cover about 600 acres in all, have about 400 of them in fruit trees. I had no idea that the cultivation of fruit trees had attained such enormous proportions in any one establishment. I saw here, too, great numbers of ornamental trees, some of them larger than I had seen elsewhere. The large office building is situated in the midst of a beautiful lawn surrounded by trees, and perfect neatness and order prevailed everywhere. These nurserymen cultivate on their own grounds every new variety of fruit they can secure, to test them, but only propagate and sell those varieties whose value they have proved. It is the same with Grape Vines, of which there are 20 acres of different sorts in cultivation, and they fruit every one and test its worth before they offer it for sale. I saw 15 acres of *Roses* in all, in perfect health. As an illustration of the care these people take in cultivating stock, I will say that they do not grow the trees twice on the same land in succession. After they have removed one lot they hire another farm, so that fresh ground can be secured, and by this means they always have healthy stock, so that it is a genuine treat to see the products of their care. A handsome pavilion was shown to me, dedicated to the children of Rochester, and built at the expense of this firm,

whose public spirit is also shown by the fact that they gave twenty acres of land to be used by the people as a park. Another notable nursery is the one in Waukegan, Ill., where the veteran Robert Douglas, the pioneer in raising forest-tree seedlings in America, still grows *Conifers* in enormous numbers, especially such Western mountain trees as the blue Spruce, the Colorado Douglas Fir and the new Spruce named after Professor Brewer, of Yale, with long pendulous branches like a Weeping Willow. *New York Daily Tribune, Sept. 10, 1893.*

(To be continued.)

MUNCASTER CASTLE.

A SHELTERED dell, about 1 mile in length, runs from the sea-shore at Ravensglass up the side of a hill to the Norman Castle of Muncaster, which has been the residence of the Pennington family since the year 1244. On the way, the ruins of a Roman fortress are seen. Thirteen centuries have failed to destroy it, but those who have not the slightest respect for antiquity have laid sacrilegious hands upon it, using it as a common quarry. In the dell a large number of all kinds of *Rhododendrons* and *Azaleas* are to be seen, the vigour of the plants and rich colours of the leaves showing the suitability of the climate and soil for such plants. A very heavy rainfall, combined with fairly mild climate, due to the proximity of the sea, favour the growth of evergreens. Here are to be seen fine specimens of *Rhododendrons Jacksonii*, *R. præcox*, and *R. hirsutum*, and many of the beautiful hybrids; interspersed are examples of other plants suitable for a maritime climate, such as *Hollies*, *Escallonia*, *Sweet Bay*, *Skimmias*, &c., and groups of *Heleniums*, *Solidagos*, and other strong-growing herbaceous plants, give a bit of bright colouring. Behind these, but sheltered by large *Beeches*, *Sycamores*, and *Austrian Pines*, are many choice *Conifers*, which have been planted from eight to twelve years. These include beautiful glaucous *Picea pungens*, *P. nobilis*, and *P. Nordmanniana*, with *Abies Douglasii* shooting up vigorously above all. The soil is peaty in places, with rich hazel loam, and here and there granite and hæmatite crops up to the surface.

Upon reaching the top of the hill, the Castle suddenly appears among the tall trees. It has been mostly rebuilt in modern times, only one tower being of ancient date; it is built of granite obtained from local quarries, and was at one time surrounded by a deep moat, but this is now dry, and is full of trees. A grassy terrace runs for over half a mile on the east side of the castle hill, and along it a border has been planted with hardy perennials, which look very much at home there. The view from this terrace is grand; over the tops of the trees which grow on the grassy slopes the lovely Eskdale is seen, through which the Esk and its tributaries wind their tortuous paths. The mountains from which these streams rise form a many-coloured background—Corney Fell, with its granite quarries; the rugged Harter Fell, and in the blue distance the picturesque peaks of Scawfell.

The Castle walls are covered with a varied collection of climbers. The turrets look very rich with drapery of *Ampelopsis*, with its autumn tints; near the doorway the large leaves of *Aristolochia Sipho* are conspicuous, and many of the windows are curtained with cluster *Roses*. A large well-kept flower garden, with usual geometrical beds, lies in front of the chief rooms on the south side. The hall and drawing-room are covered with fine woodwork, with which the numerous plants and flowers used for decoration, associate well. Two green-houses are devoted to the growth of *Allamanda*, *Jasminum*, *Lapageria*, *Bougainvillea*, and other climbers, large sprays of which are devoted to the decoration of the rooms.

There are two extensive kitchen gardens, with vinerias and Peach-houses, and an excellent fernery. A large crop of fruit is obtained from the trained trees, the best Apples being *Warner's King*, *Worcester Pearmain*, *Cellini*, and *Alexandra*. Lord Suffield

cankers, and Bl-nheims do not succeed, the best Pears being Jargonelle, Williams' Bon Chrétien, Marie Louise, and Easter Beurré.

On the east side of the hill an orchard has been planted, but probably owing to the poverty and shallowness of the soil—glacial gravel being here present to great depth—the trees have not grown well, and are now under experimental treatment.

Deer, pheasants, partridges, and other game, abound in the park and on the fells, the place being a favourite shooting resort; and on the low hills by the seashore there is a large gallery where the gulls are protected and allowed to breed. *F. V. D.*

COLONIAL NOTES.

A FLOWER SHOW IN MALAY.

THE first Perak agri-horticultural show was held in the Barrack Square, at Taiping, on June 24 last, and it appears that it caused more than a flutter of excitement in that far distant British protectorate. Well, indeed, might it do so, for not only all the chief officials of state took the keenest interest in the affair, but even His Highness the Sultan undertook the part of a judge in the class of economic products. Moreover, the weather was of the finest, and natives attended in their thousands. The idea of a show had been discussed for the past two years, and the Government accordingly made a grant of twelve hundred dollars towards the expenses. Prize lists were published in the English, Malay, Tamil, and Chinese languages, and the show was divided into the following nine sections: 1, Flowering plants; 2, foliage plants; 3, cut flowers; 4, padi and rice; 5, vegetables; 6, fruit; 7, economic products; 8, miscellaneous; 9, live stock: subdivided into—(i.) elephants; (ii.) horses; (iii.) dogs; (iv.) cattle; (v.) poultry; (vi.) miscellaneous. Each of these sections was put under the charge of one or more members of the committee.

Some four days before the show was opened, the exhibits began to pour in, and they were all arranged in place by the evening preceding the show day. The day was fine, but very hot. Judging began at eight o'clock in the morning, and everything was ready for the reception of the public at ten o'clock. From that time to noon the sheds were literally thronged by thousands of natives, who evinced the greatest interest in all that they saw. From twelve to two the grounds were reserved for native ladies, but were again thrown open to the public until eight in the evening. There was also a carriage parade in the afternoon, with prizes for the best turn-outs.

As a first experiment the show was an undoubted success, both financially and otherwise, and it has done much towards interesting the natives in agriculture, and in persuading them to improve the products of their district; in fact, the success was so great, that it is intended to hold an annual show in different parts of the country in successive years.

Several difficulties with which the first show had to contend can be avoided in the next. First and foremost, universal complaints were received that it was impossible to make the natives understand the object of the show. Some thought that it was an ingenious idea on the part of the Government to collect revenue by confiscating all the exhibits, others would not send anything unless they were guaranteed a prize, whilst others thought the only exhibit worth sending was a two-headed chicken or a cat with five legs; in fact, so indifferent were the natives in some districts, that it was only owing to the zeal of the local secretaries that any exhibits were sent at all, some of these gentlemen going so far as to purchase the articles exhibited. However, many of the better class of natives visited the show, and now thoroughly understand its object, and have stated that next year they intend to send exhibits.

The names of many things that were shown are, of course, quite unfamiliar to English ears, but such familiar vegetables as Lettuces, Cucumbers, and Radishes, were well represented. Cocoa-nuts, cotton, gambier, corn, indigo, patchouli, Sugar-

cane, Tobacco, Bananas, Pine-apples, Bamboos, Gourds, and other well-known things were shown. Amongst the productions that are but seldom heard of in this country were such articles as papaya, nangka, ataps, samier, kajang, &c. Several elephants amongst the live-stock exhibits would be a curiosity in this country, and so would game-cocks in the present day, but cock-fighting is by no means extinct in the East.

The balance-sheet, too, is an interesting document. The Government granted 1200 dols., and a subscription-list raised nearly 800 dols. more. Prizes cost some 992 dols.; buildings, 472 dols.; printing, advertisements, coolies, cloth, and lighting took 325 dols.; and after all expenses, there was a balance of about 200 dols.

As the Government wish to encourage the planting of fruit trees in the State, the Government plantations are prepared to supply a varied selection of plants and seeds. *G.*

SCOTLAND.

SCOTTISH HORTICULTURAL ASSOCIATION.

THE monthly meeting of this Association was held on the 3rd inst. at 5, St. Andrew Square, the president, Councillor A. D. Mackenzie in the chair. A paper by Mr. James Riddell, Castle Howard, Yorkshire, entitled "Geographical Influence on Vegetation," was read by his brother, Mr. W. H. Riddell, Edinburgh. Mr. Riddell was awarded a cordial vote of thanks for his paper. A First-class Certificate was awarded to a new seedling *Chrysanthemum*, raised by Mr. Carruthers, Hillwood, Corstorphine, from seed received from the gardens of the Mikado of Japan, and named The Duchess of York. It belongs to the popular Japanese section, is of a clear primrose-yellow colour, broad twisted petals, much reflexed, and quite hemispherical in form. Being, so far as we are aware, the first *Chrysanthemum* of high exhibition rank raised in the district, it naturally attracted great attention from the members present. We understand that the Association is arranging for a series of lectures on technical instruction in horticulture, in which the chemistry of garden crops will occupy a leading place. *A. M.*

NOTES FROM OCHTERTYRE, CRIEFF.

When visiting the horticultural exhibition at Crieff, where there were fine collections of vegetables, Apples and Pears worthy of note, I saw in a collection of Pears from Ochtertyre Gardens, in fine form, *Burré d'Assomption*, and never tasted a finer-flavoured Pear in September; and its appearance is much in its favour also. This Pear is not widely known in Scotland. From Crieff I went to Ochtertyre, with my friend Mr. Croucher, to see the fine collection of Conifers in Sir Patrick Keith Murray's splendid grounds. Though I have often heard of this delightful seat, yet everything in respect to landscape I found far beyond my expectations. Anyone who has a taste for the beautiful, and can admire Conifers planted under happiest circumstances, may do so at Ochtertyre; a good welcome from the enthusiast, Mr. Croucher, whose delight it is to give all the information of which he is possessed on the management of Conifers, may be depended upon. There are few men who have noted the peculiarities of this grand tribe of plants more closely than he. The picturesque ground, now converted into a pinetum, was formerly a shrubbery, planted about ninety years ago with Hollies, Laurels, &c., with a large mixture of flowering, deciduous shrubs. Though now all removed, they were of much service as protection to the Conifers when the bulk of them were planted twenty-five years ago. Last season forty new varieties were added from Messrs. Veitch's collection, the half of which were varieties of *Cupressus Lawsoniana*. Mr. Croucher informed us that on these slopes only one failed to grow, showing how well plants brought from the South thrive in this latitude. We were shown a beautiful clump of *Cupressus Nutkaensis*, containing six varieties; and our attention was arrested by a lovely plant of *C. aurea nova* (of Veitch), a most desirable variety; close beside it stood the silver variety equally beautiful. Of late years, special attention has been given to the glaucous varieties of Conifers, nearly all of which have found a home at

Ochtertyre. After admiring many of these, attention was directed to one of most exquisite colouring, before which even the much-coveted *Picea pungens glauca* pales considerably. Mr. Croucher has named the variety *Picea Engelmanni glauca Veitchii*, to distinguish it from other varieties. It is not my intention to go into details of the species and varieties of Conifers grown here, as over 250 varieties have been planted since 1867. The only tribe which remains to be completed is the Juniper, about a third only of the varieties cultivated being in the collection; and judging from the great enthusiasm existing at Ochtertyre for Conifer culture, the want indicated will be supplied ere long. A notable species, *Abies Veitchii*, planted in 1874, has attained the height of 28 feet; a cone was produced last year on this plant, and figured in the *Gardeners' Chronicle*, 1890, p. 275, fig. 50, and March 1, 1890. The girth of a Wellingtonia (at 5 feet up) is 8 feet 6 inches; and a magnificent old Ash is 25 feet at the same height.

In front of the very substantial and commanding mansion is a terrace with a gravel-walk, running from end to end, 330 yards long, and 10 feet wide, from which are to be seen mountains on the north, east, and west, peak above peak, Ben Voirlich overtopping most of them; and from the top of the house, Birches and Hollies, fronted with Rhododendrons, were admired—forming a beautiful picture on the landscape. Cedars of Lebanon standing boldly above other trees, but associated with other Conifers growing into gigantic form; 100 varieties of Hollies, which have been reduced to seventy by rabbits and field-mice, are a striking feature. Turleum Hill is noted where the highest plantation in Scotland is to be seen. A glimpse is taken of the hardy fruits, where we notice Pear trees on stone walls laden with fruits. Conspicuous were *Beurré Diel*, *Souvenir du Congrès*, *Beurré d'Assomption*, *Catillac*, *Marie Louise*, *Burré Clairgeau*, and *Williams' Bon Chrétien*. Apples on low walls were of great size. Lord Suffield, Duchesse d'Oldenburgh, Ecklinville, and Warner's King, were among the best. This is a seat, like many others in Perthshire, one can visit again and again with pleasure and profit. *M. Temple.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 10.—Present: Mr. McLachlan (in the chair), Prof. Church, Dr. Müller, Mr. Blandford, Rev. W. Wilks, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

Peach Disease.—With reference to the diseased Peaches brought to the last meeting by Dr. Müller, Mr. G. Massee, of Kew, reports as follows:—"The Peach disease is caused by the fungus *Glomeris fructigenum*, Berk., or rather by *G. rusticolor*, Berk., which is in reality only the former species modified by the host, as proved by cultures. In America, where the disease is too well known, and has also attacked Grapes during the last two or three years, it has been found that the fungus can be kept well under control by two or three sprayings of potassic sulphide ($\frac{1}{2}$ oz. to a gallon of water) applied in June or July. Of course, it is too late to attempt spraying this year, but all diseased fruit should be removed and destroyed to prevent the diffusion of the spores." Dr. Müller observed that he had seen the disease twice soon after the setting of the fruit. This appeared to be locally arrested in growth where the fungus occurred, the rest of the Peach growing normally.

Fruiting of Pyrus japonica.—Mr. Blandford exhibited specimens, and commented on the very large size to which the fruit had attained this year. They do not appear to be capable of being put to any use as yet.

Oranges from Australia.—Dr. Bonavia communicated the following remarks on a curious phenomenon connected with Oranges:—"On July 12, 1893, a box of Oranges was shipped to me by a friend in South Australia. It contained four varieties of the so-called 'Portugal' Orange, viz., the 'Navel' Orange, a large and a small Blood Orange, and the Egg Orange. Each Orange was wrapped in tissue paper, and the whole were packed tightly in hay. They reached me after having been about five weeks on the sea in very sound condition, with the exception of one which was spoilt. Probably this had been bruised before it was packed.

"On the voyage the Oranges sweated and the hay

became damp, for when I opened the box a musty smell of damp hay pervaded the whole box; and now comes in an interesting point.

"I unpacked all the Oranges and freed them from paper and hay. They all had a musty smell. I washed some of them and dried them. Apparently the musty smell was completely removed from the outside; but on cutting open the Oranges every one of them had not only a musty smell in the juice carps, but also a peculiar musty flavour.

"It would appear that the mustiness of the damp hay had penetrated through the peel, and pervaded the whole interior of the Orange, giving a peculiar and unpleasant flavour to the juice.

"There was no difference in the four varieties. They were all equally contaminated by the musty smell and flavour, although otherwise quite sound, and when washed the mustiness could not be detected in the rind.

"I ate some of them every day, and by keeping the mustiness of the juice became less, till about the fourth week after unpacking the mustiness in the juice was scarcely perceptible.

"All the varieties were rather thick-skinned, and were very juicy, and all kept very well. Probably the soft hay packing may have had something to do with their not getting bruised on the way. The 'Navel' Oranges were more juicy than the same variety we get in London from California.

"I hardly know how to explain the contamination of the juice by the musty air in the box. The peel contains a large quantity of essential oil. This may have absorbed the musty aroma, and then, when saturated, passed it on to the juice vesicles, which also contain a considerable proportion of essential oil. By keeping and exposure to the air, this process may have been reversed."

With regard to the cause of the flavour of the Oranges, Professor Church explained it by the fermentation of the hay and osmosis causing the scent to enter; then transpiration would subsequently bring about the odour externally. It was remarked by Mr. McLachlan that certain Oranges were eaten green in Java, Ceylon, &c. Dr. Bonavia added that such became yellow subsequently, though they were edible in the green state. They have been illustrated by Miss North among her paintings at Kew.

Pear Disease.—Messrs. J. Cheal & Sons forwarded samples of Pitmaston Duchess Pears affected apparently by a fungus, giving the fruit a warty appearance. They were referred to Kew for examination.

Diseased Salisburia.—A branch of this tree was received from South Dorset, evidently in a very enfeebled condition. It was the general opinion that the mild, damp, maritime climate of the situation was unfavourable to it, and the probable cause of its unhealthiness.

Birds, Wasps, and Pears.—Mr. Blandford observed on the habit of tomtits, which he had seen pecking holes in Pears, which gave wasps access to attack the juicy tissues. Application of nicotine to the wound kept them at bay for six hours. Mr. Henslow added that he had noticed wasps attacking mealy bugs in a viney before the Grapes were ripe. Mr. McLachlan added that he had noticed tomtits attacking Cobnuts for the purpose of extracting the grubs within them.

Synanthus in Cypripedium.—Sir Trevor Lawrence exhibited a plant having two flowers welded into one. It possessed one lower sepal, two large ones above, three nearly equal sized petals, two perfect labella, and two staminodia; the ovary showed the fusion by a longitudinal groove.

A Rhododendron Hybrid.—Mr. Henslow exhibited a specimen received from Mr. Veitch, the result of crossing "Lord Wolseley" by the bigener "Indico-javanicum," this having been the result of crossing "Lord Wolseley" with *Azalea indica* Stella. The flowers were more or less malformed, having a strong tendency to be polypetalous; the stamens were occasionally epipetalous or sub-petaloid. The form of the flower showed no improvement on that of *Indico-javanicum*, though it was a little brighter in colour (orange).

Oak Galls.—Some curious many-pointed galls on the acorns of Oaks at Versailles were sent by Mr. Belt of Ealing. Mr. McLachlan reports that they are the product of *Cynips calycis*, and that this species of gall has never been found in this country.

Rayless Matricaria Chamomilla.—Mr. Henslow exhibited specimens found by road sides in Ealing. They appeared to be particularly abundant last year. Seed obtained failed to germinate in the present dry season.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

LAST year, at the second annual show of hardy fruit in connection with the above, held at the Abbey Hall, Reading, it was suggested that the excellence of the exhibition warranted the promoters in making it more public and popular, the visitors being limited to subscribers to the Society and their friends. Acting upon this suggestion, the executive decided to hold their third show in the small Town Hall, on Thursday, October 12. Their action met with the approval of those interested in the undertaking, and a large number of persons patronised the show, the proceeds of which—a sum probably exceeding £5—will be devoted to the funds of the Royal Gardeners' Orphan Fund. The object of the exhibition is really an educational one, and it is satisfactory to know that some of the best growers of outdoor fruit in the neighbourhood of Reading have contributed to the show.

Mr. J. Pound, jun., gr. to Mr. Alfred Sutton, Greenlands, Reading, has, ever since the establishment of the association, undertaken the duties of honorary secretary, and he certainly deserves great credit for the admirable arrangements he made on Thursday. In the carrying them out, he spared neither time nor trouble in the interest of the exhibition, and he was supported by several leading members of the committee. The show was made most attractive and effective by the arrangements of plants on the platform, and tables in the hall, contributed by Mr. J. Bradley of the Tilehurst Nurseries (who also sent Cucumbers and Mushrooms); Mr. Bright, gr. to Mr. Karslake, Whiteknights Park; Mr. Woolford, gr. to Mr. Alfred Palmer, East Thorpe, Reading; and Mr. Turton, gr. to Mr. J. Hargreaves, Maiden Erlegh.

Last year there were 954 dishes staged, but this year the total number amounted to 1144—a considerable increase, although some persons who sent fruit to the Abbey Hall in 1892 did not, from various causes, send on this occasion. A table was set apart for fruit to be named, on which were upwards of seventy dishes, and the committee came to satisfactory conclusions with regard to these.

Appended is a list of the contributors to the show, with the number of dishes they sent, the list being made up by the hon. sec. as accurately as possible:—

Mr. Stanton, gr. to Mrs. Noble, Park Place, Henley, 140 dishes; Mr. Turton, gr. to Mr. Hargreaves, Maiden Erlegh, 100; Mr. J. Pound, jun., gr. to Mr. Alfred Sutton, Greenlands, Reading, 6; Mr. Ireland, gr. to Mr. Howard Palmer, Devonshire House, Bath Road, 18; Mr. Leaver, gr. to Mr. Leonard Sutton, Hillside, Reading, 13; Mr. Smith, gr. to Mr. M. H. Sutton, Cintra Lodge, Reading, 21; Mr. Iltott, gr. to W. T. Crawshaw, Caversham Park, 42; Mr. R. Webb, Beenham, 33; Mr. Bright, gr. to Mr. Karslake, Whiteknights Park, 14; Mr. Dockerill, gr. to Mr. G. W. Palmer, M.P., Elmhurst, Reading, 72; Mr. Chamberlain, gr. to Mr. F. M. Loneragan, Cressingham, 82; Mr. Durman, gr. to Mr. J. W. Workman, Reading, 24; Mr. White, gr. to Mrs. R. Y. Bazett, Bath Road, Reading, 6; Mr. F. B. Parfitt, College Road, Reading, 12; Mr. Bowie, gr. to Mr. A. W. Sutton, Sutherland, Reading, 67; Mr. Coates, gr. to Mr. R. Hewitt, St. Mary's Hill, Reading, 23; Mr. Wilson, gr. to Mrs. Bland-Garland, Lower Redlands, 13; Mr. Alexander, gr. to Dr. Richardson, Oxford Road, 8; Mr. W. L. Walker, Bulmershe Road, 15; Mr. George Hinton, gr. to Major Battiscombe, Bath Road, 12; Mr. Bristol, gr. to Major Thoyts, Sulbamstead Park, 30; Mr. Dearlove, gr. to Miss King, Brookfield, Burghfield, 20; Mr. Cooper, gr. to Mr. James Simonds, The Redlands, Reading, 18; Mr. Wise, gr. to Mr. W. S. Darter, Summerlease, Reading, 42; Mr. Pound, gr. to Mr. George May, The Warren, Caversham, 13; Mr. J. Hunt, gr. to Mrs. Wells, King's Road, Reading, 16; Mr. Hearn, gr. to Mr. John Heelas, Whiteknights, 27; Mr. Townsend, gr. to Sir William Farrer, Sandhurst Lodge, 21; Mr. W. Lees, gr. to Mrs. Marsland, The Wilderness, Earley, 65; Mr. Farey, gr. to General Radcliffe, Baltimore, Caversham, 58; Mr. Woolford, gr. to Mr. Alfred Palmer, East Thorpe, Reading, 32.

The largest contributor to the show will thus be seen to be Mr. Stanton, gr. to Mrs. Noble, of Park Place, Henley, who staged no fewer than 80 dishes of Apples, and 60 of Pears, and all the fruits were very choice, and were much admired. Mr. Pound, jun., sent six dishes of Pears, which attracted great attention; one dish of Uvedale's St. Germain variety was of enormous size, the five fruits weighing 9 lb., and

the heaviest scaling 2 lb. 1½ oz. The Apples exhibited by Mr. Turton, gr. to Mr. Hargreaves, were remarkable for number, size, quality, and high colour, notable among the 105 dishes shown by him being Bramley's Seedling. Other handsome dishes from the same gardener were specimens of Annie Elizabeth, Peasgood's Nonsuch, and Mère de Ménage. Mr. E. Webb, of Beenham, the well-known amateur fruit grower, had a very fine collection of Apples, which he set up very effectively in baskets, and he deserves great credit for having produced such an excellent lot, considering that the fruit was grown under adverse circumstances. Another amateur contributor was Mr. F. B. Parfitt, of College Road, Reading, who staged several fine dishes of Apples, including specimens of Bismarck, a fruit of great size, crimson-coloured, prime flesh, and a heavy cropper. Mr. Iltott, gr. at Caversham Park, had upwards of twenty dishes of Pears of large size and excellent quality, and Mr. Dockerill, gr. to Mr. G. W. Palmer, M.P., sent a nice lot of Melons &c. Extract from "Reading Mercury."

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	Above (+) or below (−) the Mean for the week ending October 14.	ACCUMULATED.			No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.				
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.		
0 1 —	31	1	+ 531	— 65	13 +	188	37.5	15
1 1 —	40	7	+ 323	— 14	3 +	150	20.6	37
2 1 +	51	0	+ 413	— 87	1 —	128	16.0	46
3 2 +	70	0	+ 503	— 49	6 +	128	15.3	38
4 1 +	57	1	+ 841	— 61	1 —	123	15.6	37
5 2 +	77	0	+ 578	— 53	7 +	123	17.7	36
6 1 —	43	1	+ 473	— 63	6 +	152	29.6	34
7 1 +	63	0	+ 704	— 96	2 +	142	23.8	36
8 0 aver	64	0	+ 694	— 75	2 +	129	24.9	28
9 2 —	41	4	+ 550	— 100	2 +	163	26.0	27
10 2 —	49	4	+ 594	— 97	2 +	142	23.8	27
* 0 aver	89	0	+ 839	— 52	4 +	136	21.8	35

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

MARKETS.

COVENT GARDEN, October 19.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.]

PRICES rule as last week.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	15 0-30 0	small, per 100 ...	4 0-6 0
— specimen, each	7 6-21 0	Foliage plants, doz.	12 0-42 0
Asters, dozen pots ...	4 0-9 0	Fuchsia, per doz.	4 0-6 0
Begonias in pots, doz.	8 0-12 0	Hydrangea, per doz.	12 0-24 0
Chrysanthemums, doz	6 0-9 0	Lilium Harrisii ...	18 0-24 0
— large plants, each	1 6-2 0	Marguerite, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, doz. pots	4 0-6 0
Dracena, each ...	1 0-8 0	Palms, various, each	2 0-10 0
Erica, various, p. dz.	9 0-24 0	— specimens, each	10 6-84 0
Evergreen Shrubs, in var., per dozen ...	6 0-24 0	Pelargonium, scar-	
Ficus elastica, each	1 6-7 6	let, per dozen ...	3 0-6 0
		Solanums, per doz.	9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-9 0	Orchids:—
Aster, dozen bun. ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Bouvardias, per bun. 0 6-1 0	Odontoglossum
Carnation, doz. bun. 4 0-9 0	crispum, 12 blms. 2 0-6 0
— dozen blooms 1 0-2 0	Pelargoniums, scar-
Chrysanthemums, 12	let, p. 12 bun. 3 0-6 0
bunches ... 3 0-8 0	— 12 sprays ... 0 6-0 9
— doz. blooms ... 1 0-6 0	Primula, dble, p. bun. 0 6-1 0
Dahlia, doz. bun. ... 2 0-4 0	Pyrethrum, 12 bun. 2 0-4 0
Eucharis, per dozen 4 0-6 0	Roses, doz. bunches 6 0-12 0
Gardenia, per dozen 3 0-6 0	— Tea, per dozen 0 6-2 0
Heliotrope, 12 sprays 0 3 0 6	— coloured, dozen 2 0-4 0
Lilac (Fr.), per bun. 4 0-6 0	— yellow (Maré-
Lilium lancifolium,	chals), per doz. 2 0-6 0
p. doz. blooms 2 0 3 0	— red, per dozen ... 1 0-1 6
— Harrisii, p. doz. 6 0-9 0	Sunflower, various,
Maiden Hair Fern,	dozen bunches ... 2 0-6 0
12 bunches ... 4 0-6 0	Tuberose, 12 blms. 0 4-0 8
Marguerite, 12 bun. 1 6-3 0	Violets, Parmé, p. bn. 3 0-4 0
Mignonette, 12 bun. 2 0-4 0	— Czar, per bun. 2 0-3 0
Myosotis, 12 bunches 2 0-3 0	— English, per doz. 1 6-2 6
Pansy, per doz. bun. 1 0-2 0	

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Peaches, per doz. ... 2 0-8 0
Orbs, per 100 lb. ... 30 0—	Pine-apples, St. Mi-
Grapes, per lb. ... 0 6-3 0	chael ... 2 0-5 0

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 6—	Lettuces, per doz. ... 1 6-2 0
Beet, red, per dozen 2 0-3 0	Mushrooms, punnet 0 9-1 0
Carrots, per bunch ... 0 4-0 6	Mustard and Cress,
Cauliflowers, each ... 0 3-0 8	punnet ... 0 2—
Celery, bundle ... 1 0-1 3	Parsley, per bunch ... 0 2-0 3
Cucumbers, each ... 0 2-0 6	Shallots, per lb. ... 0 3—
Endive, per dozen ... 1 3-1 6	Tomatoes, per lb. ... 0 3-0 6
Herbs, per bunch ... 0 3-1 0	Turnips, per bunch ... 0 4-0 6
Leeks ... 0 4—	

POTATOS.

Arrivals are very heavy, and trade slow, prices rule very low, except for best samples. Best Beauties making 100s. to 120s.; Abundance, Bruce, 80s. to 90s.; other kinds, 42s. 6d. to 60s. J. B. Thomas.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

BIRCH BARK.—Please state the name of that extremely sweet-smelling grass that the Canadian Red Indians use for putting into various kinds of Birch-bark work, and making sweet-smelling ornaments of? They call it sweet hay, and sweet Indian grass. Can one get the seeds here, and does it smell as sweet if grown here? J. R. H. [The bark itself is highly-scented, and needs no grass to add to its perfume. ED.]

NOTICES TO CORRESPONDENTS.

BLACK HAMBURG POT-VINES: *Perplexed*. The Vine sent was furnished with a large quantity of what had been at one time healthy roots, but which had died back several inches from the points. The failure of the Vines to make good growth is due to this loss of roots, but what caused this loss is but conjecture—probably affording the Vines more water than they needed after the last shift into 11-inch pots, or the too-free use of artificial manure. The contrast between the large mass of roots and the thin unripened cane is very marked.

BOOKS: A. R. D. There are several handbooks which treat of the art of growing Mushrooms. *Mushrooms for the Million*, by J. Wright, published at 171, Fleet Street, E.C., is one of the best.

CARNATION MISS JOLIFFE: E. B. Like many other so-called florists' flowers, Carnations frequently sport, giving on the same plant flowers of different colours. There is no remedy for sporting in flowers and foliage, nor are there any certain means of producing sports.

CORRECTIONS.—*Gladiolus platyphyllus*, p. 456, fourth line in first paragraph, for long-leaved read long lost; and fourth line from end, for firm read forward. A. B., in Names of Fruit, for Beurré Charnensis read B. Charnese.

CYPERUS VINE FROM FLORIDA: W. H., *Glamorgan-shire*. We are unable to find this plant in any list. It is probably a mis-spelling for Cyprus, &c., and the Americans call all kinds of trailing plants Vines.

FRUIT TREES: J. W. If your trees are making too much wood, prune them less severely, the more you cut them the stronger will be their growth. You had also better lift them at once, at the same

time cutting off all thick fleshy roots that have descended into the subsoil, and fill in again with fresh loam, but adding no manure. If your trees are very large, instead of lifting them, you might take out a trench on one side of the tree only, about 3 feet from the stem, and then with a fork gradually and carefully work away the soil from the roots, and treat them the same as if you were lifting the trees. Be sure you cut away any tap roots that are in cold rank soil. The other side of the trees might be served similarly next year. This will apply to the Plums as well as the Pears. We would advise you to read the long correspondence that has lately taken place in our columns on "Root-pruning," "Summer-pruning," and "The Lifting of Fruit Trees."

FRUITING OF RASPBERRIES AND STRAWBERRIES: J. B. An exceedingly common occurrence this season.

FUNGUS: L. T. *Phallus impudicus*, L., in the "egg" state, or enclosed in its volva.

GALLS: W. H. The Artichoke gall.

INSECT: Arthur Pope. We have no record of our having received them.

LARGE PITMASTON DUCHESS PEARS: C. Kemp, *Sole Street House, Faversham*. The six fruit, weighing 7 lb. 9 oz., were unusually fine specimens.

NAMES OF FRUIT: A Subscriber. 1, Golden Noble; 2, Brabant Bellefleur; 3, not recognised.—A. Jackson. Apple, Altristion.—B. Ashton. 1, Vicar of Winkfield; 2, Easter Beurré; 4, Beurré de Capiaumont; 5, Beurré Rance; 6, Hampden's Bergamot; 9, Doyenné d'Alençon; Beurré d'Anjou; others not known.—H. May. 1, Bess Peel; 2, Dutch Mignonne.—W. A. 1, Josephine de Malines; 3, Winter Nelis; 4, Knight's Monarch; 14, Marie Louise; 15, Napoleon; 10, Beurré Bosc; 13, Beurré Bachelier; (many of the specimens half-decayed, and too many sent).—B. S. 1, Scorpion; 2, Pomme de Neige; 3, Devonshire Red; 4, Scarlet Nonpareil; 5, Fearn's Pippin; 6, King of the Pippins.—J. D. 1, Hollandbury; 4, Dutch Codlin. Pear: 1, Thompson's; others unknown.—T. Barre. Apples not recognised. Pear Beurré Diel.—Hope. 1, Minchall Crab; 2, Colonel Vaughan; 3, Hanwell Souring; 4, Beauty of Kent; 5, not recognised; 6, Pear Glou Morceau.—W. L. Buxton. 6, Burchard's Seedling; 4, Tower of Glamis; 3, Winter Hawthornden; 5, Harvey's Wiltshire Defiance; 2, Landsberger Reinette.—J. C. Wheeler. 1, much bruised; 2, Duchesse d'Angoulême; 3, White Doyenné; 4, Easter Beurré; 5, Beurré Rance; 6, Vicar of Winkfield; 7, may be Comte de Lamy; 8, Bezi de Quessoy.—A. B., *Plymouth*. Apple Burchard's Seedling.—D. Elkins. Pear, Josephine de Malines; 6, Brabant Bellefleur; 7, Wareham Russet; 8, Hanwell Souring; 12, Winter Hawthornden.—W. T. 1, Cox's Orange Pippin; 2, Cole; 3, Golden Noble?—H. T. 2, Cox's Pomona; 4, Golden Noble; 5, Schoolmaster.—P. C. H. 1, Beurré Superfin; 2, Beurré Hardy; 3, Durondeau; 4, Brown Beurré; 5, Easter Beurré; 6, Baronne de Mello.—T. N. 1, Cox's Orange Pippin; 2, Winter Hawthornden; 4, Pine-apple Russet; Lane's Prince Albert; 5, Dumelow's Seedling; 7, Winter Peach.—J. Wakeham. Pears: 1 and 2, Glou Morceau; 3, General Todtleben; 4, Knight's Monarch; 5, Altristion? 6, Cornish Gilliflower.—A. E. F. 1, Pitmaston Duchess; 2, Beurré Diel; 3, Verulam; 4, Col. Vaughan; 5, too ripe.—H. N. O.—1, Marie Louise; 2, Passe Colmar; 4, Knight's Monarch; 5, Beurré de Capiaumont; 6, Beurré Rance.—K. F. G. 4 New Hawthornden; 5, Golden Noble; 6, Dumelow's Seedling; 8 Wyken Pippin (Pears over-ripe).—F. Heywood. 1, Cox's Orange Pippin; 2, Court of Wick; 3, Beurré Diel; 4, Doyenné d'Alençon.—W. O. 1, Braddick's Nonpareil; 2, Whorle Pippin; 3, Worcester Pearmain.—A. Z. May probably be Golden Noble.—J. G. 1 Winter Margotin; 2, Winter Golden Pearmain; 3, Franklin's Golden Pippin; 4, Cockle's Pippin; 5, Maltster?; 6 Pear Louise Bonne of Jersey.—Jas. Cloud. Pear Duchesse d'Angoulême.—Geo. Wall. Pear Pitmaston Duchess.

NAMES OF PLANTS: J. B. 1, Specimen insufficient; 2, *Acer campestre*.—J. B. 1, 2, and 3, All varieties of *Cupressus Lawsoniana*; 4, *Thuja occidentalis*; 5, *Pinus Strobus*; 6, *Pinus sylvestris*.—Hugh E. Juniperus nana.—A. Phrynum variegatum.—M. C. Your specimen quite withered, is insufficient for determination.—F. L. M. A. (large one), *Oncidium varicosum*; B. (small one), *Oncidium*

raniferum.—J. Ewing. *Juncus lamprocarpus*, abnormal growth.—Thomson & Co. *Panicum capillare*; it seeds plentifully.—E. Arnold. 1, *Adiantum Williamii*; 2, *Davallia hirta cristata*; 3, *Adiantum cuneatum grandiceps*; 4, *Pteris Victoria*; 5, *P. cretica cristata*; 6, *Polystichum angulare cristatum*.—W. B. G. 1, *Aster confusus horizontalis*; 2, *Cratægus pyracantha*; 3, *Alyssum saxatile*.—Wallace. *Neja gracilis*, so far as we can judge by the specimen sent.—J. B. 1, *Lantana*, garden variety; 2, *Coprosma Baueri variegata*; 3, *Chlorophytum (Anthericum) lineatum variegatum*; 4, *Aster* not recognised; 5, *Veronica spicata*; 6, *Potentilla*, garden variety.—F. F. R. So far as we can tell from the specimens sent: 1, *Juniperus*; 2, *J. virginiana*; 3, *J. communis*; 4, *Retinospora plumosa*; 5, *R. plumosa*; 6, *Juniperus* sp.; 7, *Thuja gigantea*; 8, *T. occidentalis*; 9, *T. occidentalis*; 10, a *Labiata* not recognised; 11, *Weigela rosea*; 12, *Cupressus Nutkensis*.—E. F. Hazleton. 1, *Montbretia crocosmiflora*; 2, *Coreopsis grandiflora*; 3, *Kerria japonica*, fl.-pl.; 4, *Helianthus rigidus*; 5, *H. multiflorus*; 6, *H. multiflorus*, fl.-pl.—J. W. 1, *Hordeum marinum*; 2, *Agrostis alba*; 3, *Aira flexuosa*; 4, *A. cæspitosa*.—T. R. There is a *Cratægus grandiflora* sent out by the Belgian nurserymen, but we are not sure that it is the same as your plant. If spiny, it may be a seedling form of *C. crus-galli*.—D. P. 1, *Pulmonaria officinalis*; 2, *Chrysanthemum coronarium*; 3, *Kerria japonica*.—D. S. *Nigella damascena* (*Ranunculaceæ*).—H. C. *Ipomœa Bora Nox*.—G. H. S. 1, *Polygonum cuspidatum*; 2, *Leycesteria formosa*; 3, *Goldfussia isophylla*; 4, *Gloxinia maculata*; 5, *Phytolacca decandra*; 6, *Boehmeria speciosa*; 7, *Buddleia auriculata*, illustrated in *Gardeners' Chronicle*, November 12, 1891; 8, *Hablitzia tamnoides*.—H. W., *Glamorgan-shire*. *Dendrobium moschatum*.—H. M. 1, not received; 2, not recognised without flowers; 3, *Carduus eriophorum*; 4, *Rhamnus catharticus*.

ODONTOGLOSSUM-HOUSE: D. J. A house 14 feet high to the apex is scarcely adapted to the cultivation of *Odontoglossums*, but provided the glass is clear and good, the panes large, and it can be kept very clean, so as to admit as much light as possible when unshaded, you should be able to cultivate these plants fairly well. The fluctuations of temperature will not be so abrupt as in a small house.

ORCHARD HOUSE APPLES AND PLUMS: A *Plymouthonian*. Four Apples ripe in July and August: Beauty of Bath (Cooling's), Juneating Red, Juneating White, fruit of this one to be eaten from the tree, as it will not keep; and Irish Peach—all of these do well on the Paradise stock. August and September varieties of Apples: Early Harvest, Grand Sultan, Kerry Pippin, Yellow Ingeatree, Lady Sudeley, Williams' Favourite—these are also good on the Paradise stock. October, November, and December Apples: Pitmaston Pine, Golden Reinette, Ribston and Cox's Orange Pippin, Cornish Aromatic, Jennet Moyle. Later varieties, Ashmead's Kernel, Brownlee's Russet, *King of Tomkins Country, Old Nonpareil, Duke of Devonshire, *Melton Apple, *Northern Spy, Adams' Pearmain, Syke House Russet and Scarlet Golden Pippin, *Reinette du Canada. The above include several varieties which ordinarily do not succeed out-of-doors, except on a warm wall, but come of good quality under glass. These are marked with an asterisk. The varieties of Plums may consist of Early Mirabelle, Golden Esperen, De Montford, Reine Claude de Bavay, Coe's Golden Drop, Jefferson, Kirke's, Denniston's Superb, earlier than Green Gage by nearly two weeks; Green Gage, and Reine Claude de Count Athems—these are dessert Plums. Kitchen vares, may be the following:—Denbigh, Diamond, Mitchelson's, Pond's Seedling, Victoria, Prince Engelbert (an early Plum), Wyedale (very late). The size of pots used may vary from 10 to 12 or 15 inches, according to size of roots, but in a usual way the first size is sufficiently large to begin with. Apricots succeed very well under orchard-house treatment. In all cases, the soil employed should be rich pasture-loam chiefly, and it should be rammed tightly into the pot. See that the drainage is good.

PLANTS FOR FLOWERING IN THE WINTER: G. P. Had you read the Calendarial notes of "Plants under Glass" in our last issue, you would have observed that Mignonette is the name of a variety of *Rosa polyantha*, and not the sweet-smelling herb. Moreover, all good gardeners

know that if they would have well-expanded trusses, and a good succession of them on their zonal Pelargoniums, a temperature of 50° to 55° is necessary—in the cold greenhouse the plants blooming but poorly. The Salvias are the better for a little more warmth than the greenhouse affords; and so with the other things you name. Linum trigynum will certainly not do much good in the greenhouse during the winter, although it may be a suitable place for it in the summer.

RUST ON PLANTS: *Constant Reader.* The name Malmaison alone is too vague. Are the plants Carnations of the variety Souvenir de la Malmaison, or Roses of that name? If the former, and they are affected with large round light brown spots on the foliage (*Septoria dianthi*), throw them away—there is no known cure. If it be orange rust on the Rose, spray with sulphate of copper, or cut them off and burn at once.

SULPHUR AND MEALY-BUG: *A.* If you burn sulphur in the houses at any season the trees would suffer greatly, and perhaps perish. Try a winter dressing of Gishurst's Compound Soap, at the rate of 4 oz. to the gallon of water. For Peach trees in houses, the application should be at dead of winter, or, at any rate, before any movement takes place in the buds. Shovel out the upper crust of the border, and as a further preventive of attack, limewash the walls, going below the level of the soil, and wash other surfaces with soap-suds. You will find clear soot-water used in syringing the trees to have a deterrent effect.

TWO-FACED DAHLIA: *J. Day.* Not so uncommon as you suppose; nor quite so objectionable as persons one meets suffering from same malformation. Hope there are no gardeners so affected. (Fruits next week.)

VIOLETS IN COLD FRAMES IN LONDON: *Cigarette.* Violets, either under glass or out-of-doors, are rarely now worth cultivating in London, the fogs, blacks, and smoky atmosphere killing them in a season or two. It was wrong practice to plant out the old plants in the late spring, the rooted offsets should have been chosen for raising plants to flower in the winter. Your plants having had seed-vessels upon them is proof that they flowered during the time they were in the open ground. The flowers that produce seed are often inconspicuous. Provided the conditions are suitable, Violets can be grown in pots in a greenhouse, but it is then desirable to retain four or five of the summer runners which the offsets always put forth in May, pegging them down, but not letting them or the mother plant push out other runners. They must have plenty of water in dry weather, and a slight manurial mulch is good for them, as is weak manure-water. In September or October the mother plants, and the rooted runners attached, may be lifted, with balls of soil, and put into large pots.

COMMUNICATIONS RECEIVED.—H. E.—Sutton & Sons.—G. R.—N. A. K.—M. Lemoine, Nancy.—Baron Von Mueller.—M. D.—C. de B., Lierre.—W. N., Johannesburg.—J. B.—C. Curtis, Penang.—W. C. L.—G. B.—J. Rashleigh.—J. Bunting.—T. Turton.—Farmers Friends and Foes.—W. Bull.—L. L., Brussels.—R. Warrington (with thanks).—State Agricultural College, Colorado.—W. G. S.—H. C.—M. C.—D. K.—Subscriber.—J. Higgins.—W. C. L.—J. D.—M. T.—W. D.—H. D.—J. C.—Pioneer.—W. H. B.—W. M.—C. T.—J. T., Hong Kong.—G. S.—M. C. C.

FRUITS RECEIVED.—T. D.—J. W. B.—Underhill.—J. F. P.—J. H.—J. F.—J. L.—S. L.—A. J.—J. D.—F. S.—A. Y.—A. Chapman.—H. T.—Subscriber.

SPECIMENS RECEIVED.—H. E.—W. C. L., Albany, many thanks, next week.—T. C.—R. H. G.—J. E., &c.

DIED.—On the 12th inst., at Stoneydeep House, HERBERT EDWARD CHILD BEALE, eldest son of E. J. and S. J. Beale.

— On the 7th inst., at 14, Addison Crescent, Kensington, Mr. WILLIAM YATES DRAPER, aged 60, head of the firm of Messrs. J. W. Draper & Son, Covent Garden Salesmen.

CONTINUED INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

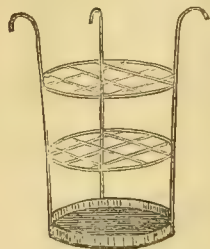
IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

THE 'MARTIN' FLOWER RACK.

(PATENT.)



For regulating the position of Flowers in Vases, &c., and Exhibiting them to the best advantage.

PRICE:—

1½ in. 2 in. 2½ in. diameter,
6s. 9s. 12s. per dozen.

Sole Makers:—

CORRY & CO., Ltd.,
13, 15, & 16, FINSBURY ST., E.C.

PICTURESQUE NATURALISTIC ROCK FORMATION,

FOR
WINTER GARDENS AND
FERNERIES;
WATERFALLS,
STREAMS, LAKES,
&c.
As at Earl's Court Fernery Cascades, by us.
PULHAM & SON, 60, Finsbury Square, E.C.
As by us at Imperial Institute Gardens.
VASES, FOUNTAINS, KERBING, BALUSTRADES, TERRACES, &c., IN STONE-LIKE AND RED
TERRA COTTA.
Durability Guaranteed.

ANDERSON'S RUSSIA MATS

Are the Best and Cheapest.

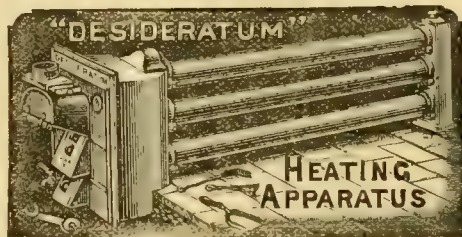
RAFFIA and CUBA BAST. GREENHOUSE SHADINGS
SEED BAGS and SACKS.

GARDEN SUNDRIES OF EVERY KIND.
Illustrated CATALOGUE post-free on application.

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For GREENHOUSES and OTHER BUILDINGS.
CATALOGUE AND ESTIMATES FREE.

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SEND FOR A
PRICE LIST
from the Largest Manufacturer in the Trade.

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BARB WIRE.

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ON APPLICATION TO
THE LONGFORD WIRE CO.
(LIMITED).
WARRINGTON.

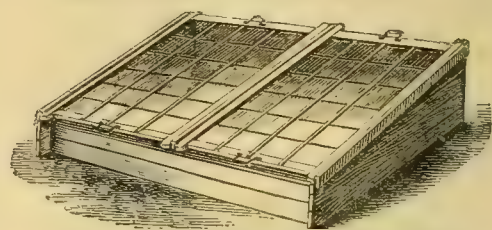


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Patronised by 20,000 of the Nobility, Gentry, and Clergy, for all kinds of
OUTDOOR WORK, CONSERVATORIES,
Greenhouses, Frames, &c.
1 Cwt., and Oil Mixture, Free to all Stations.
Liquid Non-Poisonous Paint for Inside of Conservatories, &c.
Prices, Patterns, and Testimonials, Post-free.
GROVE WORKS, LOMBARD ROAD, BATTERSEA,
LONDON, S.W.;
and BACHELOR'S WALK, DUBLIN.

GREAT REDUCTION IN FRAMES

OUR WELL-KNOWN MAKE.



PORTABLE CUCUMBER FRAMES.

These Frames are made of the Best Materials, and can be put together and taken apart in a few minutes by any one.

Sizes and Prices, Glazed and Painted.		£	s.	d.
1-light, 4 ft. by 6 ft...	CASH	2	0	0
2 " 8 ft. by 6 ft...	PRICES,	3	0	0
3 " 12 ft. by 6 ft...	CARRIAGE	4	2	6
4 " 16 ft. by 6 ft...	PAID.	5	5	0
5 " 20 ft. by 6 ft...		6	7	6
6 " 24 ft. by 6 ft...		7	10	0

Larger sizes at proportionate prices.

R. HALLIDAY & CO.,

ROYAL HORTICULTURAL WORKS,

MIDDLETON, MANCHESTER.

London Agent, Mr. H. SKELTON, Seedsman, &c., 2, Holloway Rd., N.



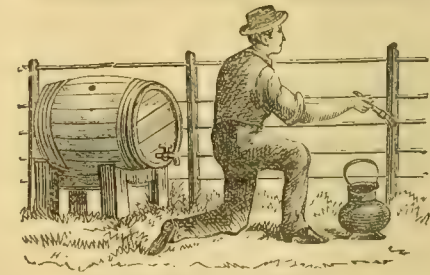
12 in. and 15 in. FOREIGN of above sizes, in boxes of 100 feet & 200 feet super
ENGLISH Glass, cut to buyers' sizes, at lowest prices
delivered free & sound in the country, in quantity.

LEADED LIGHTS
FOR CONSERVATORIES & PRIVATE HOUSES

GEORGE FARMILOE & SONS
LEAD, GLASS, OIL, and COLOUR MERCHANTS,
74 & 81 JOHN STREET, WEST SMITHFIELD, LONDON, E.C.
Stock lists and prices on application. Please quote Chronicle.

HILL & SMITH'S BLACK VARNISH

for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost.

Used in all the London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer. Price 1s. 6d. per gallon at the manufactory, or carriage paid to any railway station, 1s. 8d. per gal. in casks of 36, 18, or 9 gals.

Every Cask bears the above
CAUTION.—Registered Trade Mark. Beware of cheap imitations.

HILL & SMITH,

Brierley Ironworks, Dudley;
118, Queen Victoria Street, London, E.C.
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WARE and SONS' FLOWER POTS

ARE THE BEST.
THE SUSSEX POTTERY WORKS, UCKFIELD.
Quotations given for quantities. Carriage paid to any
The Best Railway Station. are Cheapest.
SAMPLES and LISTS FREE. Crates packed.



THOMAS GREEN & SON, LTD.,

LEEDS and LONDON,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered

HOT-WATER BOILERS,

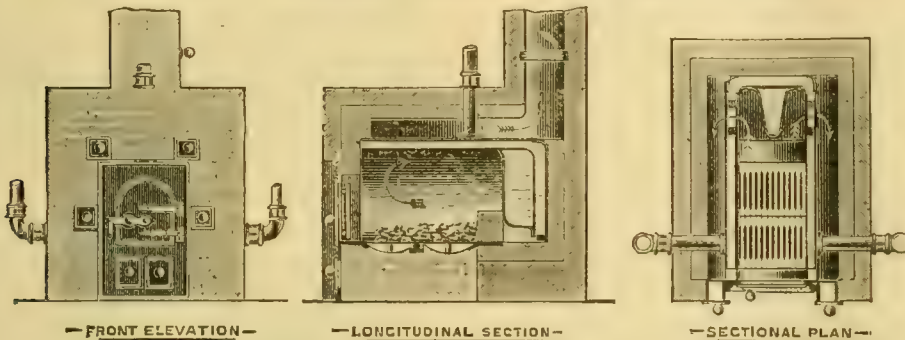
Others with TUBES, SHELVES, & HOLLOW or ORDINARY CAST-IRON GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

MUNICIPAL PATTERN BOILER, THE BEST EXTANT.



The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

SIZES AND PRICES.

M B 1	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep	Calculated to	1000 ft.	Price £15 0 0
M B 2	4 0 " by 2 0 " by 2 0 "	heat 4-in. piping	1280	" 21 0 0
M B 3	5 0 " by 2 3 " by 2 6 "	as follows:—	2200	" 32 0 0
M B 4	6 6 " by 3 0 " by 3 0 "		4000	" 60 0 0
M B 5	8 6 " by 4 0 " by 3 9 "		7000	" 85 0 0

SPECIAL BOILERS made to suit all purposes and requirements, and Estimates given for HEATING APPARATUS.

We make Boilers from £3 10s.

WHEN WRITING FOR PRICE LISTS, PLEASE STATE APPROXIMATE REQUIREMENTS.

OUR PRODUCTIONS MAY BE OBTAINED FROM THE LEADING MERCHANTS, IRONMONGERS and SEEDSMEN, or DIRECT FROM

THOMAS GREEN & SON, LTD.,
SMITHFIELD IRONWORKS, LEEDS; and SURREY WORKS, LONDON.

HUNDREDS OF REFERENCES CAN BE GIVEN IF REQUIRED.

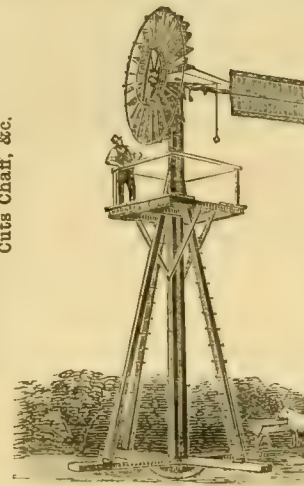
THE AUTOMATIC DAMPER.

ECONOMY of FUEL and LABOUR.
REGULARITY OF TEMPERATURE.

ROYAL HORT. SOCIETY'S SILVER MEDAL.
Numerous Testimonials.
97, FLEET STREET, E.C.

ROBERT WARNER & CO.'S WINDMILLS.

Saves Coal, Pumps Water, Grinds Corn,
Cuts Chaff, &c.



Supports can be made in Teak, Iron, or
Steel, for Hot Climates.

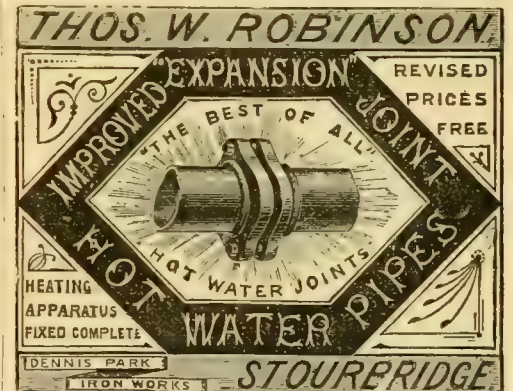
ONE OF THESE MILLS WAS ERECTED AT THE ROYAL
AGRICULTURAL SHOW, CHESTER.

Prices from £25, including Pump and Timber Supports.

May 27, 1893. The Dell, Englefield Green, Surrey.
ROBERT WARNER & Co., Engineers, 27, Jewin Crescent, E.C.
Dear Sirs,—It affords me much pleasure to inform you the 25 ft. Annular Sail Windmill, on 40 feet timbers, working a set of 3 in. x 9 in. stroke treble pumps, that you fixed here for Baron Schröder, is giving very great satisfaction, pumping the water through 4,224 feet of pipe, to a vertical height of about 80 feet. I must also express my thorough appreciation of the manner in which the whole of the work has been so successfully carried out.—Yours faithfully,

H. BALLANTINE, Head Gardener to Baron Schröder.
We have a similar Mill and set of Pumps in hand for Lord Northbourne.

NUMEROUS OTHER TESTIMONIALS ON APPLICATION TO
27, JEWIN CRESCENT, CRIPPLEGATE, LONDON, E.C.
Engineering Works, WALTON-ON-THE-NAZE, ESSEX.



HEATING! HEATING!! HEATING!!!

THE THAMES BANK IRON COMPANY

Undertake the complete erection of HEATING APPARATUS for GREENHOUSES, OFFICES, PUBLIC BUILDINGS, &c. Have the largest stock of BOILERS, PIPES, and CONNECTIONS in the Trade to select from, and invite inspection of same.

BOILERS of the latest and most approved class, including the

Patent HORIZONTAL TUBULAR, with WATER BARS; CAST-IRON SADDLE, with WATERWAY-END, &c.;
VENTILATING GEAR AND VALVES.

AWARDED THE ONLY GOLD MEDAL at the INTERNATIONAL HORTICULTURAL EXHIBITION, 1892, for HOT-WATER APPLIANCES.

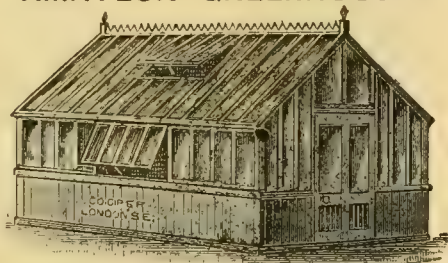
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Telegraphic Address—"HOT-WATER, London." Telephone No. 4763.

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Illustrated List Post Free 500 Houses in Stock to Select from. The Largest Steam Horticultural Works in the World. Inspection Invited.

AMATEUR GREENHOUSES.

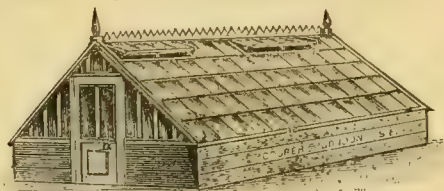


This illustration is an exact copy of my Amateur Span-roofed Greenhouses which are made of well-seasoned red deal. Complete with ventilators, Irons for opening, Staging, Glass, &c. Made in Sections, so that they may be erected by any gardener or handy-man in a few hours. Simply screwed together. Any size made. For Price of Lean-to, see List.

Long.	Wide.	High.	4ft.	to eaves...	On Rail.	Complete within 20 miles.
7ft.	5ft.	7ft.	4ft.	...	£2 15 0	£1 5 0
8ft.	5ft.	7ft.	4ft.	...	3 10 0	5 0 0
9ft.	6ft.	7ft.	3in. 4ft.	...	4 0 0	5 10 0
10ft.	7ft.	7ft.	6in. 4ft.	...	5 0 0	6 15 0
12ft.	8ft.	8ft.	5ft.	...	6 0 0	8 0 0
15ft.	10ft.	8ft.	6in. 5ft.	...	8 10 0	12 0 0
20ft.	10ft.	9ft.	5ft. 6in.	...	12 0 0	16 0 0
25ft.	10ft.	9ft.	5ft. 6in.	...	17 0 0	22 0 0
50ft.	10ft.	9ft.	5ft. 6in.	...	30 0 0	40 0 0
100ft.	10ft.	9ft.	5ft. 6in.	...	50 0 0	70 0 0

Deduct 10 per cent. if required for brickwork.

AMATEUR FORCING HOUSE.



The utility of this house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request, but almost hitherto unknown. Send for List, post free.

CUCUMBER FRAMES.



These frames are 24 in. high at back, 13 in. at front, and are made of 1 in. tongued and grooved boards. The lights are 2 in. thick, glazed with good 15oz glass, nailed and bedded in good oil putty, painted three coats, handles to sashes, and put on rail at the following sizes and prices: One-light Frames, 4ft. by 3ft., 18s.; ditto, 6ft. by 4ft., £1 10s.; Two-light Frames, 4ft. by 4ft., £1 12s.; ditto, 8ft. by 6ft., £2 14s.; Three-light Frames, 12ft. by 6ft., £3 15s. For other sizes and prices see Illustrated Lists, free. SEND FOR LIST, POST-FREE.

POULTRY HOUSES.



Well and substantially constructed, warranted waterproof, complete with door, ventilator, and slide, from 20s.

5ft. by 4ft.	25s.
6ft. by 4ft.	30s.
7ft. by 5ft.	34s.
9ft. by 6ft.	42s.

SEND FOR LIST.

GARDEN HAND FRAMES.

These Frames will be found to be very useful for protecting plants, seeds, slips, and cuttings during the spring, which, if left uncovered would probably fall victims to the extreme cold so prevalent in this country during that season. Z no open tops, with glass cut to sizes, and zinc clips for glazing same.

Size	Frames only.	Frames and zinc clips.
12in. by 14in.	7 6	4s. 6d. each.
14in. by 14in.	8 0	5 0
16in. by 16in.	9 0	5 6
18in. by 18in.	10 0	6 0
20in. by 20in.	11 0	6 6
22in. by 22in.	12 0	7 0
24in. by 24in.	13 0	7 6

SPECIAL NOTICE

Owing to the great increasing demand for my Amateur Houses every autumn, and having to refuse so many orders last season through customers not booking their orders early, but leaving them until the frost sets in, I have decided to allow a Special Discount of 5 per cent. off all goods as below to all customers booking their Orders previous to Oct. 23. Please note that on no account will orders be booked after that date under full prices.

Illustrated List Post-free.

GLASS. — GLASS. — GLASS.

Free on Rail in London. Packages included.

Size	Price
15-oz., 100ft.	1's 6d.
4ths	8s. 6d.
3rds	9s. 6d.
10,000 BOXES TO SELECT FROM.	12s. 6d.

The following is a list of sizes always in stock:—8 by 6, 9 by 7, 10 by 8, 12 by 8, 12 by 9, 13 by 9, 11 by 10, 12 by 10, 13 by 10, 14 by 10, 13 by 11, 18 by 11, 14 by 12, 16 by 12, 18 by 12, 20 by 12, 17 by 13, 20 by 13, 16 by 14, 18 by 14, 20 by 14, 22 by 14, 20 by 15, 20 by 16, 24 by 16, 20 by 18, 24 by 18. Glass cut to any size required: 15 oz. 1½d. per foot; 21-oz., 2½d. per foot. Large sizes, for cutting up, 15-oz. per case, 300 feet, 25s.; 21-oz., per case, 200 feet, 25s. All glass is cut and packed in own warehouses. Quality of glass and careful packing guaranteed. Special quotations given for large quantities. Have cash estimate from me before ordering elsewhere. PUTTY, prepared especially for Greenhouse work: best, 7s. per cwt.; 2nds, 6s. 6d. per cwt.; packages, 6d. per cwt. PAINT, quality guaranteed: 7 lb., 3s.; 14 lb., 5s. 6d.; 28 lb., 10s.; 56 lb., 18s.; per cwt. 34s. Glass, Special Line, 1250 200ft. boxes, best 21-oz., 9 by 7, 16s. per box, to clear.

MANURES, PEATS, SAND, FERTILISERS, ETC.

1 lb. tins Fertiliser, 4d.	£0 3 6 per dozen.
1 lb. tins Sunshade, 5d.	0 5 0
Special offer to Nursermen and the Trade:—144 tins Fertiliser and 144 tins Sunshade	3 0 0
Cocoa nut Fibre Refuse	0 0 8 per sack.
Silver Sand, coarse or fine (2 cwt.)	0 2 3
Best Orchid Peat	0 3 0
„ Rhododendron Peat	0 1 6
„ Brown Fibrous Peat	0 1 6
„ General Peat...	0 1 6
„ Loose Peat	0 1 6
„ Surrey Loam	0 1 6
General Potting Compost	0 1 3
Fern Compost	0 1 3
Bulb Compost	0 1 3
Leaf Soil, well decayed	0 1 6
Pure Wood Charcoal	0 2 6
Best Peruvian Guano	0 0 6 per tin.
„ Lawn Sand	0 0 6
Fertiliser for Farming and Market Gardening (in 2 cwt. sacks)	0 10 0 per sack.
Worm Destroyer	0 0 6 per tin.
Ins. eticide	0 0 6
Tobacco Paper, 6d. per lb.	2 5 0 per cwt.
Wonderful New Mushroom Spawn	0 2 6 per bush
All sacks and bags free. Send for List, post free.	

HORTICULTURAL TIMBER.

WELL-SEASONED RED and YELLOW DEAL.

SASHBARS, 1½ in., 3s.; 2 in., 3s. 9d.; 2½ in., 5s.; 3 in., 6s. 6d. per 100 ft. run.

MATCH BOARDS, 5, 5s. 6d. per square; 1 in., 9s. 6d. per square.

FLOOR BOARDS, 1 in., 9s. per square.

FEATHER EDGE BOARD, ¾ by 6, 6s. 6d. per square.

DEALS, 3 by 11, Yellow, 4d.; 3 by 9, 3½d.; 3 by 7, 2d.; 2½ by 7, 1½d.; 2 by 7, 1¼d.; 2 by 6, 1d.

CUTTING FLATING, 9d. per 100 ft.; Deeping, 2s. 3d. per dozen 12 ft.

SLATING BATTENS, ¾ by 2, 1s. 3d. per 100 ft.; ¾ by 1, 7d. per 100 ft.

HALF GLASS DOORS, 5 ft. 6 by 2 ft. 6, 6s. each; 6 ft. by 2 ft. 6, 7s.; Marginal Lights, 6 ft. 6 by 2 ft. 6, 10s.

VENTILATORS, TOP or SIDE, 2 ft. 6 by 2 ft. 2s. each.

FINIALS, MACHINE TURNED, 12 in. high, 6d. each; 4s. 6d. per dozen.

Open, s. d.

12 ft. by 1½ ft. ... 2 0

12 ft. by 2 ft. ... 3 0

12 ft. by 2½ ft. ... 3 6

12 ft. by 3 ft. ... 4 0

12 ft. by 3½ ft. ... 4 6

12 ft. by 4 ft. ... 5 6

12 ft. by 5 ft. ... 6 6

12 ft. by 6 ft. ... 8 0

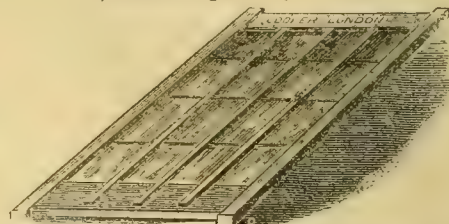
MATERIALS for SPAN-ROOF CUCUMBER-HOUSE, 100 ft. by 12 ft., £9 10s., best Red Deal, all planed, rabbeted, &c. ready for use. Send for Specification.

The above prices are for good sound Yellow and Red Deal. For large quantities special low prices will be quoted.

All Timber consigned at the Cheap Timber Rate to all parts of the country. Send for TIMBER LIST.

GARDEN LIGHTS.

3,000 Glazed Lights always in Stock.



These Lights are well mortised and jointed together, and made in a good workmanlike manner, and are well worthy of inspection. Frame-work made of 2½ in. styles, and properly rabbeted for the glass, with good 2 in. sashbars. The Glazed Lights are nailed and bedded in good oil putty.

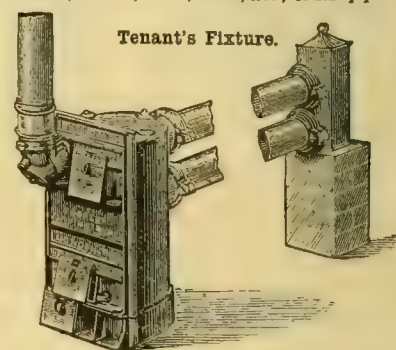
Size	Price
3ft. by 2ft., painted and glazed	5 0
4ft. by 3ft., " " "	6 6
6ft. by 4ft., " " "	9 0
6 ft. by 4 ft., unglazed lights	3 6

Special quotations for large quantities.

"INVINCIBLE" HOT-WATER APPARATUS.

MOST EFFICIENT AND CHEAPEST IN EXISTENCE.

Made in six sizes: No. 1, to drive 75ft., £1 15s.; No. 2, 10 ft., £1; No. 3, 200ft., £5 10s.; No. 4, 275ft., £7 10s.; No. 5, 375ft., £8 10s.; No. 6, 500ft., £10; of 4 in. pipes.



Tenant's Fixture.

Requires no sunk stokeyhole and no brick setting. Will last all night without attention. Will burn house-cinders, therefore costs next to nothing for fuel. Anyone can fix it. A child can stoke it. Success guaranteed. Cost of complete Apparatus for Greenhouses, with 4-inch pipes, flow and return along one side cut and fitted; so that if the internal measurement of the Greenhouse is given, the Apparatus will be sent completely ready for fixing, an advantage which will be appreciated by all. Securely and carefully packed on rail at the following respective prices:—7ft. by 5ft., £2 15s.; 9ft. by 6ft., £3; 10ft. by 7ft., £3; 12ft. by 8ft., £3 5s.; 15ft. by 10ft., £4 5s.; 20ft. by 10ft., £5 5s.; 25ft. by 10ft., £5 5s.

COOPER'S HYGIENIC HEATER.

Burning Paraffin or Gas without Smoke or Smell.

For Illustration see List.

PRICES—

No. 0 heats House 7 by 5ft., consumes ¼ pt. of oil in 10 hours, 16s.; extra for gas 2s.

No. 1 heats House 9 by 6ft., consumes 1 pt. of oil in 10 hours, £1 4s.; extra for gas 2s.

No. 2 heats House 12 by 8ft., consumes 1½ pt. of oil in 10 hrs., £1 16s.; extra for gas 3s.

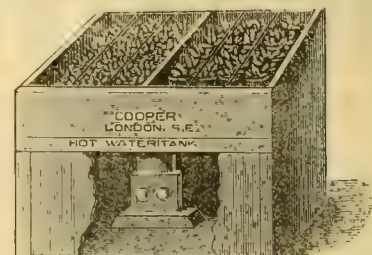
No. 3 heats House 15 by 10ft., consumes 2 pt. of oil in 10 hrs., £2 12s.; extra for gas 5s.

No. 4 heats House 20 by 10ft., consumes 2 pt. of oil in 10 hrs., £2 16s.; extra for gas 6s.

No. 5 heats House 25 by 10ft., consumes 4 pt. of oil in 10 hrs., £3 4s.; extra for gas 12s.

Nos. 4 and 5 are special high power Heaters, with good powerful Burners; No. 4 with one 4 in. Flat Wick Burner; and No. 5 with two 4 in. Flat Wick Burners.

THE RAPID PROPAGATOR.



The only perfect Propagator for raising plants from seeds, slips, or cuttings. 1 ft., 8 in. by 1 ft. 6 in., £1. 2 ft. 6 in. by 1 ft. 10 in., £1 4s.; 4 ft. by 2 ft., £2 8s.

Found at Last!

THE "PERFECT" FUMIGATOR (Registered); and "A 1" TOBACCO CLOTH, specially prepared.

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Quite SAFE, guaranteed NOT TO FLARE, and no fear of scorching the most tender plants, as the SMOKE IS COOL. NO LOSS OF TIME, as when once started, the Machine is SELF-ACTING.

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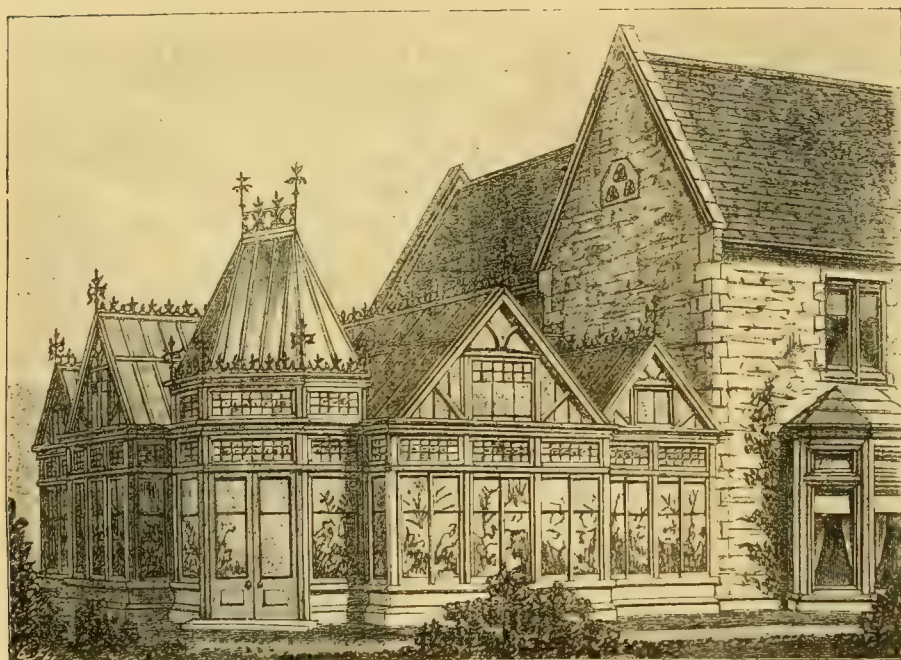
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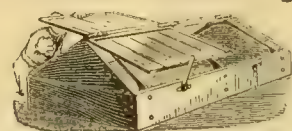
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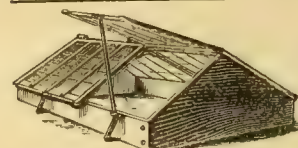


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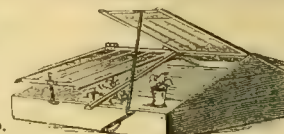
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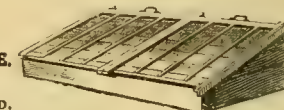
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2757.

No. 357.—VOL. XIV. { THIRD
SERIES. }

SATURDAY, OCTOBER 28, 1893.

{ Regt. as a Newspaper. } PRICE 3d.
POST-FREE, 3½d.

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"GARDENERS' CHRONICLE."

Continued Increase in the Circulation.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per Cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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To the Trade.
IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order.
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ENORMOUS SALE OF FRUIT-TREES.

Splendidly grown, and fit for immediate planting. Important to Market Gardeners, Fruit Growers, and Nurserymen.

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MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Smith & Son to **SELL** by AUCTION, on the Premises, The Nurseries, West Drayton, Middlesex (ten minutes' walk from West Drayton Station, G.W.R.), on **TUESDAY** and **WEDNESDAY** NEXT, October 31 and Nov. 1, at 12 o'clock precisely each day—

62,000 FRUIT TREES,

Specially grown for Market Gardeners, Fruit Growers, &c., and comprising the best and most profitable Market Sorts, including—

24,000 HALF-STANDARD APPLES,

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25,000 HALF STANDARD PLUMS,

Comprising Victoria, Blue Gage, Grand Duke, Pershore, Rivers' Early Prolific, Czar, Sultan, New Orleans, Cox's Emperor, Gisborne, Pond's Seedling, Autumn Compôt, White Magnum Bonum, &c.

4000 STANDARD PLUMS,

Including Victoria, Gisborne, Prince of Wales, Pershore, and others.

3580 HALF-STANDARD PEARS,

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4000 CLUSTER DAMSONS, Standards and Half-Standards.

40,000 CURRANTS, Black Nappes.

30,000 " Red Cluster.

2,000 GOOSEBERRIES, Lancashire Lad.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, of Messrs. J. SMITH AND SON; SIPSOM, Harmondsworth, Slough; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The Auctioneers desire to call special attention to this unusually important Sale as it is so seldom such an opportunity presents itself for securing well-grown Fruit Trees in large quantities and of such sorts as Messrs. Smith & Son find from their long and extensive experience to be best adapted for Market Purposes. Messrs. Protheroe & Morris can with confidence recommend intending purchasers to attend the Sale, as the catalogue comprises the most extensive and finest lot of Fruit Trees they have ever had the pleasure of offering by Auction.

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On view morning of Sale, and Catalogues had.

Bagshot.—Preliminary Notice.

IMPORTANT THREE DAYS' UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, which has been carefully prepared for removal, especially selected for Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, on **TUESDAY**, November 21, and **TWO FOLLOWING DAYS**, several acres of NURSERY STOCK, grown to the greatest perfection, and exceedingly well rooted, including a fine lot of named Rhododendrons, Green and Variegated Hollies, Spruce Firs, and other Stock. Fuller particulars will appear.

Uxbridge.—Expiration of Lease.

Important TWO DAYS' CLEARANCE SALE of about 4 Acres of NURSERY STOCK by order of Mr. Charles Turner, in consequence of the Lease of this portion of the Land being about to expire.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, The Nurseries, Uxbridge, on **MONDAY** and **TUESDAY**, November 13 and 14, at 12 o'clock, the whole of the unusually well-grown NURSERY STOCK on this portion of the Land, comprising Limes, Chestnuts, and other fine Avenue Trees; Aucubas, Laurels, Yews, Hollies, Box (Tree), Pinus, Cupressus, Thuia, Poplars, Laburnums, Mountain Ash, and a large assortment of splendidly-grown Conifers.

Further particulars will appear.

Friday Next. Imported and Established Orchids.

MESSRS. PROTHEROE AND MORRIS will **SELL** as above by AUCTION, at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., on **FRIDAY** NEXT, November 3, at 12 o'clock.

On view morning of Sale, and Catalogues had.

TOTTENHAM, N.

ANNUAL SALE.

Adjoining the Tottenham Hale Station, Great Eastern Main Line.

IMPORTANT SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, N., adjoining the Tottenham Hale Station, G.E.R., on **TUESDAY**, November 7, at 11 o'clock precisely, in consequence of the large number of lots, by order of Mr. Thomas Ware, an enormous quantity of well-grown

NURSERY STOCK,

comprising—

25,000 NAMED CARNATIONS, PICOTEEES, TREE CARNATIONS, &c.

Consisting of all the finest varieties, including Germania, the best yellow; Mrs. Reynolds Hole, salmon-apricot; Mrs. Frank Watts, the best white; Redbraes, purple-edged Picotee; Sir Beauchamp Seymour, orange-buff; Gloire de Nancy, large white clove; Lord Byron, brilliant scarlet; Alice Ayres, pure white, striped carmine; Princess Alice, rich bright salmon; Fireman, rich bright scarlet; and many other first-class varieties in the finest possible condition. Also

5000 NEW CARNATIONS,

Consisting of Florence Emity Thoday, new white; Danger, new scarlet, a grand market variety; Mrs. Reiffel, glowing apricot; Horace, a brilliant rich scarlet; and others.

10,000 HER MAJESTY PINKS, extra large clumps;

Thousands of Crimson and other Malmesbury CARNATIONS;

20,000 HOLLYHOCKS, selected to colour;

Pyrethrums, Phlox, Peonies, all of the best varieties, both

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250,000 finest Berlin Crown LILY OF THE VALLEY,

25,000 CLEMATIS,

And other Climbers, fine strong stuff, including Jackmanni, Jackmanni superba, Countess of Lovelace, Star of India, Anderson, Henryi, Duchess of Edinburgh, Gipsy Queen, and other first-class varieties; also 2500 Ampelopsis Veitchi, 3 to 4 and 4 to 5 feet; 500 Ampelopsis Hederacea, 500 Ampelopsis hirsuta, 4 to 5 feet; Hoggi, 3 feet; Humifolia, 3 to 4 feet; and Veitchi purpurea, 3 to 4 feet; Escalonia Ingrami, 3 feet; 100 Bigonias, of sorts; 500 Hedera Maderiense variegata, 3 to 4 feet; 1000 Emerald Gem, 3000 Ivies in variety, including H. Donerallense, 3 to 4 feet; H. Taurica, 3 to 4 feet; H. Cavendishii variegata, 3 feet; H. latifolia maculata, 5 feet; H. Chrysophila; H. marginata rubra, 3 feet; H. marmorata minor, 3 to 4 feet; and many other varieties; many thousands of Akebia quinata, Cotoneaster Simmondsi, strong, 2 feet; Plumbago of sorts; Cydonia japonica and Maulei, fine stuff, 2 feet; Jasminum nudiflorum, Jasminum nudiflorum aureum, 3 feet; Lonicera in great variety, brachypoda, 3 feet; Crataegus Lelandi, 2½ feet, well berried; Passiflora corulea and Constance Elliott, very strong stuff, 4 feet; Habrothamnus coccinea, 2½ to 3 feet; and elegans, 2½ to 3 feet; and many other popular varieties.

100,000 SPIREA COMPACTA MULTIFLORA, S. japonica, Dielytra spectabilis, Clumps and Crowns Lily of the Valley, Spiraea Astilboides, S. palmata, S. palmata alba, Solomon's Seal, Helleborus, Calla (nana compacta, O. ethiopica, and many other first-class varieties;

100,000 SEAKALE, ASPARAGUS, and RHUBARB.

50,000 LILIES and NARCISSUS, extra fine home-grown; among these will be found extraordinary fine roots of Lilium Colchicum, L. Browni, L. Chalcedonicum, L. Humboldtii, the new Bloomerianum magnificum from Mexico, Lilium Harrisii, L. Martagon album, L. Pardalinum, L. Dalmaticum, L. Washingtonianum, L. speciosum album, L. rubrum and L. roseum, very fine bulbs; L. giganteum, and numbers of other rare and beautiful varieties;

ROSES, ORNAMENTAL TREES and SHRUBS.

A grand lot of Maréchal Neils, in 48-pots, 4 to 5 feet; in 32's, 8 to 9 feet; in 24-size pots, 12 to 14 feet; Gloire de Dijon, 6 to 8 feet, in pots; do. from ground, 3 to 4 feet, White Bank-sian, Common China, W. A. Richardson, fine stuff, 10 feet; and many others; Maiden's Blush, Lanei, Standard and Dwarf Roses in variety, including all the popular kinds; 2000 Veronica Traversi Buxifolia, carnosula, Cotoneaster, microphylla and Buxifolia, fine stuff, in pots; Cistus of sorts, 500 Olearia, Lombardy Poplars, fine stuff, 10 to 12 feet, well furnished; a grand lot of Aralia Sieboldi, 1000 Oval-leaved Privet, good stuff; American Blackberries, and many other useful varieties; THOUSANDS of HELLEBORUS and other choice Perennials, including Eulalia and other Ornamental Grasses; Everlasting Peas, Anemone japonica, several varieties; Sunflowers, Gaillardias, Poppies, Centaureas, Doronicums, Lychnis viscaria splendens plena, Campanulas, Rudbeckias, Yuccas, a grand COLLECTION of IRIS, fine strong clumps, including the best forcing varieties; Pumila of sorts, Obliensis of sorts, Sibirica of sorts, Florentina, the sweet-scented variety; Germanica, in great variety; Kempferi, and many others; Delphiniums, and hundreds of other important families too numerous to mention.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, Land and Estate Agents and Valuers, 67 and 68, Cheapside, E.C.

Tuesday, October 31.

SPECIAL SALE of HARDY PLANTS and BULBS, including 50,000 Chionodoxas, Galanthus, and others; thousands of choice Lilies, including Henryi, and other first-class varieties; 1000 Spiraea japonica multiflora and Sc. astilboides; a grand collection of Iris, including Her Majesty (new), Princess Alice (new), and numbers of Germanica, Sibirica, and other species; Carnations and Picotees, including the best new varieties, and the finest of the older kinds; thousands of Berlin crowns, and clumps of Lily of the Valley, Narcissus, and other Bulbs.

MESSRS. PROTHEROE AND MORRIS will **sell** the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **TUESDAY** NEXT, October 31, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Toddington Nurseries, Winchcombe, GLOUCESTERSHIRE.

IMPORTANT TWO DAYS' SALE of FRUIT TREES and other NURSERY STOCK, CARNATIONS, FERNS, and ROSES, by order of the Toddington Orchard Company, Limited, in Liquidation.

MESSRS. PROTHEROE AND MORRIS are instructed to **SELL** by AUCTION, on the Premises, as above, on **WEDNESDAY** and **THURSDAY**, November 8 and 9, at 1 o'clock precisely each day.

10,800 FRUIT TREES,

Standards, Half-standards, and Pyramids, mostly 3-yr. trees, consisting of 4700 Apples, and 3000 Pears, both including the leading kinds; 1600 Earleigh Damsons, Gisborne and Pershore Feathered Plums, 17,800 Black Currants, all Black Nappes, 2 and 3-yr. bushes; a large quantity of FOREST TREES and SHRUBS, amongst them Ash, Limes, Birch, Privet; 2400 Laurels, bushy plants, 2 to 3 feet; Araucarias and Wellingtonias; 3000 TREE CARNATIONS, in grand condition for winter blooming, and promising well for an abundance of flower, including Miss Joliffe, La Neige, Germania, and other well-known varieties; 250 MAIDENHAIR FERNS, 300 Gros Colmar and Alcante VINES, 7000 ROSES, mostly in pots, of the best sorts; Standard and Trained PEACHES and NECTARINES, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67, and 68, Cheapside, London, E.C.

N.B.—The Nurseries are situate seven miles from Ashchurch station (Midland), and eight from Evesham (Midland and G.W. Railway). Conveyances will meet certain trains at Ashchurch on the Sale Days, as noted in Catalogue.

Enfield Highway, N.—The Brimsdown Nurseries.

Adjoining the Brimsdown Station, G.E.R.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, on the Premises, as above, on **WEDNESDAY**, November 8, at 11 o'clock, by order of Mr. J. Maller, without reserve, a quantity of well-grown and useful NURSERY STOCK, consisting of Privet, Laurels, 2000 Specimen Aucubas, 2 to 4 ft. through; Irish Ivies, Virginian Creepers, Clematis flammula and Jackmanni in pots, Ampelopsis Veitchi, Standard, Half-Standard, and Dwarf Roses, good plants to name. Also a large assortment of STOVE and GREENHOUSE PLANTS, Solanums, Genistas, Ferns in variety, Crotons, Winter-blooming Heaths, including Hyemalis, gracilis, and others; Bouvardias, Gardenias, and other Flowering Plants; 1000 Intermediate Stocks, red and white, the best market strain, in 60-pots; Chrysanthemums, the best varieties to name, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday Next.

48 CAMELLIAS, fine plants; 24 ARAUCARIA EXCELSA, 100 AZALEA INDICA, 40 A. INDICA, 36 FICUS ELASTICA, 48 RHODODENDRONS, well set; 24 ASPIDISTRAS, 48 DRACÆNA INDIVISA, received direct from Belgium; also 40 lots of GREENHOUSE FERNS and PLANTS, ornamental STOVE PLANTS, Spiraea japonica, Lily of the Valley, L. lancifolium rubrum, English-grown Lilies, Narcissus, Carnations, Phlox, Freesias, Pinks, Clematis, and a fine assortment of Hardy Bulbs, Plants, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY** NEXT, October 30, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.

100 AZALEA MOLLIIS, 70 A. INDICA, LATANIAS, DRACÆNAS, ERICAS, &c., direct from Belgium; also HERBACEOUS PLANTS, CARNATIONS, and various HARDY BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY** NEXT, November 2, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Important to Fruit Growers and Market Gardeners.

EAST SHEEN.—TO BE SOLD, as a going concern, the LEASE of the valuable MARKET GARDEN and FRUIT LAND, comprising an area of about 45 acres, with capital Dwelling-House, Outbuildings, and several Glass Erections, heated by Hotwater Piping. The Land is in excellent state of cultivation, and is considered to be one of the best Market Gardens in the county.

Price and terms on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold SALES at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—
EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.
EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other Bulbs.
EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.
EVERY THURSDAY, at 11.30 A.M.—Azaleas, Camellias, Palms, Dracenas, and other Plants from Belgium; Roses, General Nursery Stock, Carnations, Dutch and French Bulbs.
EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.
EVERY THIRD THURSDAY, at 12 o'clock.—Established and Imported Orchids.

All Catalogues post free.

Messrs. JAMES AND BAXTER conduct Sales and Valuations of Nursery Stock, Live and Dead Farming Stock, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

Great Doods, Reigate, Surrey.

To ROSE GROWERS, HORTICULTURISTS, and Others.

MESSRS. JOHN LEES AND BURCHELL are instructed by Mrs. Waterlow to SELL by AUCTION, on the Premises, on THURSDAY, November 16, at 11 o'clock precisely, the important Stock of about 3000 EXHIBITION ROSE TREES, established by the late A. J. Waterlow, Esq., for many years one of the most successful exhibitors of Roses at the Crystal Palace and other Shows. Also STOVE and GREENHOUSE PLANTS, including 20 Camellias, 24 Azaleas, 200 Specimen Maidenhair, Farleyense, and other Ferns, Palms, Cytisus, Coronillas, Sempervivums, Variegated Hydrangeas, Gloxinias, Pancratiums, Dracenas, Dendrobiums, Coleus, Calanthes, Cyrtipediums, Chamaeuce, &c.; 500 Strawberry Plants, very choice sorts; 2 fine Orange Trees, 24 Pot Vines, Fruiting Canes, five dozen Fruiting and Succession Pines, Box, Aucuba, Flowering and other Shrubs, Ornamental Trees, &c.

May be viewed the day preceding the Sale. Catalogues may be obtained of Mr. J. BROWN, Head Gardener, Great Doods, Reigate; and of Messrs. JOHN LEES AND BURCHELL, Auctioneers and Land Agents, 17, Wool Exchange, Coleman Street, E.C., and Reigate, Surrey.

HIGHLY IMPORTANT NURSERY SALE, by AUCTION, at BELLBRAE NURSERIES, CUPAR, by Mr. WILLIAM WATT, on MONDAY and TUESDAY, November 6 and 7 next, owing to the natural Termination of his Leases, and the REMOVAL of his NURSERY BUSINESS to MIDDLEFIELD, comprising One of the Finest and Largest Selections of Forest Trees, Ornamental and Avenue Trees, Shrubs, Fruit Trees, Roses, &c., in great variety—all healthy, well fibred, and in excellent condition for removal to any climate, having been grown in exposed situations.

Sale to Commence each Day at 11 A.M. Catalogues will be Ready in a few days, and any information desired will be given on application to Mr. WATT, or the Auctioneers—Cupar, October 17, 1893. Messrs. LYON AND TURNBULL.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Monday Next.

A Consignment of ROSES, HYDRANGEAS, AZALEAS, VINCAS, HOLLY TREES, LILIUms, RHODODENDRONS, ORANGE TREES, and other PLANTS, from Holland.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, October 30.

On view morning of Sale, and Catalogues had.

Tuesday and Saturday Next.

TWO SPECIAL SALES OF DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY and SATURDAY NEXT, October 31 and November 4, at half-past 12 o'clock precisely, each day, a large Importation of BULBS from Holland, specially lotted to suit all buyers.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

Choice named Standard ROSES, CARNATIONS, PINKS, and other Border Plants; 30,000 LILY OF THE VALLEY Crowns, 2000 Clumps of SPIRÆA, 2000 South African TUBEROSES, LILIUm HARRISII, French Forcing BULBS, a Collection of Home-grown LILIUms, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 1.

On view morning of Sale, and Catalogues had.

To Horticulturists and Nurserymen.

FOR IMMEDIATE SALE, the land being required for other purposes, the Erection of EIGHT MODERN GLASSHOUSES, 900 feet run, 12 feet wide 4000 feet of 4-inch pipe, all connections, and one large Boiler—all recently erected. 500 Arums, and quantity of Seedlings ditto; 15 to 20,000 pots of various sizes; quantity of useful Boards, Battens, Stakes, Bamboos, and Raffia, &c.; Vine Eyes, Wire, &c. Will be Sold together or separately. Convenient distance from Town.—Apply to Paddock Nursery, Romford, Essex.

Ottershaw Nurseries, near Chertsey, Surrey.

SALE on MONDAY NEXT and TWO FOLLOWING DAYS.

MESSRS. WATERER AND SONS have received instructions from Messrs. Fletcher Brothers (in consequence of the land being required for Building purposes), to SELL by AUCTION, on Monday, October 30, 1893, and two following days, at 11 for 12 o'clock each day, the exceptionally well-grown NURSERY STOCK, in excellent condition for removal, comprising 8000 Choice Fruit Trees, Forest Trees, Standard and Dwarf Roses, Ornamental Evergreen Trees and Shrubs, including many fine Specimen Plants; 1000 Weymouth Pine, 1 to 10 feet; 1000 Caucasian Laurels, 50,000 Larch, 1 to 8 feet.

May be viewed seven days prior to Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at Chertsey, Weybridge Station, and Walton-on-Thames.

Preliminary Announcement.

To NURSERYMEN, FLORISTS, and OTHERS, in the matter of a Deed of Assignment.

Re REID AND BORNEMANN.

THE TRUSTEE begs to notify that he will shortly OFFER for SALE by TENDER the long LEASE-HOLD PREMISES known as The Nurseries, Trewsbury Road, Sydenham, S.E., occupied by the well-known firm of Messrs. Reid & Bornemann, and comprising about 4 acres of Ground, with five Glasshouses, well-built Office, and appurtenances. Also of the valuable STOCK of CHOICE PLANTS and GENERAL NURSERY STOCK.

Printed Particulars and Forms of Tender may be obtained of Messrs. PIGGOTT AND SON, Chartered Accountants, 3, 4, and 5, Queen Street, Cheapside, E.C.; or of Messrs. LANGHAMS, Solicitors, 10, Bartlett's Buildings, Holborn Circus, E.C.

LONDON, S.E.—MARKET NURSERY, 3 acres. Five capital Greenhouses 100 feet by 10 feet each, efficiently heated water from main, together with Iron Cottage, Stable, and Couch-house. The whole of the erections being the property of the Vendor. Lease 11 years unexpired, at Ground Rent of £12; lucrative home and local trade. Two minutes from station. Price, including utensils, Cob, Cart, &c. £100. Stock cleared.

Write to H. H., 33, Imperial Mansions, Oxford Street, W.

FOR SALE, at Dover, a NURSERY, consisting of 12,000 superficial feet of Glass Erections, numbering 12 Houses, well heated by 2500 feet of Hot-water Piping. Situated on a splendid sheltered south aspect, and has only been erected four years. The whole being walled in. Price for the Freehold and Houses £750. The Ground alone is worth £400. Part of the money can remain.

Apply, W. BINFIELD, Esq., 69, High Street, Dover.

FRUITERER'S AND GREENGROCER'S BUSINESS to be DISPOSED OF at a great sacrifice through ill health, in a flourishing sea-side town, South Coast. The low sum of £75 will be accepted for a quick sale. For particulars apply to T. HUMPHREY, Auctioneer, Tunbridge Wells.

NEW AND MAGNIFICENT CYPRIPEDIUM CHARLESWORTHII (ROLFE, N. SP.)

Exhibited and unanimously awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, and pronounced by every one to be the most beautiful and charming Cypripedium introduced, causing quite a sensation at the Drill Hall, on Tuesday, September 26, 1893.

The special feature of this novelty is the dorsal sepal, which is quite distinct in appearance and colour to any other known Cypripedium, which will render it exceptionally valuable to the hybridist.

The *Gardeners' Chronicle* says:—"There was a more than usually interesting show of Orchids, but by far the most novel and beautiful exhibit was a plant of Cypripedium Charlesworthii, Rolfe, n. sp., First-class Certificate, an entirely new species, imported by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and exhibited by them for the first time, the exhibit coming in for a great amount of attention and admiration. The plant in growth somewhat resembles C. Spicerianum, and the flowers, which are borne on scapes about 3 inches in height, are unlike any other known species. The beautiful flat, upper sepal is 2½ inches wide, broadly orbicular, white, tinged, and veined over its surface with light rosy-purple; the apex alone showing a white marbling. The lower sepals are about 1 inch broad, greenish-white. The petals, which resemble those of C. insigne, are plain-edged, over 1½ inch long, yellowish, tinged with brown; the lip also somewhat resembles that of the Sylhet form of C. insigne, and is similar in colour to the petals. The staminode is very singular, resembling pure white porcelain, the protuberance in the centre being conical in form, and not a single spur, as in C. insigne. It is an extraordinary and beautiful species."

The *Garden* says:—"A First-class Certificate awarded to Cypripedium Charlesworthii, Rolfe, a distinct and decidedly novel species, which cannot

be compared with any that we can call to mind. The plant is of dwarf habit, the flowers each having a remarkably fine dorsal sepal, extra large, measuring about 2½ inches each way; the colour a pale pink, suffused with purple, and having a lighter network towards the extremities; the petals are shaded with greenish-brown, so also is the pouch, which is rather small. A greater novelty amongst the species of the Slipper family has not been seen for a long time. From Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford."

The *Journal of Horticulture* says:—"A very remarkable introduction from the East Indies; it is a distinct and beautiful species, very dwarf, with long narrow leaves. The flower stem is only 3 to 4 inches long; the lip is short, green, heavily suffused with bronzy-brown, and the dorsal sepal is very noteworthy—it is broad and rounded, and the colouring is a beautiful soft rose, delicately veined; the staminode is pure white. A feature of the leafage are the rows of dots on the reverse side. The species is a great acquisition (First-class Certificate)."

The *Gardening World* says:—"An interesting collection of Orchids was exhibited by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, including a handsome new species, named Cypripedium Charlesworthii, from the East Indies."

In offering this great novelty, we beg to state that we are the sole importers of this plant. We shall be very pleased to quote size, price, and full particulars. Inspection cordially invited.

CHARLESWORTH, SHUTTLEWORTH & CO., Wilmer Road, HEATON, BRADFORD.

TO SEEDSMEN.—To be DISPOSED OF, in consequence of the death of the proprietor, an old-established FARM and GARDEN SEED BUSINESS, with a wide connection in a good Market Town in the Midlands, and on Two Railways. This is a rare chance for a desirable purchaser that does not often occur.—Apply to SEEDSMAN, Messrs. Hurst & Son, 152, Houndsditch, London, E.

FOR SALE, cheap, one No. 2 Patent, 9 ft. 6 in. HORIZONTAL BOILER (references to the Thames Bank Iron Co.), with Fittings complete. Brand new last December, never used and quite perfect. Full particulars given, and offers requested, to ENOCH WHITE AND SONS, Nurserymen, Bournemouth.

FOR ORCHIDS and GARDENERS to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

The Best Winter blooming Carnation.

MISS JOLIFFE IMPROVED.—Fine Stocky plants, per dozen, 2s.; 2nd size, 12s. "LOADSTONE" AND HELEN JULIET, School of Gardening, Hemel Hempstead, Herts.

100 BOXES of CRISTATA FERNS, at 2s. 6d. per box; 100 MAJOR FERNS, at 3s. per box. T. MATINGLY, 120, Church Road, Tottenham.

STRAWBERRY PLANTS, for Sale.—Strong rooted Sir Joseph Paxton, 10s. per 1000. JAS. WOOD, Knockholt, Sevenoaks, Kent.

5000 GOOSEBERRY CROWN BOB.—4-yr.; healthy, well-rooted stuff; good heads, and well upon the stem. 2s. per 1000.—WEBB AND BRAND (late Chater), Nurseries, Saffron Walden.

WHINHAM'S INDUSTRY GOOSEBERRY, the most profitable Gooseberry in cultivation. Strong 2-year old bushes, 2s. 9d. per dozen. THOMAS H. COLEMAN, Saffron Walden.

CHRYSA NTHEMUM Madame Desgranges and Mrs. Hawkins (yellow), exceedingly good, in 5-inch pots, from 8s. per dozen; in 6-inch pots, 9s. per dozen. Terms cash. G. LANGE, Hampton, Middlesex.

DOUBLE VIOLETS.—Comte de Brazza, Marie Louise, Lady Hume Campbell fine strong roots for forcing. The Trade supplied. W. H. DIVERS, Ketton Hall Gardens, Stamford.

PALMS, FERNS, &c.—FERNS in Variety.—ARALIAS and CYPERUS NATALENSIS in 48's, 6s. per dozen; LARGE A. CUNEATUS in 48's, 6s. and 7s. per dozen; PALMS in variety, and FICUS in 48's, 12s. per dozen; PALM, fine stuff, in large 60's, 5s. per dozen; FERNS and CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order. LANE AND MARTIN, 227, Brixton Road, London, S.W.

ALL GOODS DELIVERED FREE on board, London, Antwerp, Rotterdam. £ s. d.
LILUM HARRISII, 5-7 in. circ., per 1000 bulbs. 6 5 0
" 7-9 in. " " " 11 10 0
" 9-11 in. " " " 22 10 0
" AURATUM, 7-9 in. " " " 8 7 6
" 9-11 in. " " " 11 10 0
TUBEROSES, Pearl, select 4-6 in. " " " 1 10 0
" seconds, 3-4 in. " " " 1 2 6
Prices for GLADIOLUS, &c., on application.
F. W. O. SCHMITZ AND CO., Jersey City, N.J., U.S.A.

Old-Fashioned and Garden Roses.
GEO. COOLING AND SONS' NEW ROSE
CATALOGUE contains a full list of Old-Fashioned and Decorative Garden Roses, and a beautiful Coloured Plate of the Copper Austrian and other Briers. It will be forwarded post-free on application. A Silver Medal was awarded to G. C. & Sons for their collection of Old-Fashioned Roses at the Temple Show of the Royal Horticultural Society, and numerous prizes and certificates throughout the season. The Nurseries, Bath.

WINTER-FLOWERING PLANTS

WILLIAMS' for	AZALEAS.
WILLIAMS' for	CAAMELLIAS.
WILLIAMS' for	HEATHS.
WILLIAMS' for	EPACRIS.
WILLIAMS' for	BOUVARDIAS.
WILLIAMS' for	SOLANUMS.
WILLIAMS' for	CYCLAMENS.
WILLIAMS' for	CARNATIONS.
WILLIAMS' for	LILACS.

Williams' for all kinds of Winter-flowering Plants.

AN INSPECTION INVITED.

B. S. WILLIAMS & SON,
Victoria and Paradise Nurseries,
UPPER HOLLOWAY, LONDON, N.

EXHIBITIONS.

ASCOT, SUNNINGHILL, SUNNINGDALE and DISTRICT HORTICULTURAL SOCIETY.
CHRYSA NTHEMUM SHOW, November 1 and 2. Open class for Forty-eight Blooms, Prizes £8, £5, £3, £1; and for Four Trained Plants, Prizes £4, £3, £2. For particulars and Schedules, apply to—
F. PATTON, Ascot.

CRYSTAL PALACE.
ANNUAL CHRYSA NTHEMUM SHOW, FRIDAY and SATURDAY, November 3 and 4.
For Entry Forms and Schedules, apply to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close Friday, October 27.

KINGSTON AND SURBITON CHRYSA NTHEMUM SOCIETY.
President—G. C. SHERRARD, Esq., J.P.
The SEVENTEENTH ANNUAL GRAND SHOW of CHRYSA NTHEMUMS, FRUIT, VEGETABLES, &c., will be Held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 7 and 8, 1893, when the Final Contest between the three Successful Competitors for the Sixth Champion Challenge Vase, will take place; and the Seventh Champion Challenge Vase, value 25 Guineas, will be offered, open to all subscribers of 21s. Also a Silver Cup, value 5 Guineas, "Given by Major Collis Browne," in addition to Money Prize, for 24 Incurred Blooms, distinct. Over £160 offered in Prizes.
Schedules, and all information, may be obtained from the Hon. Sec., Mr. GEO. WOODGATE, Warren House Gardens, Kingston-on-Thames. Entries close November 3.

NATIONAL CHRYSA NTHEMUM SOCIETY.
GREAT CHRYSA NTHEMUM FESTIVAL and FETE, ROYAL AQUARIUM, WESTMINSTER, TUESDAY, WEDNESDAY, and THURSDAY, November 7, 8, and 9, 1893.
On this occasion the National Challenge Trophy, the Holmes' Memorial and other Cups, Medals, and valuable Money Prizes, will be competed for.
Also Prizes for Table Decorations, Fruit, and Vegetables.
Schedules of Prizes, and all information can be obtained of RICHARD DEAN, Hon. Sec. and Superintendent, Ranelagh Road, Ealing, W.

RUGBY CHRYSA NTHEMUM EXHIBITION, November 15 and 16, 1893.
£75 in Prizes. Entries close November 8. Schedules from—
8, Barby Road. WILLIAM BRYANT, Secretary.

THE BATH CHRYSA NTHEMUM SHOW, NOVEMBER 8 and 9, 1893. Entries close November 3.
For Prize Schedules, &c., apply—B. R. F. PEARSON, Secs. 2, Northumberland Bldgs., Bath. W. JEFFERY.

THE TIVERTON CHRYSA NTHEMUM SOCIETY will hold their NEXT SHOW of FRUIT and FLOWERS on THURSDAY, November 9.
R. P. COSWAY, Hon. Sec.

FARNHAM CHRYSA NTHEMUM SOCIETY will hold a SHOW of FRUIT and FLOWERS at the TOWN HALL, FARNHAM, on November 14 and 15. Over £36 worth of Prizes will be given. For schedules, entry forms, &c., apply to—
The Chestnuts, Farnham. Mr. PERCY WILKINSON.

HARRISON'S ROYAL MIDLAND VEGETABLE and ROOT SHOW (open to all England). This Exhibition will be held, by the kind permission of the Leicester Corporation, in the Market Hall, Leicester, on WEDNESDAY and THURSDAY, November 8 and 9, 1893, when prizes will be offered as follows:—
HARRISON'S LEICESTER RED CELERY.—Best Six Heads. 1st, 15s.; 2nd, 10s.; 3rd, 5s.
HARRISON'S EARLY ROSE CELERY.—Best Six Heads. 1st, 15s.; 2nd, 10s.; 3rd, 5s.
HARRISON'S EARLY MARKET CARROT.—Best Twelve Heads. 1st, 10s.; 2nd, 5s.
HARRISON'S SELECTED INTERMEDIATE CARROT.—Best Twelve Heads. 1st, 10s.; 2nd, 5s.
AUTUMN GIANT CAULIFLOWER.—Best Three Heads. 1st, 10s.; 2nd, 5s.
HARRISON'S MAGNUM BONUM PARSNIP.—Best Six Heads. 1st, 10s.; 2nd, 5s.; 3rd, 2s. 6d.
HARRISON'S IMPROVED DRUMHEAD SAVOY.—Best Three Heads. 1st, 10s.; 2nd, 5s.
BRUSSELS SPROUTS OF ANY KIND.—Best Four Stems. 1st, 10s.; 2nd, 5s.
LEeks OF ANY KIND.—Best Twelve. 1st, £1; 2nd, 10s.; 3rd, 5s.
ONIONS, GLOBE, OF ANY KIND.—Best Eight Bulbs. 1st, 15s.; 2nd, 10s.; 3rd, 5s.
ONIONS, FLAT, OF ANY KIND.—Best Twelve Bulbs. 1st, 15s.; 2nd, 10s.; 3rd, 5s.
BEET OF ANY KIND.—Best Six Heads. 1st, 10s.; 2nd, 5s.
POTATOS OF ANY KIND.—Best Twelve Tubers. 1st, £1; 2nd, 15s.; 3rd, 10s.; 4th, 5s.
CONDITIONS.—All exhibits to be grown from seed supplied by us (Potatoes excepted), each lot properly named and to be delivered not later than the day preceding the Show (Tuesday, November 7), afterwards to be retained by us to exhibit on our stands at subsequent Shows, and will not be returned unless they can conveniently be spared.
Customers will be allowed to compete for Potato prizes with tubers not grown from our seed; and may exhibit more than one lot in any class, but will not be awarded more than one prize in each class.

In conjunction with the Prizes offered for Vegetables, we propose to give the following for Farm Roots:—
A SILVER MEDAL for the best Ten Roots of our Normanton Globe Mangold, taken from a crop of not less than 2 acres.
A SILVER MEDAL for the best Ten roots of our Defiance Swede, taken from a crop of not less than 2 acres.
A SILVER MEDAL for the best Ten Roots of our Improved Green Barrel Turnip, taken from a crop of not less than 2 acres.
EXTRA PRIZES will be given to other exhibits of high merit.
HARRISON AND SONS, Leicester.

SOUTH SHIELDS and NORTHERN COUNTIES CHRYSA NTHEMUM SOCIETY.
This Exhibition will be held on WEDNESDAY and THURSDAY, November 15 and 16, in the ROYAL ASSEMBLY HALL, SOUTH SHIELDS.
The Society offer £150 in Prize Money, including £12 for 24 Incurred Blooms, and the same for 24 Japanese. Schedules now ready. Apply to—
BERNARD COWAN, F.R.H.S., Hon. Secretary.
Harton, South Shields.

YORK CHRYSA NTHEMUM SHOW.—The FOURTEENTH ANNUAL SHOW, in the FINE ART EXHIBITION BUILDING, will be held on November 15, 16, and 17, 1893.
Challenge Prize, value £20, added to First Prize, £10, for 36 Cut Blooms. Liberal Prizes for Plants, Cut Flowers, Fruits, and Vegetables.
Schedules, &c., to be had from—
13, Feasegate, York. J. LAZENBY, Secretary.

SCOTTISH HORTICULTURAL ASSOCIATION.
GRAND CHRYSA NTHEMUM SHOW, to be Held in WAVERLEY MARKET, November 15, 17, and 18.
NEARLY FIVE—HUNDRED POUNDS IN PRIZES.
Schedules and all information from the Secretary—
17, South Frederick St., Edinburgh. ROBERT LAIRD.

CUMBERLAND CHRYSA NTHEMUM SOCIETY.
THIRD ANNUAL SHOW at WHITEHAVEN, FRIDAY, November 17, 1893.
SPECIAL OPEN CLASS for 24 BLOOMS (Japanese). Prizes, £3, £2, and £1.
For Schedules, &c., apply to W. H. BEWLAY, Hon. Secretary, Freemason's Hall, Whitehaven.

THE ROTHERHAM & DISTRICT CHRYSA NTHEMUM SHOW will be held on MONDAY November 20, 1893. Schedules may be had by applying to Secretary, T. GARTERY, Cairnforth Lodge, Moorgate, Rotherham.

CELOGNE CRISTATA, Chatsworth, Trent-ham, and Maxima varieties, well-grown, with bloom spikes, and cheap.
TRUSTEES late J. Stevenson, Timperley, Cheshire.

ORCHIDS.—New, Rare, Cheap.—Imported and Established.
CATALOGUE just published, post-free on application.
FRED. HORSMAN AND CO., Colchester.

GRAPE VINES.—50 Alicante, 50 Gros Colmar, good, 2s. each. ASPARAGUS PLUMOSA, 50 large plants, in 24-pots. Low price.
Apply, 27, Folkestone Road, Upper Edmonton.

FOR Sale, large Specimen Plant of Adiantum Farleyense, 4 ft. through and 12 ft. round. Price on application.—J. WASLEY, Sherfield Manor Gardens, Basingstoke.

GERMANIA CARNATIONS, strong stuff, throwing up Flower-shoots, in 32's, 60s. per 100. ALEGATIERES, commencing to flower, in 48's, 40s. per 100.
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CARNATIONS.—Strong-rooted Layers of Raby Castle, 25s. per 100; dozen, 4s. Old Crimson Glove (very fine stock), 20s. per 100; dozen, 3s.
"LOADSTONE" AND HELEN JULIET, the Lady Florists, School of Gardening, Hemel Hempstead, Herts.

MILLER'S TULIPS, of finest quality, choice mixed Single Tulips, all brilliant colours, 35s. per 1000, 3s. 9d. per 100; choice mixed Double Tulips, all rich shades, 35s. per 1000, 3s. 9d. per 100; choice mixed Parrot Tulips, most attractive colours, 38s. per 1000, 4s. per 100; English Amateur Florists' Tulips, again becoming popular, May-flowering, splendid varieties, mixed, 52s. 6d. per 1000, 5s. 6d. per 100. Cash Orders 10s. upwards free. Bulb Catalogue free.
F. MILLER AND CO., 267, Fulham Road, London, S.W.

Palms Palms Palms!!
J. W. SILVER, F.R.H.S., begs to call attention to his immense Stock of the above, in all sizes and best leading kinds, and offers, in large and well established clean and healthy plants, Phoenix rupicola, Kentia Belmorian, Fosteriana, and australis; Cocos Weddelliana, Geonoma gracilis, Corypha australis, Latania borbonica, Pchospema Cunninghamii, Areca Baureii, and Seaforthia elegans, in 3-inch pots, 4s. per dozen; in 5-inch pots, from 12s. to 21s. per dozen. Catalogues and Packing free. Bulb Catalogue free.
J. W. SILVER, F.R.H.S., Nurseryman, Seed, Bulb, and Plant Merchant, and Horticultural Sundriesman, Streatham and Norbury Nurseries, S.W.

LILAC CHARLES X. and Virginalis, grown in pot, splendid plants, £4 to £6 per 100, finely grown, and covered with buds.
TREE PEONY.—20,000 plants (in all the best sorts), 12 sorts, our choice, true to name, well-grown grafts, from 1 yr., 18s.; 2 yr., £1 to £1 4s.; 3 or 4 yr., £1 9s. to £2.
HERBACEOUS PEONY.—Per 1000 (250 best sorts), 12 sorts, our choice, true to name, 8s., 10s., 20s. and more according to the novelty of the sorts; 100 in 50 or 100 sorts, our choice, £2 8s. to £4, according to the novelty; 1000 in 1000 sorts, our choice, £18; 1000 without name, mixed, £15; 1000 White sorts, £30; 1000 Red or Pink, or Mixed colours, £18 to £20.
100,000 TEA-ROSES (Dwarf), grown in pots, strong plants, £2 to £2 5s. per 100.
100,000 TEA-ROSES (Dwarf), grown Outdoors, Grafted on Seedling Briers, strong plants, £2 to £2 8s. per 100.
CARNATION MALMAISON, White, Red, and Pink, good plants, 30s. to 32s. per 100; Perpetuals, nice plants, good sorts, grown in pots, well budded, £2 to £3 (and £4 if plants are very strong or a novelty) per 100.
These lots comprise the largest and finest plants ever offered. Samples of all the plants will be sent on demand.
LÉVÊQUE ET FILS, Nurserymen, 69, Rue du Liégar, Ivry sur-Seine, near Paris.

NEW AND CHOICE VARIETIES OF FRUITS

OFFERED BY

MESSRS. JAMES VEITCH & SONS.

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ALBURY PARK NONSUCH.—Dwarf Maidens, 5/-; Standards, 7/6; Pyramids, 7/6.

BEAUTY OF STOKE.—Dwarf Maidens, 5/-; Standards, 7/6; Pyramids, 7/6.

McINDOE'S RUSSET.—Dwarf Maidens, 5/-; Standards, 7/6; Pyramids, 7/6.

WEALTHY.—Pyramids, 2/6 to 5/-.

PEARS.

BEURRÉ DE MORTILLET.—Bushes, 3/6 and 5/-; Cordons, 2/6.

BEURRE FOUQUERAY.—Dwarf Maidens, 2/6; Single Cordons, 3/6; Pyramids, 3/6, 5/-, and 7/6.

FOR DESCRIPTIONS SEE ADVERTISEMENT ON PAGE 485 OF LAST WEEK'S ISSUE.

ALL OTHER NOVELTIES OF MERIT.

DESCRIPTIVE CATALOGUE of SELECT FRUIT TREES, post-free on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

H. J. JONES' GREAT ANNUAL CHRYSANTHEMUM SHOW

IS NOW OPEN. ADMISSION FREE.

This is the largest and best Show ever seen near London, and consists of over 6,000 plants, in all the latest Novelties, including

500 YELLOW VIVIAND MOREL.

Trains every twenty minutes from Charing Cross, Cannon Street, and London Bridge to Lewisham, South-Eastern Railway.

In addition to the above, I have PURCHASED the ENTIRE STOCK of Messrs. PITCHER & MANDA'S CHRYSANTHEMUMS, which consist of 3000 plants, and embrace all the finest American varieties, as well as a large number of unnamed Seedlings of great promise,

WHICH CAN BE VIEWED FREE, AT

H. J. JONES' RYECROFT NURSERY, HITHER GREEN, LEWISHAM

AMARYLLIS.—AMARYLLIS.

Gold Medal, Dresden, March, 1893; Carlsruhe, 1893; Prize of Honour by H.M. the King of Saxony.

To be Sold, the very finest large-blooming, sowing hybrids, obtained from my prize varieties, in splendid colours, fine Bulbs, for further culture, with superior roots.

2 years, 10—12 cm. circumference	100 for 75s.	..	1000 for £34.
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SENT CAREFULLY PACKED. PRICES, NET CASH.

OTTO THALACKER, LEIPZIG—Gohlis (Germany).

SANKEYS' famous GARDEN POTS

* Bulwell Potteries, Nottingham. *

Messrs. Dicksons, Limited, Chester, write:—"The Flower Pots you have so largely supplied us with are light, strong and well made, and in every respect highly satisfactory."

Messrs. Richard Smith & Co., Worcester, write:—"We beg to say that we are highly satisfied with your 'Garden Pots'; they are well made, light, yet strong, and we like them better than any other we have ever used."

Mr. William B. 11, 536, King's Road, Chelsea, London, writes:—"For nearly thirty years I have been using your 'Garden Pots,' and still find them the best and cheapest."

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FERNS! FERNS!!—Trade.—Great Annual Sale. Surplus Stock. 200,000 Stove and Greenhouse in 24-inch pots, 11s. per 100, 200 for 20s.; 10 best selling sorts in 5-inch pots, 5s. 6d. per dozen; strong seedling, 4s. 6d. per 100. Large A. cuneatum, very fine tops, value in fronds, 6s. and 8s. per dozen. Cyperus, Aralias, Grevilleas, Solanums, 6s. per doz.; Palms, Ficus, and Dracenas, 1s. each. P. tremula, and A. cuneatum for making large plants quickly, 16s. and 20s. per 100. Packed free and put on rail for cash with order.—J. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

BARR'S WINTER & SPRING FLOWERS.

On application, the following CATALOGUES sent free:—

Catalogue of Bulbs, Winter, Spring, and Summer-Flowering.

" " Daffodils for Pots, Beds, Borders, and Naturalisation.

" " English Amateur Tulips of absorbing interest.

" " Hardy Herbaceous Perennials—Beds, Borders, Naturalisation, Alpine Mounds, and Rockwork.

Collections of BULBS, 12s. 6d., 21s., 42s., and 83s.

" " DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., 21s., to 105s.

BARR AND SON, King Street, Covent Garden, London.

HARDILY-GROWN,
Thoroughly Transplanted
FOREST, FRUIT
AND ALL OTHER
TREES,
PLANTS
&c.
Dicksons, Chester.
OUR STOCKS ARE QUITE UNEQUALLED.
Nurseries
450 Acres.
CATALOGUES FREE on Application.

LILY OF THE VALLEY CROWNS,

3-YEAR OLD.

First-Prize awarded at the Chicago World's Fair, 1893.

JULIUS HANSEN,

Lily of the Valley Nursery, Pinneberg, near Hamburg, Germany.

THE COLORADO BLUE SPRUCE.

ABIES PUNGENS GLAUCA and ARGENTEA.

Handsome specimens, 3, 4, 5, and 6 feet high. These are all of the *Bluest* type, and undoubtedly the finest plants in commerce. They are all Seedlings, the plants usually met with being grafted on the Common Spruce Fir.

ANTHONY WATERER,

KVAP HILL NURSERY, WOKING, SURREY.

GRAND NEW CARNATION, "EMPRESS OF INDIA."

Now Ready, extra strong plants, in large 60's, of this grand New Scarlet Carnation, the largest, best, and most hardy of its class, plants in the open still having quantities of fine blooms open. Price, 30s. per dozen. Special Offer to trade on application.

JOHN COBBAN AND SON, Seedsman, Market Place, Rotherham.

Come and See.

OUR

CHRYSANTHEMUMS.

Free inspection throughout the week (Sundays excepted). Our House, 160 feet by 26 feet wide, is one of the finest and most interesting sights to be seen, replete with many seedlings of great value; also 433 new kinds from China, Japan, France, and Italy, together with Sixty of the choicest American kinds, including **GOLDEN WEDDING**, introduced by us, and of which we hold a large and fine Stock—should be pleased to quote Lowest and Special Prices for Plants or Cuttings of this or any other of our 1400 Varieties.

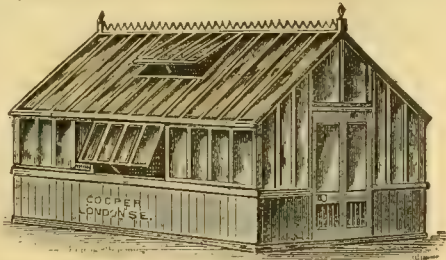
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H. CANNELL & SONS,
SWANLEY, KENT.

WILLIAM COOPER, 755, OLD KENT ROAD, LONDON, S.E.

Illustrated List Post Free. 500 Houses in Stock to Select from. The Largest Steam Horticultural Works in the World. Inspection Invited.

AMATEUR GREENHOUSES.



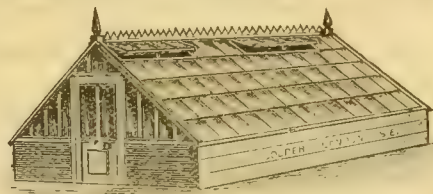
This illustration is an exact copy of my Amateur Span-roofed Greenhouses, which are made of well-seasoned red deal. Complete with ventilators, Irons for opening, Staging, Glass, &c. Made in Sections, so that they may be erected by any gardener or handy-man in a few hours. Simply screwed together. Any size made. For Price of Lean-to, see List.

Delivered and Erected

Long.	Wide.	High.	to eaves...	On Rail.	20 miles.
7ft.	5ft.	7ft.	4ft.	£2 16 0	£4 5 0
8ft.	5ft.	7ft.	4ft.	3 10 0	5 0 0
9ft.	6ft.	7ft.	3in. 4ft.	4 0 0	5 10 0
10ft.	7ft.	6in. 4ft.	6in.	5 0 0	6 15 0
12ft.	8ft.	8ft.	5ft.	6 0 0	8 0 0
15ft.	10ft.	8ft.	6in. 5ft.	8 10 0	12 0 0
20ft.	10ft.	9ft.	5ft. 6in.	12 0 0	16 0 0
25ft.	10ft.	9ft.	5ft. 6in.	17 0 0	22 0 0
50ft.	10ft.	9ft.	5ft. 6in.	30 0 0	40 0 0
100ft.	10ft.	9ft.	5ft. 6in.	50 0 0	70 0 0

Deduct 10 per cent. if required for brickwork.

AMATEUR FORCING HOUSE.



The utility of this house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request, but almost hitherto unknown. Send for List, post free.

CUCUMBER FRAMES.



These frames are 24 in. high at back, 13 in. at front, and are made of 1 in. tongued and grooved boards. The lights are 2 in. thick, glazed with good 15oz glass, nailed and bedded in good oil putty, painted three coats, handles to sashes, and put on rail at the following sizes and prices: One-light Frames, 4ft. by 3ft., 18s.; ditto, 6ft. by 4ft., £1 10s.; Two-light Frames, 6ft. by 4ft., £1 12s.; ditto, 8ft. by 6ft., £2 14s.; Three-light Frames, 12ft. by 6ft., £3 15s. For other sizes and prices see Illustrated Lists, free. SEND FOR LIST, POST-FREE.

POULTRY HOUSES.



Well and substantially constructed, warranted waterproof, complete with door, ventilator, and slide, from 20s.

5ft. by 4ft.	25s.
6ft. by 4ft.	30s.
7ft. by 5ft.	34s.
9ft. by 6ft.	42s.

SEND FOR LIST.

GARDEN HAND FRAMES.

These Frames will be found to be very useful for protecting plants, seeds, slips, and cuttings during the spring, which, if left uncovered would probably fall victims to the extreme cold so prevalent in this country during that season.

Zinc open tops, with glass cut to sizes, and zinc clips for glazing same.	Frames only.
12in. by 12in.	6s. 6d. each
14in. by 14in.	7 6 "
16in. by 16in.	8 0 "
18in. by 18in.	9 0 "
20in. by 20in.	10 0 "
22in. by 22in.	11 0 "
24in. by 24in.	12 0 "

SPECIAL NOTICE

Owing to the great increasing demand for my Amateur Houses every autumn, and having to refuse so many orders last season through customers not booking their orders early, but leaving them until the frost sets in, I have decided to allow a Special Discount of 5 per cent. off all goods as below to all customers booking their Orders previous to Oct. 28. Please note that on no account will orders be booked after that date under full prices.

Illustrated List Post-free.

GLASS. — GLASS. — GLASS.

Free on Rail in London. Packages included.

15-oz., 100ft.	21-oz., 100ft.
4ths ... 8s. 6d.	11s. 6d.
3rds ... 9s. 6d.	12s. 6d.

10,000 BOXES TO SELECT FROM.

The following is a list of sizes always in stock:—8 by 6, 9 by 7, 10 by 8, 12 by 8, 12 by 9, 13 by 9, 11 by 10, 12 by 10, 13 by 10, 14 by 10, 13 by 11, 18 by 11, 14 by 12, 16 by 12, 18 by 12, 20 by 12, 17 by 13, 20 by 13, 16 by 14, 18 by 14, 20 by 14, 22 by 14, 20 by 15, 20 by 16, 24 by 16, 20 by 18, 24 by 18. Glass cut to any size required; 15 oz. 1 1/2 d. per foot; 21-oz., 2 1/2 d. per foot. Large sizes, for cutting up, 15-oz. per case, 300 feet, 25s.; 21-oz., per case, 200 feet, 25s. All glass is cut and packed in own warehouses. Quality of glass and careful packing guaranteed. Special quotations given for large quantities. Have cash estimate from me before ordering elsewhere. PUTTY, prepared especially for Greenhouse work: best, 7s. per cwt.; 2nds, 6s. 6d. per cwt.; packages, 6d. per cwt. PAINT, quality guaranteed: 7 lb., 3s.; 14 lb., 5s. 6d.; 28 lb., 10s.; 56 lb., 18s.; per cwt. 34s. Glass, Special Line, 1250 200ft. boxes, best 21-oz., 9 by 7, 16s. per box, to clear.

MANURES, PEATS, SAND, FERTILISERS, ETC.

1 lb. tins Fertiliser, 4d.	£0 3 6 per dozen.
1 lb. tins Sunshade, 6d.	0 5 0 "
Special offer to Nurserymen and the Trade:—144 tins Fertiliser and 144 tins Sunshade	
Cocoa nut Fibre Refuse	0 0 8 per sack.
Silver Sand, coarse or fine (2 cwt.)	0 2 3 "
Best Orchid Peat	0 3 0 "
" Rhododendron Peat	0 1 6 "
" Brown Fibrous Peat	0 1 6 "
" General Peat	0 1 6 "
" Loose Peat	0 1 6 "
" Surrey Loam	0 1 6 "
General Potting Compost	0 1 3 "
Fern Compost	0 1 3 "
Bulb Compost	0 1 3 "
Leaf Soil, well decayed	0 1 6 "
Pure Wood Charcoal	0 2 6 "
Best Peruvian Guano	0 0 6 per tin.
" Lawn Sand	0 0 6 "
Fertiliser for Farming and Market Gardening (in 2 cwt. sacks)	0 10 0 per sack.
Worm Destroyer	0 0 6 per tin.
Insecticide	0 0 6 "
Tobacco Paper, 6d. per lb.	2 5 0 per cwt.
Wonderful New Mushroom Spawn	0 2 6 per bush.
All sacks and bags free. Send for List, post free.	

HORTICULTURAL TIMBER.

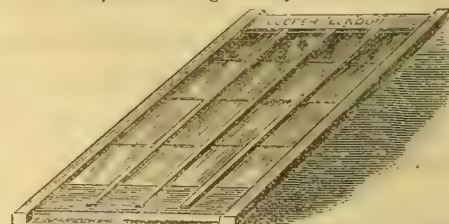
WELL-SEASONED RED AND YELLOW DEAL.

SASHBARS, 1 1/2 in., 3s.; 2 in., 3s. 9d.; 2 1/2 in., 5s.; 3 in., 6s. 6d. per 100 ft. run.	
MATCH BOARDS, 1/2 in., 5s. 6d. per square; 1 in., 9s. 6d. per square.	
FLOOR BOARDS, 1 in., 9s. per square.	
FEATHER EDGE BOARDS, 1/2 by 6, 6s. 6d. per square.	
DEALS, 3 by 11, Yellow, 4d.; 3 by 9, 3 1/2 d.; 3 by 7, 2d.; 2 1/2 by 7, 1 1/2 d.; 2 by 7, 1 1/4 d.; 2 by 6, 1d.	
CUTTING FLATING, 9d. per 100 ft.; Deeping, 2s. 3d. per dozen 12 ft.	
SLATING BATTENS, 1/2 by 2, 1s. 3d. per 100 ft.; 3/4 by 1, 7d. per 100 ft.	
HALF GLASS DOORS, 5 ft. 6 by 2 ft. 6, 6s. each; 6 ft. by 2 ft. 6, 7s.; Marginal Lights, 6 ft. 6 by 2 ft. 6, 10s.	
VENTILATORS, TOP or SIDE, 2 ft. 6 by 2 ft. 2s. each.	
FINIALS, MACHINE TURNED, 12 in. high, 6d. each; 4s. 6d. per dozen.	

TRELLIS, Planed, Extended.	Open.	s. d.
12 ft. by 1 1/2 ft.	...	2 0
12 ft. by 2 ft.	...	3 0
12 ft. by 2 1/2 ft.	...	3 6
12 ft. by 3 ft.	...	4 0
12 ft. by 3 1/2 ft.	...	4 6
12 ft. by 4 ft.	...	5 6
12 ft. by 5 ft.	...	6 6
12 ft. by 6 ft.	...	8 0
MATERIALS for SPAN-ROOF CUCUMBER-HOUSE, 100 ft. by 12 ft., £9 10s., best Red Deal, all planed, rabbeted, &c., ready for use. Send for Specification.		
The above prices are for good sound Yellow and Red Deal. For large quantities special low prices will be quoted.		
All Timber consigned at the Cheap Timber Rate to all parts of the country. Send for TIMBER LIST.		

GARDEN LIGHTS.

3,000 Glazed Lights always in Stock.



These Lights are well mortised and jointed together, and made in a good workmanlike manner, and are well worthy of inspection. Frame-work made of 2 1/2 in. styles, and properly rabbeted for the glass, with good 2 in. sashbars. The Glazed Lights are nailed and bedded in good oil putty.

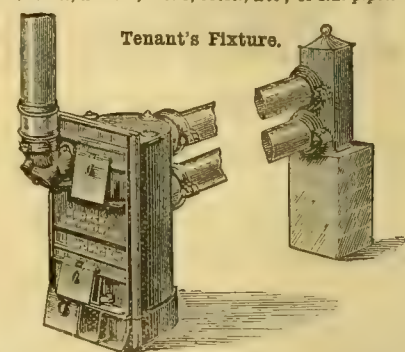
3ft. by 2ft., painted and glazed	5 0
4ft. by 3ft., " " "	6 6
6ft. by 4ft., " " " with 21oz.	9 0
6 ft. by 4 ft., unglazed lights	3 6

Special quotations for large quantities.

"INVINCIBLE" HOT-WATER APPARATUS.

MOST EFFICIENT AND CHEAPEST IN EXISTENCE.

Made in six sizes: No. 1, to drive 75ft., £1 15s.; No. 2, 10 ft., £4; No. 3, 200ft., £5 10s.; No. 4, 275ft., £7 10s.; No. 5, 375ft., £8 10s.; No. 6, 500ft., £10; of 4 in. pipes.



Tenant's Fixture.

Requires no sunk stoakehole and no brick setting. Will last all night without attention. Will burn house-cinders, therefore costs next to nothing for fuel. Anyone can fix it. A child can stoke it. Success guaranteed. Cost of complete Apparatus for Greenhouses, with 4-inch pipes, flow and return along one side cut and fitted; so that if the internal measurement of the Greenhouse is given, the Apparatus will be sent completely ready for fixing, an advantage which will be appreciated by all. Securely and carefully packed on rail at the following respective prices:—7 ft. by 5 ft., £2 15s.; 9 ft. by 6 ft., £3; 1 ft. by 7 ft., £3; 12 ft. by 8 ft., £3 5s.; 15 ft. by 10 ft., £4 5s.; 20 ft. by 10 ft., £5 5s.; 25 ft. by 10 ft., £6 5s.

COOPER'S HYGIENIC HEATER.

Burning Paraffin or Gas without Smoke or Smell.

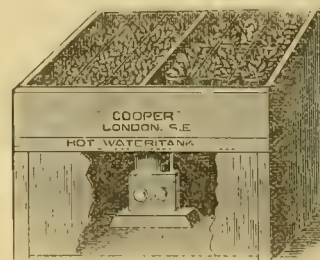
For Illustration see List.

PRICES—

No. 0 heats House 7 by 5ft., consumes 1/2 pt. of oil in 10 hours, 16s.; extra for gas 2s.
No. 1 heats House 9 by 6ft., consumes 1 pt. of oil in 10 hours, £1 4s.; extra for gas 2s.
No. 2 heats House 12 by 8ft., consumes 1 1/2 pt. of oil in 10 hrs., £1 16s.; extra for gas 3s.
No. 3 heats House 15 by 10ft., consumes 2 pt. of oil in 10 hrs., £2 12s.; extra for gas 5s.
No. 4 heats House 20 by 10ft., consumes 2 pt. of oil in 10 hrs., £2 16s.; extra for gas 6s.
No. 5 heats House 25 by 10ft., consumes 4 pt. of oil in 10 hrs., £3 4s.; extra for gas 12s.

Nos. 4 and 5 are special high power Heaters, with good powerful Burners; No. 4 with one 4 in. Flat Wick Burner; and No. 5 with two 4 in. Flat Wick Burners.

THE RAPID PROPAGATOR.



The only perfect Propagator for raising plants from seeds, slips, or cuttings. 1 ft., 8 in. by 1 ft. 6 in., £1. 2 ft. 6 in. by 1 ft. 10 in., £1 4s. 1 1/4 ft. by 2 ft., £2 8s.

CHRYSANTHEMUM EXHIBITION.

NORMAN DAVIS begs to intimate that his magnificent Exhibition of these popular flowers is now open, free of charge. No one interested in Chrysanthemums should fail to visit this, "the oldest and best trade show." (Open all Sundays in October for private inspection only.)

Notwithstanding the splendid Novelties distributed by me last season, and which are giving such unbounded satisfaction all over the country, I feel confident that the present season's Novelties will surpass all previous introductions. Scores of splendid Novelties in all fantastical shapes, and remarkable for their distinctness, are now opening.

CHRYSANTHEMUM NURSERIES, LILFORD ROAD (Near Loughborough Junction), CAMBERWELL, LONDON, S.E.

N.B.—500 Plants of the New "GOLDEN VIVIAND MOREL," and almost as many "WILLIAM SEWARD," are alone worth a visit.



THOMAS GREEN & SON, LTD., LEEDS and LONDON,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered

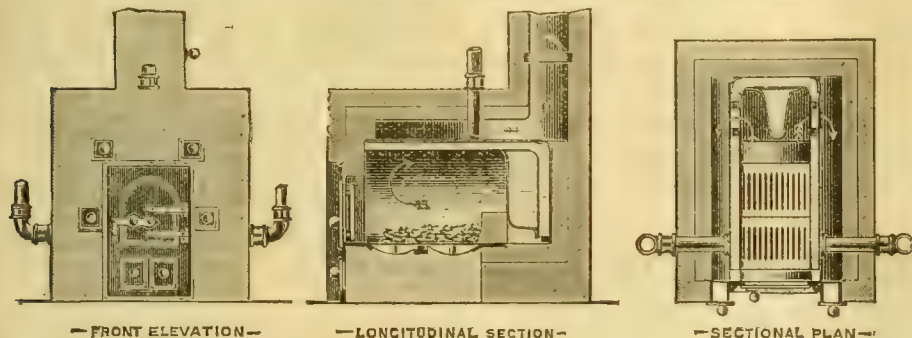
HOT-WATER BOILERS,

Others with TUBES, SHELVES, & HOLLOW or ORDINARY CAST-IRON GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant. The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

MUNICIPAL PATTERN BOILER, THE BEST EXTANT.



The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

SIZES AND PRICES.

	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep		1000 ft.	Price	£	s	d
M B 1	4 0 " by 2 0 " by 2 0 "	Calculated to heat 4-in. piping as follows:—	1280	"	21	0	0
M B 2	5 0 " by 2 3 " by 2 6 "		2200	"	32	0	0
M B 3	6 6 " by 3 0 " by 3 0 "		4000	"	60	0	0
M B 4	8 6 " by 4 0 " by 3 9 "		7000	"	85	0	0

SPECIAL BOILERS made to suit all purposes and requirements, and Estimates given for HEATING APPARATUS.

We make Boilers from £3 10s.

WHEN WRITING FOR PRICE LISTS, PLEASE STATE APPROXIMATE REQUIREMENTS.

OUR PRODUCTIONS MAY BE OBTAINED FROM THE LEADING MERCHANTS, IRONMONGERS and SEEDSMEN, or DIRECT FROM

THOMAS GREEN & SON, LTD.,
SMITHFIELD IRONWORKS, LEEDS; and SURREY WORKS, LONDON.

HUNDREDS OF REFERENCES CAN BE GIVEN IF REQUIRED.

ORCHIDS.—New and rare species a special feature. Catalogue forwarded post-free on application. SFEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich, London, S.E.

ASPARAGUS of fine quality.—For Forcing: 5-yr. old, splendid roots, 12s. 6d. per 100; 6-yr. old, extra fine selected, 15s. per 100. For planting: 3-yr. old, 25s. per 100; ditto, selected, 35s. per 100. All quotations are free on rail, and for cash with order. My Asparagus always makes the very top price at Covent Garden. J. J. CLARK, Market Gardener, Goldstone, Brighton.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 28, 1893.

WEEDS.*

I SUPPOSE, as the traditional Irishman is mythically said to hit a head whenever he sees it, so you destroy a weed whenever you can. Far be it from me to say you are wrong in so doing, but if you will accord me your patience, I may be able to show you that it may sometimes be as advantageous, or even more so, to turn your enemy into a friend as to annihilate him. Weeds!—I shall not stop to trouble you with a definition of a weed. I do not think any one has succeeded in framing a definition to which exception may not be taken. If we consider it as a plant growing where we do not want it to grow, that will be near enough for our present purpose.

Let us see, now, what it is which gives the weed its power of holding its own, and of dislodging its competitors—perhaps we may gain some lessons from the survey. First of all, it is endowed with the power of adaptation—it makes the best of circumstances. It will grow perhaps where other things will not, or so we say; at any rate, it has the advantage of a good constitution, which enables it to withstand hardships which other plants could not endure. Then each particular weed has some peculiarity which enables it to succeed where others less favourably endowed could not do so.

Look at the Coltsfoot on our railway banks, it smothers everything else, and the reason is not far to seek. It has a powerful underground apparatus, which allows it to lay hold of the soil, and extend in every direction; whilst, above ground, its large broad leaves flattened against the soil, effectually prevent the growth of smaller plants.

Another advantage which some weeds have, as you know to your cost, is the abundance of seed they produce. Mr. Henslow attributes this in part to the fact that many of these plants are self, and not cross fertilised. Again, many of these weeds have exceptional means of dispersal, e.g., the Dandelion with its feathery seeds, or the Goose-grass with its seeds covered with hooks or prickles.

I might, of course, give you many more illustrations, but it is not necessary that I should do so, as they are only too familiar to you; nor is it at all necessary for me to tell you how to deal with your enemies. I would prefer to ask you to consider whether we could not turn what you know about weeds to some advantage, to make them friends instead of enemies. We see how fully they take advantage of circumstances. Cannot

* The substance of an address to the Ealing District Gardeners' Association by Dr. Masters.

we take advantage of them? In illustration, let me ask you, Is Wheat a weed? You will certainly say no; but it was so once. Is Cabbage a weed? Again you will say no; but if you visit Dover cliffs in the summer time, you will find them covered with the grey leaves and bright flowers of the wild Cabbage, which there you would call a weed. Is Sea-kale a weed? No; but that, again, you may find on the beach at Dover. Are Carrots, Parsnips, Celery, Spinach, Beet-roots, weeds? No; you will not call any of these weeds, and yet they all grow wild in our country, and some of them even in our own county. Is Dandelion a weed? I expect you would call it so; but in France it is grown as a salad. Is Hemp a weed, or Buckwheat? I have found both growing as weeds in this very neighbourhood; but on the other side of the Channel you may see acres of Hemp, as in the neighbourhood of Abbeville; and in Holland and Germany you may see acres and acres of Buckwheat in cultivation.

I was reminded of this last autumn, on seeing a piece of waste ground completely covered with Docks in full seed. The sparrows were there in prodigious flocks. They evidently found abundance of food in the despised and neglected Dock, and I have no doubt whatever that we also might turn the profusion of floury seeds of the Dock to some advantage.

And now let me say a word about the Leguminous plants, many of which are common weeds in this neighbourhood, and some of which, as Peas and Beans, are in cultivation. If you look at the roots of these plants, you will find them studded with little knobs, the precise meaning and significance of which have, until of late years, been unknown. Lately it has been discovered that these knobs are the homes of creatures infinitely small, and which are in a broad sense called bacteria. Further, it has been found that these bacteria have the power of converting certain inert and useless combinations of nitrogen into soluble and useful forms; so that while the plant in the absence of these bacteria cannot absorb nitrogenous food, it can readily do so when its roots are tenanted by these organisms. Nitrogen, as you know, is the most important and the dearest plant food that we can purchase, and if the plant can supply its own needs in this respect without cost, so much the better for us.

The practical lessons to be learnt from this are, that it is not necessary to use so much nitrogenous manure, such as dung, for Peas and Beans, or Clover, as for other plants, because the bacteria will supply that for you. Again, it shows the advantage of digging-in, rather than of burning, the haulms of Peas and Beans.

There is, then, one way in which we may, and do, turn weeds to good account, and that is when we allow them to rot in the compost heap. When we do this, we return to the soil something, at least, that has been taken from it, and much also that was not in it before, which has been obtained from the air by the leaves of the weeds, under the influence of sunlight and heat, and the farmer has long ago found out how advantageous it is, especially on light soils, to plough in his green crops, especially if they be of a leguminous nature.

It is, then, not altogether the plant that is in fault. We give it a bad name, and call it a weed; but if we transfer it to gardens and cultivate it, it is no longer a weed, but becomes a useful member of society. On whose side, then, does the blame lie for the existence of the weed? Surely on ours, at least as much as on that of the plants. Suppose we say that there are from 1000 to 1500 plants known to be wild in Great Britain, and five or six hundred in our own county, how many of them do we, "the heirs of all the ages," turn to account? A dozen or twenty, perhaps, certainly not fifty, if we count in the few wild plants, such as Foxglove, Loose-strife, the Water Lilies, and a few others—which we press into the service as ornamental

plants; and the few plants that we do utilise, have they not been handed down to us by our forefathers? Which of them have we added to the list? Can you call to mind a single "weed" which any one of us has attempted to reclaim? The Shirley Poppy is almost the only instance of the kind I can recall in recent times. I own when I see the hoe so busily at work at the task of destruction, I am apt to experience some little feeling of reproach at the chances and opportunities we waste. Those plants, or some of them at least, might be turned to good account, but we do not make the effort. We shall probably not do so until the pressure of necessity compels us.

In this connection I would call your attention to a singular fact. We gardeners run fast enough after novelties among flowers. In a few weeks' time we shall all be as eagerly scanning new varieties of Chrysanthemum as a little while since we were comparing notes about the last new Roses, and we do not hesitate to award a First-class Certificate to a new Orchid or to a newly-introduced plant of merit. But if a new vegetable turns up, who pays any attention to it? A Potato or a Cabbage as like its predecessors as tweedle-dee is to tweedle-dum, gets a certificate, but a new vegetable—we smile, and pass on. I have myself at different times been instrumental in introducing new vegetables—that is, new to this country, plants which the patient Japanese have had the wit to convert from weeds into vegetables. I have distributed them among our best vegetable growers, I have even sent them to Chiswick, but I have never heard anything more about them!

You will excuse me, then, in conclusion, for expressing the opinion that every gardener ought, so far as he is able, to be an experimentalist. It is, it is true, a long business making experiments, and one that requires great patience. We must be able to stand being laughed at, but we must persevere. If our ancestors had not done so, where should we be? It is true, posterity has not done anything for us; but the only way we have of repaying our obligations to the past is to do something in our turn for the future generations, and one way of doing this is by ceasing to call plants bad names, and by turning them, as far as we can, to advantage.

NEW OR NOTEWORTHY PLANTS.

BOLBOPHYLLUM ERICSSONI,

*Kränzlin, nov. sp.**

THIS is by far the most striking new Orchid received for a long time past. Imagine a group of from nine to twelve flowers of a large Chimæroid *Masdevallia*, surmounting a slender flower-stalk, and you will get an idea of this extraordinary new *Bolbophyllum*. The flowers have a yellowish-white ground-colour, the sepals and petals are heavily spotted with dark brown, the lip is red, and has a very strange spongy texture at the disc. As in the other *Bolbophyllums* of the *Umbellata* group, the flowers of this species also form a circle, but in this instance it is a very large one. The upper sepals are erect, the lateral ones and the petals are spreading; the diameter of each individual flower, including the measurement of the tendrils, is from 8 to 9 inches. The rhizome is very long, creeping, and bears its slender bulbs at long distances apart. The bulbs are thin, erect, from 4 to 5 inches long, and terminated by a leaf much resembling that of a medium-sized *Stanhopea*. It

* *Bolbophyllum Ericsoni*, Kränzlin.—Sepalo dorsali lanceolato longe-caudato, lateralibus oblongis longius caudatis bis v. ter tortis, omnibus trinerviis reticulatis; petalis triangularibus falcatis caudatis quam sepala multo minoribus; labelli hypochilio cordato curvato acuminato spongioso, epichilio v. ungue semicirculari efficiente a basi latiore angustato marginato; gynostemio latissimo infra foveam stigmaticam umbone maximo instructo utrinque in cornu acutum producto; androclino postice dentato; antheram et pollinia non vidi. Flores inter maximos generis, sepala 10 cm. longa basi fere 2 cm. lata. Caulis primarius seu rhizoma longe repens; rami secundarii seu bulbi angusti lineares monophylli. Folia longe petiolata illis *Stanhopearum* quam maxime similia. Flores albi diu brunneo-maculati. *F. Kränzlin*.

is quite superfluous to add more. The description speaks for itself, and shows that there is a grand Orchid at hand. It is a discovery of Mr. Ericsson, one of the oldest Sanderian travellers, and by desire of Messrs. F. Sander, I have named it after their Swedish collector. *F. Kränzlin, Berlin*.

OSTEOMELES ANTHYLLOIDIFOLIA.

THIS new species, introduced by M. le Professeur Cornu, the Director of the *Jardin des Plantes*, has a rather wide range of habitat, being found in the Sandwich Isles, Japan, and even China. It is a greenhouse shrub, of the *Rosaceæ* family, and may be classed between *Cotoneaster* and *Hawthorn*; the leaves are deciduous, pinnatifid, like those of some leguminous plants, slightly tomentose, and of a whitish-green; the inflorescences, which cover the plant, are corymbs bearing each from fifteen to twenty white flowers, measuring about two-fifths of an inch in diameter, have five petals, numerous stamens, and resemble the flowers of the *Hawthorn*. The fruit is a berry, and rather fleshy. This plant is well suited for forcing, as this causes it to flower in January and February.

Shown on Feb. 9 last, before the Société Nationale d'Horticulture de France, by M. Maxime Cornu, this plant received a First-class Award. The plant, described some time since, has been recently introduced into Europe by l'Abbé Delavay, the well-known traveller in the Yunnan. The plant is catalogued for sale by MM. Lemoine et Fils, Nancy.

THE CHEMISTRY OF BACTERIA.*

THE immense variety of substances produced in the vegetable kingdom has always been a source of astonishment to the chemist—the plant is, indeed, the finest chemical laboratory with which we are acquainted. While some kinds of chemical work are common to all plants, there is hardly a species which does not possess some special capacities, which does not produce some products different from its neighbours. When we survey the whole vegetable kingdom, the extent to which this specialisation is carried, and the immense variety of products obtained becomes simply overwhelming. Chemists are still unacquainted with the larger part of the substances produced by plants in the vegetable kingdom.

When we turn from the products of plant-work to the materials employed, our wonder still increases, for these materials are of the simplest kind—water, carbonic-acid gas, oxygen, nitric acid, and a few inorganic salts; yet out of these, the whole of the immense variety of vegetable products is constructed.

This being the case, we need hardly say that the methods of plant chemistry are of supreme interest, both to the chemist and to the vegetable physiologist. By the aid of what forces, through what course of reactions, are the simple materials moulded to their final issue? The higher plants are in some respects unfavourable subjects for the study of plant chemistry; their different parts have different functions, and the changes in progress are obscured to the student by the fact that changes of a very different type are in progress at the same time, and in places very near to each other. What would not the physiologist give if he could isolate a single cell, and grow it by itself in solutions of known composition, when by studying the nature of the cell's new growth, and the variations taking place in the nourishing solutions, he might hope to be able to grasp the facts of cell nutrition, and the nature of its waste products? Such an opportunity is actually afforded when we study the chemical changes brought about by bacteria.

In bacteria we have the vegetable cell in its

* Paper read by R. Warington, F.R.S., at the Nottingham meeting of the British Association.

simplest form; we have a mass of protoplasm and a cell wall, but the cell is single, or united with a few others; and as far as we know the life changes in all the cells of every species living under the same conditions are the same. Moreover, these organisms grow freely in suitable solutions, and the chemical changes produced in the materials held in these solutions can be readily ascertained. We have thus in a study of the chemistry of bacteria a splendid opportunity for enlarging our knowledge of plant chemistry, and indeed of becoming acquainted with the fundamental reactions on which synthetical organic chemistry depends.

The study of the chemical work performed by bacteria has occupied as yet but a few years, but the results have been most remarkable. The immensely numerous species of bacteria have been found to exhibit an almost equally great diversity of action. Different members of the class have been found to flourish under entirely opposite conditions, to feed on wholly different materials, to perform an immense variety of chemical work upon the media in which they live, and yet the chief product of plant-life—the formation of protoplasm and cell-wall—is probably in each case practically the same. The study of the chemistry of bacteria has thus greatly enlarged our conception of the chemical power of the vegetable-cell.

As a contribution to the discussion to-day, I propose to call attention to the chemical actions displayed by three species of bacteria existing in the soil, and all of first-class importance in their relations to agriculture.

It is well known that all ordinary soils contain organisms possessing a vigorous power of oxidising, of bringing about a combination between the oxygen of the air and various organic and inorganic bodies. Thus, dead vegetable and animal tissues in soil are, under favourable conditions of heat and moisture, resolved into carbonic acid, water, and nitric acid.

Particular experiments show that the nitrogen of albumin, gelatin, asparagin, urea, ammonia, ethylamine, and thiocyanates, is converted by soil into nitric acid. Nor is the action confined to organic matter, for nitrites are oxidised to nitrates, iodides to hypiodites and iodates, and bromides to hypobromites and bromates.

The organisms producing nitric acid have been made the subject of study by many chemists, and after much labour and many disappointments they have been satisfactorily isolated. We now know that the production of nitrates in the soil—a process of the greatest importance for the nutrition of agricultural crops—is accomplished by the action of two organisms, each of which performs a distinct stage in the work. By one organism, ammonium carbonate is oxidised, and the nitrogen converted into a nitrite. By the second organism, nitrites are converted into nitrates. We have here an excellent example of the way in which certain special functions, certain narrowly-limited lines of work, are exercised by individual species of bacteria. The nitrous organism can oxidise ammonia to nitrite, but it cannot change a nitrite into a nitrate. The nitric organism, on the other hand, oxidises nitrites readily, but it cannot oxidise ammonia. Both organisms are present in all fertile soils, but the formation of nitrites is not usually perceived, as they are at once converted into nitrates.

The organisms we have mentioned grow and exercise their functions in dilute solutions of appropriate composition, and it is therefore possible to study exactly the mode of their nutrition. Like every other living organism, they grow and exercise their functions only when certain inorganic salts supplying phosphates, sulphates, potassium, calcium, and magnesium are present. The continued omission of one of these has been proved in several cases to bring about a cessation both of growth and function. The general fact is familiar to physiologists, but it

is singular that we have as yet no rational idea of the mode in which these various inorganic bodies assist in plant nutrition, with the exception of the fact that sulphur, and possibly in some cases phosphorus, are constituents of albuminoid bodies.

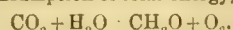
As to nitrogenous food, these organisms are amply furnished by the ammonia, the nitrite, or nitrate which is intentionally added to the solution; the addition of no other nitrogenous substance is necessary. Here, too, we are on familiar ground. Ammonia and nitrates are both well known as the most appropriate nitrogenous food for plants.

When we inquire, however, what is the source of carbon to the nitrifying organisms, we are confronted by a startling novelty. It is found to be quite unnecessary to supply these organisms with any carbonaceous food save carbonates, bicarbonates being preferred. The fact of the conversion of carbonates into organic cell substance has been conclusively proved in the case of the nitrous organism; it is at present assumed to be also true of the nitric organism, as this also requires the addition of no organic carbon to its nutritive solution.

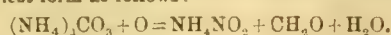
The fact that green plants exposed to sunlight are capable of forming organic substances from the carbonic acid and water of the atmosphere is well known to physiologists, but it is equally certain that this action does not occur in the dark. Yet here we have a colourless cell, destitute of chlorophyll, growing in the dark, which nevertheless is capable of decomposing carbonic acid, and producing from it carbonaceous cell-substance. From a purely chemical point of view this reaction may well appear at first sight incredible, as the decomposition of carbonic acid is an action requiring the consumption of much energy, which in the case of the green plant is supplied by the sun's rays, but in the case of the nitrifying organism is supplied in no such way.

This theoretical difficulty disappears, however, when we look at the whole reaction brought about by the nitrous organism. This organism attacks carbonic acid in its combination as ammonium carbonate, and the formation of an organic carbon compound proceeds at the same time as the oxidation of the ammonia, the result of the whole reaction being the liberation of heat, and not its consumption; a supply of external energy is thus not required.

Expressed in its simplest terms, the green plant manufactures carbohydrates from carbonic acid and water by a consumption of solar energy, as follows:—



The nitrous bacterium oxidises ammonium carbonate, producing at the same time ammonium nitrite and a carbohydrate; this reaction we may express in its simplest form as follows:—



The equation, however, by no means fully expresses what actually occurs, as Winogradsky finds that thirty-five parts of nitrogen as ammonia are oxidised for one part of carbon assimilated; the whole reaction is thus strongly exothermic.

The nitric organism multiplies more slowly than the nitrous, and does not afford a good subject for quantitative experiments; its nutrition has not yet been fully studied.

The last organism I wish to speak of is the one of which Winogradsky has given a preliminary description during the present summer. It has been obtained from soil, and possesses the remarkable power of assimilating the free nitrogen of the atmosphere. To accomplish this assimilation it is simply necessary to grow it in a solution containing sugar (dextrose), and the necessary salts, no combined nitrogen being supplied. Under these circumstances a vigorous growth of the bacillus takes place, the sugar undergoes a butyric fermentation, and at the end of the operation it is found that the culture has acquired nitrogen, the amount being apparently about $\frac{1}{100}$ th of the weight of the sugar fermented. By using as much as 7 grams of sugar, an assimilation of 14 milligrams of nitrogen has been obtained. Washed air, free from ammonia and nitrates, was used in these experiments.

That a vegetable organism should be able to

acquire from the air the whole of the nitrogen which it needs is certainly very remarkable, and is an extraordinary fact, both to the physiologist and chemist. We have no clue as yet as to the mode in which the nitrogen enters into combination, but it is evident that in this case, as in the nutrition of the nitrous organism, the difficult piece of chemical work forms but a small part of a much larger reaction that is at the same time in progress, and with which it is essentially connected.

It seems not improbable that these results of Winogradsky will explain some facts which have hitherto presented much difficulty. That a special organism, when in union with the roots of a leguminous plant, is capable of bringing about the assimilation of the free nitrogen of the air, is now admitted by all; but it is denied by Schläsing, and other accurate observers, that the same organism when living in the soil has any such property. May we not suppose that for the assimilation of nitrogen to occur the organism must be supplied with sugar, or its equivalent; and that this supply of sugar to the organism only takes place when the organism gains access to the sap of one of the higher plants?

In conclusion, I think we shall all agree that however imperfect is our knowledge of the chemistry of the three species of bacteria we have considered, the facts which have been established have, at least, enlarged our conception of the capabilities of a vegetable cell, and I trust that some light has also been thrown on the general method by which some of the extraordinary chemical results are attained.

ON SOME SPECIES OF PLANTS AT HONG-KONG.

HABENARIA MIRSISIANA, Champion.—Although by no means so showy as *Habenaria Susannæ*, Br., it is certainly as pretty. The specimens which I found were growing at an altitude varying from 1400 to 1700 feet on the south slopes of hills amongst long grass. This species attains a height of 18 inches; the leaves are three or four in number, almost lanceolate, and about 4 inches long. The flowers are from three to ten on a spike, pure white, and an inch across. The lip is nearly three-quarters of an inch in width, and deeply three-lobed. The middle lobe is linear, the two lateral ovate, and beautifully fringed, the whole lip being merged into a spur fully $1\frac{1}{2}$ inch long. It flowers at the end of August or beginning of September, but it is not nearly so often met with as *H. Susannæ*.

Mustarda pubescens, Ait.—At the latter end of May this is undoubtedly the most noticeable plant in flower in the island, for it meets the eye at every turn. Sometimes you find it as a twiner, encircling itself around some large shrub or tree; at other times it forms a bush 3 or 4 feet high and 5 or 6 feet through; in either case it is exceedingly pretty. It owes its beauty principally to the peculiar form and colour of some of its sepals. In each corymb three or four of the outer flowers have one of their five sepals produced into a white leaf-like appendage, often 2 inches long and $1\frac{1}{2}$ inch wide. The tube of the corolla is white, 1 inch long, the lobes being canary yellow on the upper side, and not more than one-sixth of an inch long. The leaves are dark green, ovate, and about 3 inches long. I have seen plants of it in England, but they could not be compared with the specimens met with here in a wild state.

Camellia reticulata, Lindl.—The Natural order Ternstroemiaceæ is represented in Hong-kong by eight genera, of which *Camellia* contains the largest number of species, namely four. The present species grows into a small tree 20 to 30 feet high. Out of flower it is an imposing-looking plant, with its dark green glossy foliage. The individual leaves are oblong, 6 inches long, and from 2 to 3 inches wide. In flower, however, it is far more imposing, with its large white blossoms, which are produced in the axils of the upper leaves, and are often more than 3 inches across. It is found growing in woods, and is at its best in June. When I was at Kew, there was a fine specimen of it in the temperate-house

there, and during the flowering season it was a sight really worth seeing. It had, however, pink flowers.

Schima Noronhae, Reinw.—This makes a small tree of great beauty, sometimes attaining a height of 30 to 40 feet, and as many feet through. The flowers are white, nearly $\frac{1}{2}$ inches across, and are very freely formed toward the ends of the shoots. The leaves are oblong, 3 to 4 inches in length, and coriaceous. It is in flower a little earlier than *Camellia reticulata*, and it inhabits similar situations to that plant, of which family it forms a member.

Lilium longiflorum, Thunberg.—This well-known Lily needs no description. It is common here on the hill-sides, and attains a height of nearly 3 feet, and bears from one to three terminal flowers varying from 4 to 8 inches in length. Under cultivation it is considerably improved. This year I noticed one plant with twenty-five flowers on it, and many more had from fourteen to twenty flowers. These results were from bulbs planted in beds in September of last year. Of plants grown in pots, five bulbs to a 10-inch pot, one produced thirteen flowers, the average number of flowers to a plant being eight or nine. In the gardens the flowers open towards the end of April, but on the hill-sides it is the end of June before they appear.

Rhodomyrtus tomentosa, De Candolle.—Amongst the many showy hard-wooded shrubs which are found in Hongkong this one certainly deserves notice. It generally grows to a height of 4 or 5 feet, but is sometimes met with much taller. The leaves are pale green on the upper surface and hoary on the underside, oval, and about 3 inches long. The flowers are produced in the axils of the upper leaves, the peduncles being 1 inch long, bearing one or three flowers; each flower measures nearly 2 inches across. The petals are five in number, the colour of them varying from almost pure white to deep rose. It is a very common plant, and is often found growing in shady places, although generally it prefers the sun. It flowers during May. *W. J. Tutcher*.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM PHALÆNOPSIS ROTHSCHILDIANUM.

This beautiful white form of *D. Phalænopsis* is again in flower in the Right Hon. Lord Rothschild's collection, where also many superbly grown and finely-flowered specimens of the other forms of Sander's importation of the species are making a fine show, one form with uniformly tinted rosy-crimson flowers being specially attractive. Of the last importation the largest bulbed pieces were selected, and in many cases the new growths are already larger than those imported. There is also to be observed a very fine show of other species, and especially the autumn-flowering *Cattleya labiata*, some noble forms of *Lælia pumila præstans*, *Lælio-Cattleya exoniensis* ×, the charming *Phalænopsis Lowii*, &c. In the *Lælia*-house are numbers of strong spikes on the white and coloured forms of *L. anceps*, which will in due time make a grand display.

CYMBIDIUM GRANDIFLORUM VAR. PUNCTATUM

A native of the eastern Himalaya, at elevations of from 5000 to 7500 feet. It has narrow lanceolate prominently ribbed leaves and large transversely oval flowers, with oblong acute olive-green segments and broad obtuse lip spotted with red. *Lindenia*, t. 389.

ODONTOGLOSSUM TRIOMPHE DE RAMBOUILLET.

A natural hybrid allied to *O. crispum*, and resembles the form known as *O. Ruckerianum* ×. The segments are lanceolate, thickly spotted with carmine, lip oblong white with a yellow disc striped with carmine at the base. *Lindenia*, t. 390.

GALEANDRA CLAESII, COGNIAUX, SP. NOV.

A Brazilian species described by M. Cogniaux. The pseudobulbs are slender elongated leaves,

sheathing-sheaths spotted, blades lanceolate acuminate, flowers numerous in loose branching panicles, peduncles very slender, flowers transversely oval, segments spreading oblong, brownish, lip involute, fore lobe flat, white striped with purple. *Lindenia*, t. 391.

CYMBIDIUM LOWIANUM, Rehb. f., VAR. SUPERBISSIMA, Linden.

Distinguished from the type in the deeper colour of the blotch on the front part of the lip. Native of Burma. It requires a medium temperature and a light well-ventilated position, with abundance of water in the growing season. *Lindenia*, t. 392.

FLORISTS' FLOWERS.

GLADIOLUS SOPHIE BUCHNER.

A HARDY form of the Lemoine race, with cream-coloured hooded flowers, the three lower segments having a broad rosy-lilac blotch. A good specimen was lately sent us by Messrs. Wallace of Colchester.

PROSPECTS OF THE CHRYSANTHEMUM SEASON.

Those persons who are in the habit of attending any of the numerous exhibitions of this autumn flower will form some speculations on the prospects of the coming season. Many persons, I understand, fear that the abnormal heat experienced during the summer may have detrimentally acted on the plants, and that the blooms in consequence will be poor in quality; and opinions have also been freely expressed as to the earliness or otherwise of the blooms. My opinion is, that we shall see the majority of blooms of excellent quality if not very large; this will be no disadvantage, as the huge blooms often seen are sometimes coarse, and their production should not be encouraged. Those of a middle size according to the variety, and possessing depth of petal, solidity of bloom, and richness of colour, are to be the most encouraged; and these we are likely to see this season, if one may judge from the appearance of the plants and the manner in which the blooms are developing at the present time. I do not suppose that the season will be nearly as early as many fear it will be; indeed, some collections of plants appear to be the reverse of early, owing to the manner in which the plants made their first and second natural breaks. In this case cultivators feared the second bud would be too early to be retained, and they let the plants grow on for the formation of the terminal buds. In consequence, many late blooms will be witnessed. This is also no disadvantage, as by it the flowering season will be considerably prolonged. These late blooms may not possess the size of the earlier ones, but they will have a depth of colour not possessed by those. Seasons like the past entail an enormous amount of labour on cultivators; but where this can be afforded and met fully, experience has shown that the results are generally good. Plants during the hottest part of the season require to be watered three times a day, and if they received it but twice instead, failure in some way is almost sure to ensue. It is some such errors in practice which give rise to the bemoaning of careless cultivators, that the flowering of Chrysanthemums will not be good. In spite of the past summer-heat, we are sure to see some varieties of Japanese shown along with the more common ones, which, in ordinary seasons, are considered to be too early for the big exhibitions; as, for instance, that pleasing variety from America, William Tricker, rose-pink in colour, will be shown as the result of what some growers call an adverse season. Such weather tends to test the abilities of the cultivator to the utmost, and those persons who have succeeded will have no reason to complain of their endeavours.

The season promises to be rich in Japanese novelties, many of which possess much merit. A great improvement is manifest in the habit of growth, as a few years since it appeared necessary for the plants to run up to 10 feet high before they gave us high-class blooms. Now we obtain them from plants under 3 feet—a decided gain, brought about by cross-

breeding. Varieties of the former class could not be well employed as objects of decoration owing to their ungainly growth, but now these large-flowered Japs. are suitable for almost any kind of decoration.

I never remember the small-flowered kinds—as Pompons, Anemone Pompons, single varieties, and those of the larger section, which as bushes produce, as a rule, a quantity of bloom rather than a small number of fine blooms—looking so well. These plants are not ungainly tall, and they appear to be very floriferous, the wood especially short-jointed, and nearing maturity. The cultivation of Chrysanthemums in the open air has extended very considerably of late, the varieties planted being better chosen than formerly. It is useless to attempt to grow in ordinary seasons the incurred varieties. [The late Mr. Salter did not think so. Ed.] Those of the Madame Desgranges type are preferable in most points. They afford more bloom, are dwarf, and as a consequence, do not require so much attention in matter of staking. Many bare walls may be made gay during the month of November, and in favourable seasons well into December, if a proper selection is made. Pompons, the small-flowered varieties of Japanese with reflexing florets, as well as the single-flowered varieties, are well adapted for out-of-door culture. In our gardens, these out-of-door plants promise remarkably well, having made many side-shoots, which will add greatly to the number of the flowers.

With some temporary protection in the event of frost coming on, a well-clothed wall of Chrysanthemums is an object of no mean beauty in a garden. *E. Molyneux*.

ROSES AND CARNATIONS.

We have daily cut blooms of Roses and Carnations out-of-doors up to the middle of this month, and the Tea Roses and some of the Carnations would continue to give us flowers till Christmas if the weather were fine and mild. We can obtain the right temperature, i.e., 50° to 55°, and other conditions required for affording bloom in a well-ventilated roof-heated span-roofed house. The point is to have ventilation more or less all day, and also at night when the air is clear; Roses like air above all things, and it is just as necessary for the well-being of Carnations. As I write, I am looking out over a collection of Carnations with scarlet, white, pink, and crimson blooms. These are in a house where the top and side-windows have been wide open day and night, and as yet no artificial heat has been used. One important point seems to be the protection of the flowers from rain. The flowers of Carnations are at this season always welcome. Of course, those who would have a beautiful display either of Roses or Carnations at this season of the year must make preparation in good time. The Roses should be grown in pots during the summer, and pruned early in the month of August, so that some growth may be made during the usually fine weather of that month; and here, again, Tea-scented Roses are the best, almost every new growth being furnished with flowers. The worst evil that the Rose in the autumn has to contend with is mildew, which spoils the foliage and the flowers. The best specific to use against mildew is flowers-of-sulphur, which should be dusted over them; but if the attack is severe, it is better to use it in a liquid state, which can be done by mixing 2 oz. of soft-soap and 4 oz. of flowers-of-sulphur in 1 gallon of water; let the plants be laid on their sides, and thoroughly syringe the leaves. This procedure will not only destroy the mildew, but green-fly. Red-spider, which may be upon the plants, may be washed off or driven away by diligent syringing with clean water. When Tea Roses are intended to bloom principally in the months of October and November, a special kind of treatment is required, that is, they should be repotted early, and well established in their flower-pots by the end of the summer; and the best kind of potting-soil for Tea Roses consists of three-fourth pasture-loam, one of peat, one of rotten horse-dung, and a fair proportion of coarse sand, with a pint of bone-dust to a bushel of the soil. These Roses for late autumn-flowering are best under glass after the repotting,

else some means must be taken to protect them from heavy rains. Before pruning the plants in the summer, and previous to starting them into growth, they should be kept well on the dry side for a period of six weeks or two months, and be driest when pruned. After the pruning is carried out, let them remain dry for a few days longer, till the wounds made with the knife have dried up, when they may be afforded water sufficient in quantity to moisten the whole ball, and when they have well started into growth they should not lack water, or mildew will attack them.

The Carnations may be grown with the Roses out-of-doors, if no glass-house is available, Carnations, both winter-flowering and others, doing best

COLONIAL NOTES.

JOHANNESBURG.

AFTER nearly six months of severe drought, with fearful dust storms, the summer rains have come to us, to the great relief of everyone. Of frost we have had very little the past winter. In dry sheltered gardens Bougainvilleas and Indian Azaleas are untouched, but in low damp places and on open hill-sides, many young Eucalypti and Casuarinas have lost their tops—a trifle this, as they now begin to grow again.

The rapid growth of Johannesburg is wonderful, as must needs be the chief town of a district which produces five tons of gold a month. Readers of the

Of the lawns in gardens here I have spoken before. The grass used is our native *Cynodon Dactylon*, or Bermuda-grass, which answers its purpose very well. All through the winter trees of *Acacia dealbata* and *A. saligna* have borne a wealth of golden bloom, untouched by wind or frost. Already the first spring flowers are appearing in the green veld. Masses of blue *Lobelia*, white patches of *Helichrysum cæspitifolium*, a purple *Scilla*, a white *Gazania*, pink and yellow *Nemesia*, and a pretty rosy *Gerbera*. Tree planting is going ahead with greater speed than ever, as well it may, with firewood costing 5s. per cwt. Recently I was informed that six-year-old Blue Gums were sold at 20s. each for scaffold-poles. The trees most favoured by planters are *Eucalyptus globulus*, *E. amygdalina* and *E. robusta*, *Pinus insignis*, and *Acacia mollissima*. R. W. Adlam, Joubert Park, Johannesburg, September 24.

SINGAPORE.

Habenaria carnea is one of the most interesting Orchids found in this region. There is considerable variation in the colour of both flowers and leaves. The former, which last in perfection from six to seven weeks, vary from deep salmon to ivory-white; and the latter from light green to dark brown, and dark brown speckled with white. It is of easy cultivation, requiring the same treatment as *Calanthes* of the vestita section, with which it is found associated. After flowering, the foliage commences to die off, and water should be gradually reduced until it is quite dry, after which no more should be given for two or three months, or until the plant shows signs of recommencing growth. This plant was first discovered by myself about four years ago, during a trip to Pulau Langkani, a group of limestone islands sixty to eighty miles north of Penang. A subsequent trip added very few plants to our collection; and as several local collectors who have seen the plant in flower in the Penang Gardens have since gone in quest of it with no better success, it may safely be assumed that it is a comparatively rare plant. C. Curtis, Singapore.

CATTLEYA × CHLORIS.

(BOWRINGIANA ♀, MAXIMA ♂.)

Our illustration (fig. 88) represents one of the fine hybrid *Cattleyas* raised and recently flowered by Messrs. Jas. Veitch & Son, Chelsea, who exhibited it at the meeting of the Royal Horticultural Society on October 10, when it was awarded a First-class Certificate by the Orchid Committee, and duly noted by us at the time. The plant is excellent in all respects; it has the free growth and numerous flowers of *C. Bowringiana*, and also its brilliant rosy-purple hue; while the flowers are so large as to rival the *C. labiata* section in showiness. The labellum is of brilliant violet-purple colour, veined with lines of a still deeper tint, the base being ochre-yellow, veined with dark reddish-purple.

ROYAL BOTANIC GARDENS, GLASNEVIN.

We condense the following particulars from the Annual Report:—

"There is nothing calling for special reference in connection with the Botanic Gardens on this occasion. They have, as usual, been kept in excellent order. It is hoped that, during the coming year, sanction will be given for the erection of the house for succulent plants, which has so often been applied for. The necessity for it has been frequently shown by the injury to valuable plants caused by the unsuitableness of their surroundings.

"Conservatories.—The conservatories are in good order. Any small repairs which were necessary were promptly carried out by the Board of Works.

"Orchid-house.—In my last report I alluded to some alterations which I pointed out as desirable in the Orchid-house. In August these changes were effected, and the beneficial effect on the plants is already observable. The old solid brick staging was removed, and replaced by a substantial open iron and slate staging, rising in tiers. Underneath this a



FIG. 88.—CATTLEYA × CHLORIS.

out-of-doors during the summer and autumn months, and they then flower very freely. The young plants produce the best flowers, and when the cuttings have been put in during the months of January or February, the plants grow to a good size by the autumn, flowering from September to the new year. My collection consists of very few varieties, and these are dwarf and free-flowering; they consist of *Mdlle. Carle*, white; *Mrs. Moore*, large pure white; *Mrs. Llewelyn*, bright rose; *Purity*, white—a robust-growing variety; *Winter Cheer*, the best bright scarlet; and *Miss Joliffe*, pale pink. The same kind of potting-soil will do for Carnations and Roses alike; and generally the plants are grown strong enough to bear flowers in 6-inch pots. Carnations may be grown on to flower a second year, but a great deal of space is required to do them justice, and certainly they do not produce flowers as fine as in the first year. J. Douglas.

Gardeners' Chronicle may doubt this statement, but it is a fact. I have stood on a hill just outside town, and looked down on the great city—like the lady in *Pickwick* "swelling visibly"—directly below a mass of iron-roofed villas, shops, and streets interspersed with masses of blue-black Eucalypti; beyond is the great Main Reef, 30 miles long, with countless smoking iron-stacks, roaring quartz batteries, and towering hauling gear, and beyond the bare undulating open veld widening out in the distance, one mountain ridge rising beyond the other to the sky.

But Johannesburg is very much more than a mining camp built of iron shanties and wooden-huts. Miles of charming villas, each with its tastefully designed and well-planted garden (irrigated with water costing 10s. per thousand gallons), shows that even if we do live on the bleak high veld in a Boer Republic, we are determined to make our lives as comfortable as possible.

space was reserved to hold leaf-mould and fermenting materials. The flow and return hot-water pipes were altered and raised, so as to secure a free circulation of hot water, and an equable diffusion of hot air throughout the house. This hot air has now free access to all the plants in the centre of the house, which was not the case before, and I trust that in consequence the plants in future will be free from disease brought on by cold damp air during the dull months of the year. The general appearance of the house has also benefited from the alterations. The compartment of the Orchid-house in which Ferns are grown was not altered. The Orchids were removed to the propagating pits while the alterations were in progress; and as they were carefully tended, they did not suffer in the least.

"Outdoor Department.—The chief work carried on in the grounds during 1892 was the construction of a new rockwork for Ferns. This new rockwork has been constructed beside the existing fernery, and adjoining the rockwork which was made some years ago. It consists of two banks of stone, with a path between them, sloping down towards the pond, and forms a useful and pleasing addition to the garden.

"The botanical arrangements have been carefully looked to, and every endeavour has been made to keep them as perfect as possible, to make them thoroughly representative, and to have all plants clearly and accurately labelled. The amount of labour involved in this may be gathered from the fact that over 2500 labels were printed and put to plants in the grounds during 1892.

"Arboretum.—In pursuance of the changes rendered necessary by the addition of the new arboretum, the trees in the former Elm class were taken down. The ground where they grew was thoroughly broken up, manured, and cropped, but it will require to be again cropped before it can be relaid with grass. The young plants belonging to the *Pyrus* group, which are being prepared in the nursery ground, will then be planted in it. The class for Elms is now in the new arboretum. The collections of trees and shrubs have been added to, and duplicates have been further removed.

Number of plants purchased, 1890.

Orchids, Ferns, Palms, and indoor plants	...	£198	1	11
Hardy plants, trees, and shrubs	...	32	15	9
Seeds, bulbs for pots and beds, &c.	...	29	10	11
		<hr/>		
Total	...	250	8	7

In 1891, 898 plants were purchased, the following amounts being expended:—

Orchids, Palms, Ferns, and indoor plants	...	£204	16	4
Hardy plants, trees, and shrubs	...	36	17	10
Seeds, bulbs for pots and beds, &c.	...	34	1	6
Total	...	275	15	8

"The number of donations received was 104, the number of donors 78, residing in the following countries:—Ireland 24, England 22, Germany 7, France 4, Australia 4, Italy 3, India 3, Austria 3, Jamaica 2, Scotland 1, Guernsey 1, Switzerland 1, Holland 1, and America 1.

Donations to Garden.

Plants	... 816
Seeds	... 1364 packets.

Donations from Garden.

Plants	... 1073
Seeds	... 29/3 packets.

"General.—The laboratory has been much used by Professor Johnson's pupils, and courses of special instruction in systematic botany have been conducted in it during the greater part of the year. It is a valuable acquisition to the garden, and I trust that its existence may lead to independent work and research by some of the pupils.

"I greatly regret that the two items mentioned in my last report as being so much required have again been struck out of the estimates. They are (1) a house for succulent plants, (2) a house for tropical Ferns.

"The necessity for the house for succulent plants has been recognised and urged by the Science and Art Department, by the Board of Visitors, and by the Board of Works, but other items have hitherto

been placed before it, although not so urgently pressed for. It only remains for me again to call attention to the matter, and to urge that it may be given precedence of all other items."

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

CURRENT WORK.—The most of the species of *Dendrobiums* will have completed their growth for the season, and been removed to a much cooler and drier house for resting. Our plants are placed in a lean-to house, which was used at one time as a late vinery, and facing south it gets plenty of light, and the temperature can be regulated to suit the plants by using artificial heat, or dispensing with it just as may be necessary. Plenty of air can be admitted by means of the lights at top and bottom. On *D. nobile*, *D. Wardianum*, and *D. crassinode*, the flower-buds are swelling, and the same stage has been reached by *D. Ainsworthii*, *D. Leechianum*, and *D. splendissima*. It is my opinion that these two varietal names should be abandoned, and we should henceforth know them as *D. Ainsworthii* varieties, especially as in increasing them the varieties have got mixed up as regards their names, and it is now difficult to say which is which. *Dendrobium Dominionum* is another good cross-bred Orchid, but there are numbers of the variety in commerce which have very pale-coloured flowers, and are hardly worth growing. Another grand cross-bred is *D. Cassiope*, a variety that is nearly always in flower, and seems to require scarcely any rest. We have plants of it which have flowered for the third time this year, and are now making new growths. *D. Venus* seems a shy bloomer as yet, and takes more after one of its parents, *D. Falconeri*, and it is a difficult plant to put to rest, as before one pseudobulb is half-finished, another new one will start. The best method of treating it is to keep it much dryer at the roots than other *Dendrobies*. It is a grand thing if this difficulty about resting it can be overcome, and it can be induced to flower; but I hear complaints of its reluctance to flower from many growers about my neighbourhood. A few of the earliest of the *D. nobile*, *D. Wardianum*, and *D. crassinode*, if these are required about the end of December, should be placed in a house with a few degrees more warmth for a few weeks, and afterwards placed in the stove. *D. Dalhousieianum*, *D. clavatum*, *D. moschatum*, *D. fimbriatum*, and *D. f. oculatum*, will have their growth so far made up that it will be safe to remove them to a cool house for a few months. The house which the plants have occupied hitherto should be cleaned with hot soap-suds, afterwards syringing all surfaces with the hose or garden-engine. The Derbyshire spar, coke, shell-gravel, or other material, with which the stages are covered, should also be washed in hot suds. When this house is cleaned, it will afford a place for the flowering of *Calanthes* and other plants, besides Orchids requiring warmth. Now that plants of *Cattleya labiata vera* are in bud and flower, more water may be applied to them until the bloom is over. A good watering at the time the buds push out of the sheaths gives the flowers much more substance, and they seem to last longer than when the plants are kept dry at the root, although after flowering those that are not showing bud may be kept quite dry for a time.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINERIES.—Where Grapes are grown largely and well, there is now much work in cleansing mid-season vineries and Vines, and in renewing borders, &c., as previously advised. We prefer giving the necessary attention to outside borders towards the time of starting, afterwards thatching or covering the surface with shutters or tiles. Those borders in damp low-lying situations should not be covered with thick coatings of close manure, but dry leaves and litter should be placed as protection from excessive damp instead, and when the weather will permit of this being removed, a dressing of Vine-manure may be given. When late Grapes are to hang till late in December, and then afterwards to be kept till spring in bottles, the borders should be kept dry. Search assiduously for decaying berries bi-weekly or oftener, and use the scissors very carefully while removing them. Use a little fire-heat to expel damp, and while the foliage remains the thermometer should not fall below 50°,

except during severe weather, when 45° may be the minimum. Keep the front lights closed when the weather is foggy, but top air should be judiciously given to allow moisture to escape.

POT VINES.—Where the earliest Grapes are obtained from pot Vines, and the necessary bottom-heat is supplied by means of fermenting materials, some leaves mixed with a fourth part of stable litter should be in readiness by the end of the month. Tan answers well, and should be used rather dry. The Vines should now be under cover, the drainage put right, and the surfaces of the pots dressed, as previously recommended. If any insects have been seen on the rods, a good washing with Gishurst Compound soap, at the rate of 4 oz. to the gallon, should be given, and the house or pit where they are to be started thoroughly cleaned, and no plants which mealy-bug or scale are likely to infest should be in the same structure with the Vines. New borders for Vines are often formed during the autumn, but we prefer only to get the loam put in order at this season, and keep it dry in a ridge.

PEACHES AND NECTARINES.—There is much difficulty in keeping early Peach and Nectarine trees late enough this season. The lights should now be off night and day, where such can be removed, and where there are no portable sashes, front and top ventilators should be wide open. Prune, wash, and otherwise prepare for mid-season crops, and rest the trees as thoroughly as practicable until they are started, bearing in mind that this is conducive to the retention of buds and setting of the fruits.

ORCHARD-HOUSES.—It is seldom these useful structures can be forced profitably, and the use of hot-water pipes, to exclude frost only when bud expansion and growth have begun, and to assist in ripening wood and fruit when necessary, should be used. The trees, whether in pots, tubs, or planted out in beds, should be kept as cool and dry as practicable. Frost should be kept from the roots by means of litter or bracken, but they must not suffer from drought. Any trees planted out that have made gross unfruitful wood may be lifted and replanted, using good fresh loam about the roots.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

TIDINESS IN THE GARDEN.—We have now arrived at a season when tree leaves accumulate fast, as well as other garden refuse, and still the garden should present a tidy appearance. If a fire be made in some out-of-the-way place, where all decaying vegetable matter may be taken and burnt, it will be got rid of with little trouble, and the ashes will be found serviceable for encouraging the growth of crops. The tree leaves should be raked up, and kept dry if possible, as materials for making up hot-beds, either alone or by mixing them with stable-litter. Manure may now be wheeled on to all vacant plots, which should then be dug as deeply as the soil will allow without turning up the sterile sub-soil. Plans may now be made for next season's system of cropping, so that the ground may receive that kind of treatment which the various crops demand; and at this season, as other work allows, all digging and trenching should be completed as far as possible. Let there be plenty of protecting material got in readiness against frost; last year all were caught napping in November, and the frost spoiled many things which, had we the materials at hand, might have been saved. If new walks are contemplated, now is the time to make them, as the materials will get settled down before the spring. Look well to all drains and catch-pits, for if these be not kept open, the water cannot run off the walks.

GLOBE ARTICHOKEs.—It is well to protect the roots of these early in the season, and for this purpose any rough litter will answer, but if fresh leaves be put round the roots, close up to the stems, these being dry, will exclude frost better than anything else. The hearts of the plants must, however, be left uncovered till severe frost comes, for if these are covered up early decay ensues. Flower-stalks and outside leaves should be removed previous to covering up, so that the live heart-leaves may go closer together.

CELERY.—All but the latest lots should now have their final earthing-up. In doing this, the ridges should be brought to a sharp edge at the top, and the sides made smooth, so as to throw off rain. In moulding-up for this last time, press the soil round the leaf-stalks, and do not let any get into the heart. When earthing is finished, the ground between the ridges should be loosened, a practice that will bring a greater depth of soil into use in the

future; and if some manure be dug into it, the soil will be in much better heart for an Onion or other crop next season.

FORCED VEGETABLES.—These will soon be in request, and it must be borne in mind that at this season the forcing cannot be hurried, or bad results will most certainly follow. A slight hot-bed should now be made which will keep a bottom-heat of 75° to 80° for some weeks, and on this Carrot-seed may be sown, but great vigilance must be exercised where tree-leaves are used in its preparation, as the snails and slugs collected with these will soon devour the tender seedlings. Make a sowing of French Beans, and pay great attention to earlier sowings in flower, remembering that a too-close atmosphere will hinder the setting of the flowers; and on every mild sunny day the ventilators should be opened, due regard being had to the strength of the plants, sudden changes in temperature while they are tender causing a check to growth. Do not overcrowd or let the plants lack water, and gather the pods as fast as they become large enough for table.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

THE PRUNING OF WALL PEAR TREES.—With fruit all gathered in, no opportunity should be missed of pruning and afterwards cleaning fruit trees on walls, especially as the weather is now favourable for this kind of work. If the Pear trees are aged, and the fruit spurs of great length, also numerous, the pruning should begin always as early as possible. In dealing with trees of this kind, the longest spurs should be sawn off to within 2 inches of the base, except on that very fine variety of Pear, Doyenné du Comice, which, bearing as it does chiefly wood of two or three years old, should have all the spurs sawn off for 2 feet on each side of the main stem, the wounds being in all cases rendered smooth with the knife. The healthier a tree so operated upon, the better will it break after pruning. But pruning at this season is more favourable to a good break generally, than pruning performed at a far later date; especially will this be the case in a year like the present, when sun-heat still remains in the ground. Any other pruning of Pears will consist in shortening the foreright shoots and the leading shoots, according to the space which is to be covered. The above remarks refer to established trees with branches trained horizontally, or like the ribs of a fan. Younger trees which may have made strong growth should have the leading shoots cut back to 2 feet, this being long enough to ensure a good break along the whole length of shoot. Cordons will require similar pruning, thinning out the longer fruit-spurs, but leaving enough of them to secure a crop. It being, as a rule, necessary to have long spurs on cordons, thinning out and shortening back are operations that have annually to be carried out more or less.

PEAR TREES INFESTED WITH SCALE.—Trees infested with the scale insect are not easily cleared owing to the tenacity with which the insects sit on the bark, and their small size. First loosen the trees from the walls, and with Fir-tree oil, at twice the strength recommended for aphids, and a stiff painter's brush, scrub every portion of the tree, being particular to get at the back of the branches. Gas-water one-third, and clear water two-thirds, applied in the same manner, is a very effectual remedy, as it leaves the bark very unpalatable to the scale; and if any should escape they do not thrive—and thus by repeating the dressing in the winter following, it is possible to quite rid the trees of scale. Apart from the injury caused to the trees by the Pear-tree scale, it also gets on to the fruit, and is not easily removed.

THE FLOWER GARDEN.

By T. H. CRASP.

THE FLOWER BEDS.—The clearing of the beds of their summer occupants must now proceed with expedition, or sharp frosts may interrupt or put a stop for a long time to such work. If the transplanting of hardy plants used in spring bedding be not completed in the present month, they cannot be expected to flower well next spring. Where entire beds are planted with Wallflowers, the soil should be trodden till it is quite firm, and again trodden after planting. This will ensure slow and sturdy growth, enabling the plants to withstand hard frost successfully. As soon as the foliage of Dahlias is slightly blackened by frost, cut off the stems of the plants at 6 inches above the soil, and dig round and lift the tubers without wrenching or bruising them, and put them in a cool airy shed or a

greenhouse, stalk downwards, for a week, storing them afterwards in some frost-proof place; if they can be packed in dry earth or sand, the tubers will not lose so much of their juices as when stored without anything about them. The roots of Marvel of Peru should also be lifted, and treated in a similar manner. The final batch of cuttings of Calceolarias, Gaillardias, Violas, Pansies, Phloxes, and evergreen shrubs of all kinds, should be put into cold frames, employing sandy soil and leaf-mould, 6 inches in depth, which make level and firm, and dibble in the cuttings at 2 or 3 inches apart, then water the whole thoroughly, and keep the frames close and shaded on sunny days for a few weeks.

CALOCHORTUS OR MARIPOSA LILIES.—These splendid Californian bulbs are beautiful when in bloom, which is towards the end of the summer. The present time is the most suitable for planting the bulbs; and a warm border, facing due south, if possible, is the best place for them. The soil should be of a sandy nature, and the bulbs planted about 3 inches deep, using a little sand about each. The bulbs must have some slight protection during severe frost. The following are a few good varieties with distinct colours:—*C. venustus*, *C. v. oculatus*, *C. v. citrinus*, *C. v. roseus*, *C. albus*, *C. splendens*, *C. pulchellus*, and *C. Nuttalli*. The roots of *Anemone appennina*, *A. nemorosa*, *A. vernalis*, and *A. palmata* may now be planted, providing they are in a plump condition; but when they have been bought in and have been kept in paper-bags for some time, they are somewhat shrivelled, and if they are planted in that state, a good many of them would probably decay. In that case the safest plan is to start them in pans or boxes of moist sand, planting them out directly growth begins. They are very effective plants either in patches in the borders or in beds by themselves, and they succeed best if the beds are raised a few inches above the level, much moisture being very apt to prove fatal to some of the delicate varieties.

CLEMATIS of all kinds may be propagated at this season by layering, choosing firm young shoots for the purpose, and making an incision just below a joint, as is done with Carnations, and securing the shoot by means of a peg. The layered shoots may be detached from the parent plant about this time next year.

THE APIARY.

By EXPERT.

WAX SECRETION.—Amongst various experiments conducted by the Entomological Division of the United States Department of Agriculture in 1892, recently reported, was one to determine the quantity of honey that bees consume in secreting 1 lb. of wax. The result arrived at, 8 lb., is somewhat at variance with the generally-accepted theory, that to make every pound of wax, bees require to use 20 lb. of honey. Mr. Simmins tried a similar experiment a few years ago, and found 6½ lb. was the quantity consumed in his case, so that it may be taken for granted that from 6 to 8 lb. will be very near the mark. This low estimate will make it apparent that the bee-keeper does not gain so much as has been supposed in the use of foundation by the saving of honey. Probably he does not recoup in that way at all, so must be contented with the knowledge that he does gain by its use in obtaining more perfect combs, less drone-cells, and better sections.

ARTIFICIAL EVAPORATION OF HONEY.—Experiments are also reported by the Department in the artificial evaporation of honey. It has long been known that the excess of moisture in newly-gathered nectar has to be evaporated by the heat of the hive before it is sealed over by the bees, and can be called honey. As this takes some time to accomplish, it has been thought that if this nectar was extracted as soon as gathered, that the bees would have nothing to do but to continue to bring it in, and larger quantities of honey would be thereby obtained. The apparatus used for the purpose of evaporation caused the thin honey to flow over a surface artificially heated to 120°, and by the time it had run a distance, computed at 150 feet, subjected to this temperature, it was evaporated to the thickness of good honey. The colour, however, was found to be somewhat affected, as also the flavour. In another experiment sun-heat was tried for the purpose, and was found to be more satisfactory, as the flavour and colour were less affected. This method is within the reach of all bee-keepers, as no expensive apparatus is necessary. The honey was simply placed in a shallow pan, 3 inches deep, covered with a piece of glass, and stood out in the sun. In the space of four days about 5 per cent. of moisture

was evaporated, and in three weeks 30 to 40 per cent. of water which had been added to the honey for the purposes of the experiment had disappeared.

WHITE SUPER FOUNDATION.—Many complaints have been heard this season of bees refusing white or bleached foundation in sections, building comb on to the separators in preference, or refusing to go into sections altogether. This should be a warning to bee-keepers to in future ask for and use only super foundations of the natural colour, as the bleaching process renders the wax distasteful to the bees.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

FERNERY MANAGEMENT.—In the tropical or exotic fernery careful attention should now be given to the arrangement, to clearing the surface of the soil, ventilation, and watering. All the trailing plants, such as *Ficus repens*, *Asparagus prostratus*, &c., which are allowed during the summer months to ramble over the pillars and roof for the sake of shade and variety should be well thinned, to allow light to reach the Ferns. Specimen Ferns in pots should be afforded positions where they can be readily observed, and their wants attended to. Decorative plants in smaller pots should be turned round at short intervals of time to the light, so that they may be kept shapely. If woodlice or slugs exist in the fernery, place pieces of Carrot about for the latter, and kill the former at night with boiling water; for catching cockroaches put phosphorus-paste into small bottles, and lay these on their sides, so that the water cannot get into them—small bottles at 2d. each are the best, as they can quickly be gathered up. The American rat poison, "Rough on Rats," sprinkled about the haunts of cockroaches will thin their number. For thrips, syringe or dip in a solution of lemon oil at the strength recommended by the maker; it will not injure any of the fronds, however tender. Specimen Ferns in large pots will now need careful watering, and before affording water, try the weight of the plants sometimes, and if it is found that they are getting light, afford the soil a thorough soaking, putting ½ oz. of good plant-food into each gallon of water, which will have the effect of keeping the fronds of a good colour during the winter. Small plants in pots will require abundance of water, and basket Ferns will need good attention; and some fertilising moss mixed with sphagnum moss as a top-dressing is a useful aid. Ferns planted on walls, pillars, &c., will require heavy waterings with the hose or garden-engine about once a week during the shortest days, but such as are planted in rockwork where the root-run is not restricted, will not want much water. Daily syringing must be discontinued, only the floor being damped down, and if there is a water-tank in the fernery, it may be uncovered, when but little damping need be done. The glass should be kept clean and bright, and air afforded freely by opening the side-lights in mild weather. Temperature 55° to 60° by night, and 65° to 75° by day. In the temperate-house the same care will be required in watering, cleansing, and ventilation. The Australian and New Zealand species of Tree Ferns are usually grown in the conservatory or house of mixed plants, where it is essential they should have the best places. Look carefully for the small shell snails which often infest Ferns, and injure the young fronds of *Cyathea*, *Dicksonias*, and others, hunting for them at night by candle-light. If thrips should get on to the *Gleichenias* avoid fumigating them, but use lemon-oil instead. Keep the drainage of these plants in good condition, and for this purpose fertilising moss placed over the crocks is excellent. Afford air abundantly in mild weather. The temperature for the present may range from 45° to 50° by night; 50° to 60° by day.

HARDY DECIDUOUS FERNS under glass that are grown in pots for summer decoration, and now at rest, may be stowed away for the winter, laying the pots on their sides under plant stages or in a spare place which is cool, but not too dry. Some of the evergreen hardy species are indispensable for winter furnishing purposes, viz., the many beautiful forms of *Adiantum capillus-veneris*, *Aspleniums*, *Blechnums*, *Hymenophyllums*, *Polystichums*, *Scolopendrium*, &c., should be maintained in a clean state and well supplied with water. They succeed well in a temperature of from 30° to 40° by night, 40° to 50° by day.

CINERARIAS.—Give these a cool, airy house or pit, where they can have a little shade from bright sunshine; a watering of clear soot-water will help them. Keep them clean by fumigation; and for mildew, dust the plants with flowers of sulphur.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Plants, Fruits, &c., to be Named.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their inquiries in the current week. Specimens should be good ones, carefully packed and numbered, and not more than six should be sent at one time. Leaves only, or Florists' varieties cannot, as a rule, be named.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

FRIDAY, Nov. 3—Dundee Horticultural Society.

SHOWS.

TUESDAY, Oct. 31—Portsmouth Chrysanthemum.
 WEDNESDAY, Nov. 1 { Kent County Chrysanthemum at
 Blackheath (two days).
 Barnstable Chrysanthemum.
 THURSDAY, Nov. 2 { Highgate and District Chrysanthemum.
 FRIDAY, Nov. 3 { Crystal Palace Grand Chrysanthemum (two days).

SALES.

MONDAY, Oct. 30 { Dutch Bulbs at Protheroe & Morris' Rooms.
 Plants, at Protheroe & Morris' Rooms.
 Dutch Bulbs, Border Plants, Lilioms, &c. (five days), at Stevens' Rooms.
 TUESDAY, Oct. 31 { Special Sale of Hardy Plants and Bulbs, at Protheroe & Morris' Rooms.
 Ninth Annual Sale of 62,000 Fruit Trees, at The Nurseries, West Drayton, by order of Messrs. J. Smith & Sons, by Protheroe & Morris (two days).
 Dutch Bulbs, at Protheroe & Morris' Rooms.
 WEDNESDAY, Nov. 1 { Dutch Bulbs at Protheroe & Morris' Rooms.
 THURSDAY, Nov. 2 { Dutch Bulbs, at Protheroe & Morris' Rooms.
 Plants from Belgium, &c., at Protheroe & Morris' Rooms.
 FRIDAY, Nov. 3 { Dutch Bulbs, at Protheroe & Morris' Rooms.
 Orchids, at Protheroe & Morris' Rooms.
 SATURDAY, Nov. 4 { Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—45° 7.

WHILST everyone admits in principle the propriety of conformity to the rule of priority in the naming of plants, in practice there are various deviations arising from various circumstances,

The Priority Question.

from personal differences of appreciation, from motives of expediency, from carelessness, or other causes. Differences of appreciation may be illustrated by the circumstance that some consider the rule of priority to apply to the specific name only, whilst others apply it to the binominal appellation composed of a generic and of a specific portion. LINNÆUS was the first to use this binominal nomenclature systematically and uniformly, and great has been the convenience of so doing. Others had occasionally, and without set purpose, used two names as part, or even the whole of the designation of the plants they were writing of; hence, it has come to be the general practice, as a matter of conventional expediency, to disregard all specific names anterior to LINNÆUS. But some object to this on the ground that there were great botanists before LINNÆUS, which is of course true, but if this rule of priority is to be strictly followed, we must, of course, go back to primitive and to what are practically prehistoric times. We have, in the case of LINNÆUS and those subsequent to him, some thing to go upon in the way of direct, well-ordered, and duly-recorded testimony—often, indeed, supported by authentic specimens. In the case of the older authors, such evidence as we have is generally shadowy, unordered, and not capable of substantiation by records or by the examination of authentic specimens. In spite of this fact, some botanists break away from the hitherto accepted convention, and seek out the earliest name or part of a name they can find which they suppose to be applicable to the plant, and adopt that as the correct species name.

Turning to the consideration of expediency, the question arises whether in exceptional cases it is more expedient to follow the rule of priority thus strictly, or whether it does not contribute more efficiently to the progress of science and the facilities for its investigation to deviate from it. It is no question of belittling an author, or of depriving him of his rights. It is the plant we want to know about, not the man. We are grateful to the botanist for the trouble he has taken on our behalf, we associate his name necessarily in every case with the history and synonymy of the plant, but not necessarily or invariably with its nomenclature.

The attachment of an author's name to that of a plant confers in itself no more credit on the man than the label affixed to PICKFORD'S van confers honour on that enterprising and valuable firm. It is simply a label for convenience of reference and facility of recognition. If this be so, a breach of the rule of priority when expedient is not a derogation from the merits of any particular author, nor a violation of any ethical principle, but simply a pardonable breach of a convention. The convention exists for convenience-sake only, and if it be found more convenient to break away from it, there can be no moral obliquity chargeable to the individual who acting under circumstances, follows the spirit, when he cannot always be tied to the letter of the law.

Of course the convention should never be broken without due consideration and valid reason. If it is heedlessly broken, the author lays himself open to the direct charge of carelessness, and to the indirect inference that his work is inaccurate.

We may illustrate the matter by referring to the nomenclature of the common Spruce, and that of the common Silver Fir. The name now most generally adopted for the Spruce is *Picea excelsa* of LINK, whilst the Silver Fir is very

generally called *Abies pectinata* of DE CANDOLLE. According to the strict rule of priority, neither of these names is correct, nor is it easy, so great is the entanglement, to say which is the correct name. Thus, generically, both the Spruce and the Silver Fir have at various times been included within the genus, *Pinus*, *Abies*, or *Picea*.

Specifically, the Silver and the Spruce have each received the specific appellations *Elate*, *Picea*, *Abies*, *vulgaris*, and *excelsa*. The Silver Fir alone has received the names *taxifolia*, *mas*, *fœmina* (!), *pectinata*, and *alba*. The Spruce has had the monopoly of the names *baldensis* and *cinerea*.

Hence, according to the practice usually followed at Kew, of considering the combination of the generic and specific names as the one to be adopted, and of attributing priority to the name proposed by that author who first puts a species into its correct genus, the name of the Silver Fir should be *Abies alba* of MILLER (1768). But this name has not been generally adopted, and if it were so now, it would be a source of confusion between it and the tree subsequently named *Picea alba*, and the difficulty of making research into the literature and history grievously intensified.

If, according to the neo-American plan, we go back to the first recorded name, we should have to write *Abies elate*, HOMER. But then we have no proof as to what HOMER or even THEOPHRASTUS, who used the same epithet, meant; and their descriptions would probably apply to any of the Silver Firs, and not to the one we now generally call *A. pectinata*. That the old writers did use the word in a general sense is shown by the fact that HOMER says *ἐλάτη οὐρανομήκης*, the heaven-reaching Fir, and THEOPHRASTUS *ἐλάτη ἡ ἀρρήνη*, the male Fir.

Assuming, as is now generally done, that the tree is an *Abies*, then the balance of usage and convenience is in favour of the term *Abies pectinata* for the Silver Fir, and as such it is chronicled in the *Kew Index*, of which we spoke recently.

In the case of the common Spruce, if we go back to THEOPHRASTUS, we have *ἐλάτη ἡ θήλεια* or the female Fir, whilst PLINY has *Picea*. We need not enter the tangled thicket of synonymy in this case, further than to say that if (as is now all but universal), LINK'S genus *Picea* be adopted we ought to call the Spruce either *P. vulgaris* or *P. excelsa*, both of which names were used by LINK, but of which the latter has in later times been adopted by common consent and general usage. If, on the contrary, we are to follow neo-American plan, we should have to call the Spruce *Picea theleis*, Theophrastus, or perhaps *Picea Picea*, Pliny; a re-duplication of names which, strange as it seems, some authors have not shrunk from adopting in other cases.

These, then, are two instances where rigid adherence to a convention would defeat its very objects by introducing elements of contrariety, confusion, and uncertainty. Surely in such cases convenience, custom, and usage are preferable guides to follow. The completion of the *Kew Index*, one part of which is already published, will afford a complete record of names, and to that it will be to the general convenience to conform as far as possible.

Whilst referring to this subject, we may allude to the criticism of our correspondent, "A. H. K.," in a recent issue (p. 456), according to which we are in error in continuing to use such names as *Pseudotsuga* and *Pseudolarix*. Of course, linguistically and morphologi-

cally the names in question are quite without excuse; but names, as we have urged, are but conventions—mere tallies—and hence it would be more objectionable to frame new generic names than to retain the old ones. The genera in question we consider to be perfectly valid, and, therefore, it would, to our thinking, be an impertinence for us to give entirely new names simply on the grounds that the old names—as mere words—are objectionable.

illustration of new Orchids; most of them are of botanical interest only. *Thelasis* is remarkable for its nearly regular flowers. The species figured are mostly natives of various parts of India, so that the publication serves in a measure as the atlas to the *Flora of British India*, also edited by Sir JOSEPH HOOKER.

TRAVELLER'S NOTES.—Our readers will be pleased to hear that Mr. J. H. VEITCH, of the Chelsea Nurseries, who has contributed so many letters to our columns descriptive of his travels during the last

was resolved unanimously that Mr. Woods be appointed the President of the Society. With reference to the Secretaryship, Mr. JOHN ATHERTON had written, positively declining to continue to act; and after some discussion Mr. CHARLES PARKER, of 11, Cannon Street, Preston, was appointed Secretary.

HORTICULTURAL COLLEGE, SWANLEY.—On Thursday evening, Professor CHESHIRE gave a lecture in connection with the Experiments Committee, on "Fruit Culture," illustrated by lime-light



FIG. 89.—VIEW OF BLETCHLEY PARK, BUCKINGHAMSHIRE. (SEE P. 534.)

LINNEAN SOCIETY.—The general meeting of the above, appointed to be held on Thursday, November 2, at 8 P.M., will be made a special general meeting, for the purpose of electing a Member of Council in the room of the late GEORGE BROOK, deceased. At this meeting the following papers will be read:—1, "A Contribution to the Phanerogamic Flora of Mato Grosso and the Northern Chaco," by SPENCER LE MARCHANT MOORE. 2, "On a new Freshwater Schizopod from Tasmania," by G. M. THOMSON.

HOOKE'S ICONES PLANTARUM.—The October number is entirely devoted to the description and

two years, arrived safely in London on Friday night, the 20th inst. Mr. VEITCH was a passenger from New Zealand in the ship "Ruahine."

PRESTON AND FULWOOD HORTICULTURAL SOCIETY.—A special meeting of the members was held at the Old Legs of Man Hotel, Fishergate, Preston, on Saturday evening, the 21st inst., Mr. S. H. STOTT in the chair. The Sub-Committee reported that they had waited upon Councillor W. H. Woods, Esq., the Vice-Chairman of the Parks Committee, who had consented to take the office of President of the Society for the ensuing year. It

pictures, dealing with cross-fertilisation of flowers, fruit-bearing branches of Apple and Pear, and various nitrifying bacteria in the soil; also views of the Horticultural School of Versailles, and Agricultural School of Grignon, France. The lecture was very well attended. The next meeting is fixed for November 2.

"THE SHRUBS OF NORTH-EASTERN AMERICA."—This volume, prepared by Mr. C. S. NEWHALL as a companion volume to his work on trees of the same region, is intended for popular use, and will be found very serviceable. It is published

by Messrs. G. P. PUTNAM'S SONS, and contains descriptions and outline illustrations of many of the species. The outlines are rough, but characteristic. The Witch Hazel, *Hamamelis virginica*, is said to have the same properties of indicating the presence of hidden springs as the European or true Hazel. No doubt the tradition was carried to America, and applied to the *Hamamelis*. If, however, the notion is really indigenous, it would be very interesting. "Pond's Extract," a quack medicine, is prepared from the same plant, whose virtues were made known by an Oneida Indian. Do these or other Indians believe in the water-indicating properties of the shrub? Our wild *Guelldres Rose* is, we notice, called the Bush Cranberry, or the Cranberry-tree—deceptive names for the unwary. The book is well printed.

"A DICTIONARY OF BIRDS."—The second part of Professor NEWTON's useful and freshly-written treatise brings the work to the article *Moa*. Among the more important articles are those relating to "Geographical Distribution," the principal regions adopted being New Zealand, Australia, Neotropic, Holarctic, Ethiopian, and Indian. Turning to detail, we note the statement that the nightingale does not extend beyond the valley of the Exe in England, nor much beyond York to the north. The Kentish plover is nearly confined to the coast near Sandwich and near Hastings. The red grouse, which is confined to this country, is asserted to be a local form of the widely-spread willow grouse. The article "Migration" is also one which will be read with interest even among those who are not specially interested in birds. Here, in the words of the writer, we are brought face to face with "perhaps the greatest mystery which the whole animal kingdom presents." "Mimicry," again, is an article to which all naturalists will turn, and many will be glad to see the prefix Unconscious added, and thus one source of misapprehension avoided.

BIRMINGHAM GARDENERS.—On the evening of October 23, at the Athletic Institute, the fortnightly meeting of the Birmingham Gardeners' Mutual Improvement Association was held, when it was unanimously agreed that Mr. A. W. WILLS, J.P., of Erdington, who is a warm supporter of the Association, and was the first inaugural lecturer at its institution some eight years ago, should be invited to become President for 1894, in place of the late Sir THOMAS MARTINEAU. The meeting was fairly attended.

THE ROYAL SOCIETY OF BOTANY AND AGRICULTURE OF GHENT.—At a meeting of this Society, held on the 16th inst., Mr. H. J. VERTCH, of the Royal Exotic Nursery, Chelsea, was unanimously elected a Membre d'Honneur, in recognition of his services to botany and to horticulture.

EXMOUTH.—There was a good attendance at the meeting of the Exmouth Gardeners' Mutual Improvement Society at the Institute on the 18th inst., when Mr. W. SWAN, of Bystock, opened the second discussion, the subject being "Gardeners and Gardening." Mr. R. PIKE presided.

PISTILLODY OF THE POPPY.—The substitution of pistils for stamens is a phenomenon which has frequently been observed in a number of species of *Papaver*, and recently by K. SCHILBERSZKY, especially in *P. Rhœas* and *P. orientale*. It may take the form of the production either of partially open, or of entirely closed pistils. He regards this phenomenon as demonstrating the affinity of the *Papaveraceæ* with the tribe *Cleomææ* of *Capparidææ*, and with the *Cruciferaæ*, and he argues (vide *Bot. Centralblatt*, lii., p. 416) that the pistil of the Poppy consists of as many carpels as there are placentæ or stigmatic rays.

THE IMPORTANCE OF HUMUS FOR PLANTS.—The part played by humus in the nutrition of plants has recently been critically examined by Dr. W. HÖVELER. Humus is always the result of the decay of animal or vegetable substances, and is of very complicated composition. It affects not only the chemical, but the physical properties of the soil, rendering it looser and capable of containing a lesser

quantity of water. In soil that is rich in humus, plants develop a much more abundant root-system. An elaborate paper by Dr. HÖVELER on this subject may be found in the *Jahrbuch für Wiss. Bot.*, xxiv., p. 283.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner is fixed to take place at Anderton's Hotel, Fleet Street, on Thursday, November 30, at 6.30 P.M. The President, Sir EDWIN SAUNDERS in the chair, when the Challenge Trophy, Memorial, and other prize cups, with the medals, will be handed to the winners.

THE PRODUCTION OF ALBUMEN IN PLANTS.—Whilst it is maintained that phosphoric acid is necessary for the formation of albumen in plants, manuring experiments show that nitrogenous matter applied alone induces much growth, and this can only be due to the organised nitrogen, inasmuch as the most important vegetative phenomena proceed in the highly nitrogenous protoplasm. The chief reason against heavy nitrogenous manuring is not the waste of the most costly manure with insufficient representation of other manures, but the fear of injuring the crop, either through its becoming too bulky, in consequence of which the plants shade each other, and hinder the production of carbohydrates, or by prolonging the development of the plants, thus delaying ripening. Some experiments illustrative of these conclusions are described by A. MATER in the *Landw. Versuchs Stat.*, xli., p. 433.

"A HANDBOOK OF THE DESTRUCTIVE INSECTS OF VICTORIA."—The Government Entomologist of Victoria, Mr. C. FRENCH, has prepared a second part of this very useful work. It is accompanied by numerous coloured plates, representing the insects in their various stages, and illustrations of the effects produced by insects on the plants. An appendix contains valuable information on spray-pumps and various insecticide solutions.

HOPS IN THE YEARS 1893 AND 1892.—We have received from the Board of Agriculture the following table, showing the estimated total production of Hops in the years 1893 and 1892, with the acreage and estimated average yield per statute acre in each county in England in which Hops were grown:—

Counties.	Estimated Total Produce.		Acreage.		Estimated Average Yield per Acre.	
	1893.	1892.	1893.	1892.	1893.	1892.
	Cwts.	Cwts.	Acres.	Acres.	Cwts.	Cwts.
Berks ...	82	65	11	10	7.45	6.50
Gloucester ...	198	206	33	39	6.00	5.28
Hants ...	21,077	17,221	2,795	2,775	7.54	6.21
Hereford ...	65,939	45,213	7,079	6,797	9.31	6.65
Kent ...	230,891	258,431	34,815	34,058	6.63	7.59
Notts ...	...	35	...	14	...	2.50
Salop ...	1,318	646	123	117	10.72	5.52
Suffolk ...	...	5	21	18	...	0.28
Surrey ...	12,293	9,028	1,845	1,938	6.66	4.66
Sussex ...	50,445	61,170	7,326	7,124	6.89	8.59
Worcester ...	32,686	21,239	3,516	3,369	9.30	6.30
Total ...	414,929	413,259	57,564	56,259	7.21	7.35

AUTUMN FLOWERS AT TRING PARK.—In the various beautiful little gardens at Tring Park, each of which is admirably arranged by Mr. Hill, the gardener, tuberous-rooted *Begonias* have made a more than usually bright display this season, and the plants are still as bright as ever. In the Elizabethan garden, the glowing colours of the beds of dark crimson, red, or yellow-flowered *Begonias*, seem all the brighter by contrast with the background of Yews and other Conifers. A remarkably dwarf, large-flowered strain of the three colours mentioned, is employed, and masses of each colour, with a suitable edging, are harmoniously arranged. Beds of *Anemone japonica alba* (Honore Jobert) are also covered with

flowers, and these, with other autumn-flowering plants, make a good display. In the houses the *Carnations* still furnish numerous blooms; the *Nerines* are not yet over. The house of zonal *Pelargoniums* is literally filled with bright-coloured flowers, and the *Bouvardias*, *Cyclamens*, &c., are in fine condition.

JAPANESE TABLE MATS.—The extension of the trade in what has become generally known as Rush or grass matting has been considerably marked of late. India and China, not many years ago, had the monopoly in supplying the English market with this particular kind of floor-covering, and since then Japan, Corea, and other places in the far East have followed up with mats of their own particular styles, so that our furnishing shops are being constantly supplied with some novelty formed out of native Rushes or Sedges. For smaller products than floor-matting, namely, those articles that are usually classed under the generic term of nick-nacks, we have become quite accustomed to look to Japan, and that progressive country is constantly supplying us with some new article of import. Quite recently we learnt that matches had become a special manufacture with the Japanese, who were able to turn them out so cheaply as to become formidable rivals with Germany and other European countries who are already well-known for the cheapness of their matches. The latest thing we have seen, however, of Japanese manufacture in the English market is a small mat, not for use on our floors, but for our tables—in short, dinner-mats, whereon the careful housewife stands her dishes with the view of protecting the table from the effects of the heat. These table-mats are considerably thicker than those in ordinary use, being about $\frac{3}{4}$ of an inch thick, the substance being made up of the twisted leaves of some species of *Andropogon*, covered very neatly with the flattened culms of *Carex rhynchophylla*, which at the edges and angles are twisted and formed into an ornamental design. These mats are probably not very durable, as they are made very loosely, and except under careful handling would probably become detached. They are said to be imported from Yokohama, and are sold at a few pence each, according to size.

LATE-BLOOMING POPPIES.—At Elham, Kent, in a Turnip-field within a few yards of the railway, the common scarlet Poppies (*P. Rhœas* and *P. dubium*) are making a brilliant show, and, indeed, in other places near Folkestone. The plants are in splendid condition, dwarf, very shrubby, and covered with many buds. It can scarcely be that these are the same plants that were in flower in the spring; so is it possible that they are seedlings which the prolonged summer has allowed to come more rapidly to perfection than usual? In the spring we were surprised to gather Poppies and Primroses in the course of the same walk, but just now the Poppies combine with the fruits of the wild *Clematis* to produce a far more charming and decorative effect.

MADRAS FOREST DEPARTMENT.—The official Report for the year 1891-92 contains full details of the work done during the year. The receipts during the year, although less than in the previous year, were greater than in any other year, and considering the adverse season, it is remarked that the forest work of the Presidency continues to show steady progress.

CHESTER SOCIETY OF NATURAL SCIENCE.—At the annual *conversazione* of this Society, held on the 19th inst., the Kingsley Memorial Medal was presented by Her Grace the Duchess of WESTMINSTER to Mr. E. J. BAILLIE, F.L.S. "In recommending the presentation of the Memorial Medal to Mr. E. J. BAILLIE, his fellow-workers on the Museum Committee desired to acknowledge with gratitude the devotion to the best interests of science, which had been for many years a characteristic of his life. Mr. BAILLIE has given unlimited time and care to the inception and management of the Grosvenor Museum, and the committee felt the Medal had never been better or

more worthily given. The whole building would soon be finished, and it was confidently hoped that, with enlarged capabilities the good accruing would be commensurately extended." The museum at Chester is a model of what a local museum ought to be. As might be expected in such an ancient city, the antiquarian interests claim a great share of attention. The excellent life-studies of local birds and their nests, after the style so well seen at South Kensington, together with the large collection of illustrations of life-histories of injurious insects, form an important feature. All branches of natural science are represented, the specimens are restricted to those collected in the Society's district—Cheshire and North Wales.

MR. E. V. DUTTON.—This gentleman, who took the highest place at the last examination of the Royal Horticultural Society, has been appointed lecturer in agricultural chemistry in the University College of North Wales, Bangor.

JOHNSON'S "GARDENER'S DICTIONARY."—The seventh part of the new edition, edited by Mr. Wright and Mr. Dewar, brings the work down to the word *Sebania*. As a cheap gardening dictionary, it is very serviceable. It is published by Messrs. BELL & SONS, York Street, Covent Garden.

A SECOND CROP OF FIGS.—Calling at Encombe, near Sandgate, recently (the scene, by the way, of the disastrous landslip which occurred last year), we were told by Mr. Brown, the gardener, that he was now gathering from standard trees in the open a second crop of ripe Figs.

PLANT PORTRAITS.

ARUM SANCTUM, Garden, October 14.

CAMELLIA SASANQUA, Garden, October 7.

SOLANUM WENDLANDI, *Gardeners' Magazine*, October 14.

STREPTOCARPUS HYBRID, *Deutsches Garten Magazin*, October.

ZENOBIA SPECIOSA VAR. *PULVERULENTA*, *Gardeners' Magazine*, October 14.

TREES AND SHRUBS.

KOLREUTERIA PANICULATA.

THIS very beautiful low-growing tree is not so well known or planted as it should be. When in flower it is very brilliant, whilst during the autumn its leaves turn to a deep golden-yellow, and the tree is then very attractive; in fact, a tree here, some 30 feet high, has this autumn been a grand picture, making one of the finest bits of colour I have seen for many a day; yet, strange to say, few people seem to be acquainted with it. Many other picture-trees flourish in these gardens, and I would have taken a good collection of autumn foliage to the last meeting but one of the Royal Horticultural Society had my health not prevented my doing so. It is certainly a fact that our predecessors were better judges of suitable trees than the rising generation of either owners of estates or gardeners. *W. C. Leach, Albury Park Gardens, Guildford.*

CHRYSANTHEMUMS ABOUT LONDON.

THE PARKS.—Again the Chrysanthemum appeals from a thousand places to the sympathies of its admirers, nor in vain; and even those who in September did not much appreciate the stands of blooms that were to be seen at some of the shows, and had but little welcome for these unseasonable visitations of a popular flower even, are now as strong in their admiration as the veriest enthusiast could desire. The fact is, the Chrysanthemum is essentially an autumn flower, and its popularity has not been gained, nor will it be

increased, by growers attempting to keep them with us during the whole year. However, everybody welcomes the Chrysanthemum as queen now, and we cordially extend our congratulations to the authorities who are responsible for the excellent displays provided in the parks, &c., of the London County Council. It is to these collections that the millions are indebted for the opportunity to view at all times, and without cost, the prettiest floral sight it is possible to see at this season.

It being impossible to conceive any difference of opinion as to the elevating or humanizing influence of time spent in such manner, this point needs not any argument of ours to enforce, but it may be well to remember the value of these exhibitions that we may not be wanting in appreciation should we visit any of them. Then too, they are the means of much enjoyment to the amateur, who is unable to grow in his small collection many of the varieties he may wish, for at the parks he can see a good number of kinds side by side, and can estimate their qualities according to his degree of technical experience, taking note as to any he may decide to include in his purchases during the next season; and he can also compare his own plants and flowers with those to be seen here, that he may have some guide as to how far he has succeeded in the treatment he has accorded them.

Progression is by degrees in most things, and if we have anything to regret in regard to such displays, it is that there is still a lack of tasteful grouping in regard to their arrangement. Banks of large blooms huddled together as closely as possible do not appeal to the artistic instinct as would nicely arranged groups that the visitor might pass round, and where the whole display is not glaringly visible as soon as the doorway is reached. But it would be unfair to blame the superintendents in this matter, because the houses are all too narrow for such arrangement; as time goes on we may hope to see larger and wider houses for the accommodation of winter flowers in our parks, and then the way will be opened for improvement in the direction indicated. Another hint we may venture to make is, that the directions posted in the parks as to where the display is to be found, can hardly be too plain or too numerous. In one instance, we ourselves were about half-an-hour after gaining the park before the house could be found that was the object of our visit. This, however, could hardly happen on Saturdays or Sundays, when the stream of visitors is so constant as to be sufficient guide in itself.

BATTERSEA PARK.

Only about a mile and a-half from Clapham Junction—one of the busiest stations in the world—this park is reached as easily as any in the metropolis; trams run direct to the park, and from the Victoria district visitors can book to the Battersea Park Station on the Brighton Railway, which is only about two minutes' walk from one of the entrances.

When the park has been gained, make the best way to the western entrance, a little below Chelsea Bridge, and close to the Albert Road, where a very fine display of Chrysanthemums will be ready for your inspection. It is just a week since we had the pleasure of a visit, and it was one of those fine autumn mornings that helps one to appreciate fully a walk through a pretty well-arranged park, such as Battersea, where may be observed the infinite tints in the passing foliage of the trees and shrubs.

The Chrysanthemums are arranged in the same house as last year, but in a rather different manner. Instead of one wide, sloping bank, there are two groups, one on either side, with a path running through the centre. On the whole, the arrangement is an improvement, but is still far different from that we should like to see, but which, perhaps, is impracticable in a house of no greater width than this one. The best has been done with the means available, and the plants, healthy and vigorous, are, we think, an advance upon those of last year.

It is pleasant to note that some of the newer varieties have been added, and one of these, which will be sure of much admiration, is William Seward, lovely crimson, and florets of great length and substance—it is one of the very best of the coloured Japanese. J. Shrimpton, too, is another new one of last year, and is very similar to the one just mentioned; it is bright crimson-scarlet, with golden reverse, and will no doubt become very widely grown.

Of older kinds especially noticeable, the following may be mentioned:—Edwin Molyneux, in capital condition; Avalanche, with large smooth bloom so thoroughly distinct; Albéric Lunden, a good flower, but peculiar in colour; Clement Audiguier, a pink Japanese in very fine condition; Florence Davis, which meets with much appreciation from many "mum" lovers, was well represented, but the flowers were not fully expanded; William Holmes, and Mdle. Lecroix, the latter a good white bloom; Lady Selborne, Lord Wolseley, Bouquet de Dame, white, tinged with lilac; and Colonel W. B. Smith, one of the most popular varieties of last season, were all good. The last-named should be in every collection, from its very fine chestnut colour, and its peculiar and distinct twisting of the florets. Many more well-grown specimens of different varieties might be mentioned if space permitted, but sufficient has been said, perhaps, to induce any interested in these autumn displays, to include that at Battersea among those they will visit. Situated in such a populous district, the number of visitors is always large, and if notes are to be taken, and comparisons made, it will be better to go during the week, the crowd usually present on Saturdays and Sundays being so great. Last Sunday there were between 3000 and 4000 people. The house contains about 2000 plants, and there is a reserve of about 200 for succession. Mr. Coppin, the superintendent, and his assistants, are to be congratulated on the result of their efforts.

SOUTHWARK PARK.

When we visited this park last year the accommodation then existing and available for Chrysanthemums was quite inadequate, and we are glad to find that a new portion has been added to the house, at an expense of something like £500. The house, as it now stands, is in the form of a half square or triangle, each wing measuring 45 feet long, and 24 feet wide. They are span-roofed, and from next spring the house is to be opened to the public as a summer and winter garden, which will no doubt be much appreciated by the people in this poor and congested district. The arrangement of the plants here as last year, is not quite the same as seen in most of the parks. There are plants all round the sides of the house, and paths intervening between these and centre groups with serpentine verge. This is the only place we have visited at present where there has been any departure from the "bank" system. Plants of *Cobaea scandens*, trained along some of the rafters, also tend to enhance the appearance of the whole. Of all the parks under the County Council, this one is least favourably situated for the growth of Chrysanthemums, and great praise is due to Mr. W. Bailey, the superintendent, and to his assistant, Mr. D. Carson, for the display they have succeeded in presenting. There were not many of the newer varieties in the collection, and the incurred section being rather later than the Japanese, was not represented by many blooms at the time our notes were taken. There were some fine flowers of Madame Louise Leroy, a pure white full flower, with pleasantly-twisted florets; and that rich golden-yellow variety, Gorgeous, also attracted attention. Charlotte de Montcabrier was present in numbers, it is a pretty, rather flat rose-coloured Japanese. The very finely coloured Mrs. William Walters was also noticeable. Ed. Molyneux, Peter the Great, George Gordon (very large), Monsieur Astorg, Mdle. M. Farbe, Mr. Bunn, William Holmes, and Elaine, are others that will be admired. Louis Bohmer was just opening its buds, it being the only representative of the "hairy" section we noticed. The park is

about seven minutes' walk from South Bermondsey Station on the London, Brighton, and South Coast Railway.

THE INNER TEMPLE.

It was in the gardens belonging to the Benchers of the Inner Temple that the first display of this kind was opened free to the public, and it has never failed upon any occasion since to maintain its own precedent. This year Mr. Newton has got much better flowers than were there last season, and some of them will compare with the greater part of those to be seen elsewhere. The accommodation is very small, however, and the disadvantages necessarily inseparable from cultivation so near the centre of the metropolis has been against the plants, which appear to have had great difficulty in preserving their foliage, a fact that is exposed perhaps unduly by the manner in which the plants are staged, admitting of no edging in front. The blooms are good though, and visitors will be able to see many of the latest novelties. The white variety of Louis Bœhmer had some good blooms, and will this year be a much-admired flower. Some of the largest flowers were of the following varieties:—Vivian Morel, Albéric Lunden, W. K. Woodcock, Miss Minnie Newton, a pretty yellow Japanese; F. A. Davis, Sunflower, La Triomphant, Colonel W. B. Smith, W. A. Manda, Bouquet de Dames, Mr. Chas. E. Shea, A. H. Neve, and Prince of Wales.

ROYAL EXOTIC NURSERY, CHELSEA.

Those who were able to visit the meeting of the Royal Horticultural Society at the Drill Hall on Tuesday last, would be sure to notice the group of fine Chrysanthemum plants staged by Messrs. J. Veitch & Sons. The collection at Chelsea this season is superior in the quality of plants and flowers than is usual. The plants are well grown, stiff, with good foliage, and the flowers are very large and well formed on the plants, that have been cultivated to produce exhibition blooms. Just now a large span-roofed house is filled with a collection of the choicest and newest varieties only, and in another week or so, a very good display will be there. We can only notice a few of the novelties, and others of the more prominent varieties. William Seward is in fine form, and has splendid crimson florets of great length and substance; the variety is becoming so popular, that it now needs but little description. *L'Enfant des deux Mondes* is a very free white hairy flower, and is much after the character of Louis Bœhmer. An American variety, G. W. Childs, has a handsome flower of deep crimson shaded with gold; it is a short grower, and was not at its best when these notes were taken. Beauty of Exmouth is a pure white variety, good for every collection. Miss Dorothy Shea is a capital bloom, of bright terracotta colour; its florets have buff reverse, and are broad and rich.

Another of the new crimsons is J. Shrimpton; it has very flat florets, and is not a tall grower. Madame Thérèse Rey was only certificated at the last meeting of the National Chrysanthemum Society; it is a handsome flower, not quite white, but pleasing cream-coloured, with pale yellow towards the centre. Robert Owen, the new incurved Japanese, was not yet out.

Some good blooms of the incurved Baron Hirsch were to be seen, and Miss Anna Hartshorn was particularly noticeable; its florets are very broad, white, and they are less flat than many of the whites. Some extra large blooms of Colonel W. B. Smith were on plants that were raised from late cuttings, but they lacked colour, and were not so good as other and smaller flowers on older plants. G. C. Schwabe is a very fine Japanese of distinct carmine, with gold reverse, and which, when the flower is opening, is very pretty indeed. President Borel is useful, because its colour is not common in Chrysanthemums—rose, with yellow reverse. Some capital blooms of Louis Bœhmer will commend themselves to some who dislike this variety when but indifferently grown. Other ex-

cellent blooms were Florence Davis, Stanstead Surprise, W. H. Lincoln, Ed. Molyneux, and Mons. R. Bahuant (incurved).

(To be continued.)

HOME CORRESPONDENCE.

HYDRANGEA HORTENSIS.—Where this plant produces blue flower-heads in the natural soil it is entirely owing to some mineral constituents in the soil; because I know of gardens that produce both pink and blue flowers, and the soil differs in the various parts where the change of colour takes place. Generally, where the blue flower-heads are seen the soil is clayey; I have not observed blue flowers in sandy soil. Perhaps the finest bush with blue flowers that I have noticed is growing close to Torquay in the "wild garden" belonging to Mr. Mallock, but this is not of an intense shade of blue as some that I saw at Melchet Court, near Romsey, some years ago. When Hydrangeas are grown in pots, sulphate of iron added to the soil at the rate of $\frac{1}{2}$ lb. to 1 bushel of ordinary compost, will give the desired blue colour; and directly the flower-heads show, the plants should have some alum-water given them alternately with clear water, at the rate of $\frac{1}{2}$ ounce to 1 gallon of water. In supplying the plants with this latter there must be no lack of attention, the alum-water must be continuously supplied to the roots. S. [Is a change of colour ever seen in *H. paniculata*? Ed.]

SECOND-CROP APPLES.—As an example of what the exceedingly mild season is doing in Bute, I send you a second-crop Apple 2 $\frac{1}{2}$ inches in circumference, and some others just beginning to swell, also an Apple-blossom. These were growing in Councillor Wallace's garden, close to the sea-shore in Rothsay. Laburnums in some places are in flower, and on every side there are indications of the prevailing mildness. Many herbaceous plants here are continuing in flower long past their usual time, while others are blooming a second time. M. Cuthbertson, Public Park, Rothsay.

TRANSPLANTING.—The recent heavy rains, so much needed, and so acceptable, should make nurserymen busy. But for the rains, they would have been in bad case, for whilst trees and shrubs have made far better growth than could well have been expected, the soil about the roots previously was so dry, that to lift or to plant seemed to be suicidal. Now all is changed; not that the rain has penetrated deeply, or that the soil is exceptionally moist—it will need a full winter's rain to get it into that condition, for once deeply dried it takes an immense rainfall to again moisten it, so that deep roots may be benefited. But nurserymen will become active only when customers are equally so. Were these wise, they would send in their orders for trees and shrubs as early as possible; the man who has first pick gets the best; the man who gets first served has the cream of the autumn and early winter, during which his new plantings may get established. Trees and shrubs, even when apparently in a condition of perfect rest, yet when then are newly planted, soon make new roots. Indeed, within a month or so the minute fibres seem to have been emitted, and are already *en rapport* with the soil, seeking for and finding food and moisture; then, when the spring comes, and the warm sunshine literally compels leaf development, the roots are full of life and vigour, and are capable of supplying all the demands that Nature may make upon them. How much better, then, is the result than is the case when the transplanting has been left until the late winter. But the active autumn season is too frequently but a short one. Very soon after leaf-fall comes frost, and if it be hard frost of some weeks duration, how often does it happen that the winter is all over, and the season has been lost, whilst the transplanting remains unaccomplished. To delay ordering from the nursery is to trifle with a whole year, for if the season be lost, the year is lost too. Even in the case of a dry summer, that may follow upon a late planting, how much risk is run! This past season saw myriads of trees and shrubs die utterly because they were not autumn transplanted. Those that were so did fairly well; those that were left till February and March have failed wholesale. Another reason why transplanting should be done in the autumn is, that very often other work is hindered until that is complete. It may be that it is in an orchard, or a shrubbery, or plantation, or in

an ordinary kitchen garden, and in all cases it is important that planting or cropping of ordinary descriptions should be done early also. How advantageous it is all round to have a clear field for the performance of this needful labour in the early spring, when the planting of trees and shrubs is done, the soil about them made neat and even, a mulching of manure laid about the roots, the colder air above serving to force root-action in soil that is several degrees warmer. A. D.

QUERCUS MIRBECKII (Q. PRINOS?)—With this I have sent you specimens bearing acorns, and would here mention that this species of Oak is a great favourite with His Grace the Duke of Northumberland. It is a fine tree, rapid in growth in very wet, sandy soil, with large foliage, and it is, moreover, nearly evergreen, thus forming a striking object among other trees. I have not seen it in a fruiting state before, but I dare to say that you will have seen specimens before. W. C. Leach. [The specimen sent was *Q. Prinos*, the Chestnut-Oak of the United States. Ed.]

LARGE PEAR, UVEDALE'S ST. GERMAIN.—It may possibly interest your numerous readers to know that I recently gathered seventeen Pears (Uvedale's St. Germain) from a small tree, six of which weighed 12 lb., the largest pulled the scale at 2 lb. 10 oz., a very fine specimen in form and colour. The circumference of this Pear is round the base 16 inches, lengthways 19 $\frac{1}{2}$ inches. Douglas Kevan.

THE LENGTH OF LIFE OF A PLANT OF PHALÆNOPSIS.—With reference to Mr. S. Courtauld's note regarding the length of life of *Phalænopsis*, I may mention that I have seen thousands of *Phalænopsis* in a wild state, and some of extraordinary age and dimensions, such as would scarcely be believed by growers at home. (See note regarding *Phalænopsis Tetraspis*, *Orchid Review*, vii., p. 209.) I feel quite convinced that I have seen many plants one hundred years old. I can at the same time quite understand a traveller being misled into thinking the *Phalænopsis* short-lived, unless he penetrated the far jungles, or visited the tropical islands. These delicate plants flee before civilisation; the clearing of a breadth of jungle for cultivation in their neighbourhood will destroy the plants, in consequence of the reduced amount of moisture in the atmosphere. Also plants brought in from the jungle and grown in the open in the east never do well. These circumstances will also account for the opinion expressed by Mr. Courtauld's friend. I feel sure that any collector who has penetrated far into the interior away from cultivation, or visited the islands situated in the tropical belt of continuous rainfall, will agree with me that the *Phalænopsis* is by no means a short-lived plant. Most of the varieties which are difficult to grow come from the islands in the tropics, the atmosphere of which we cannot imitate. I am of opinion that evaporating troughs or hot pipes through tanks are injurious to the health of *Phalænopsis*, especially in winter. I find that there is nothing better than Oak leaves, 1 foot deep in winter. By keeping Oak leaves damp sufficient moisture is given off to keep the leaves healthy, and the necessity of watering is much reduced. I have healthy plants now in my *Phalænopsis*-house collected by me in 1880. Emeric S. Berkeley.

I cannot let Mr. S. Courtauld's note in *Gardeners' Chronicle*, Oct. 14, p. 458, pass without comment. I should much like Mr. Courtauld to see our plants of *Phalænopsis Schilleriana*, *P. amabilis*, *P. grandiflora*, *P. Stuartiana*, and *P. violacea*, which have been cultivated for the last twelve years to my certain knowledge, and also long before I took charge of this place. I can assure him that these plants have always flowered well each year for the period of time I have named, and the past summer they made leaves larger than ever before. Some of the plants of *P. Schilleriana* have made two leaves 16 to 18 inches long, and 5 to 6 inches wide. Old plants of *P. amabilis* have as many as ten fine leaves on one stem; other plants with three growths having from six to eight leaves each, which measure from 9 to 12 inches, and in some cases more. *P. grandiflora* has been grown here the same length of time, and possesses seven grand leaves; and one plant of this species which was staged at the Manchester Whit-sunweek show this year, and stood there a full week, carried a spike of twenty-four fully expanded flowers; and afterwards the plant was pulled out of the old cylinder, and placed into a new one. It is now just furnishing the second leaf this year—in

fact, since June. I might give the measurements of a number of plants, but my note would, I fear, be too long. I have no hesitation in saying that *Phalænopsis* may be grown for as long a period as either *Dendrobium*, *Odontoglossum*, or any other Orchid, if the requirements of the plants are attended to. *W. H.*

VIOLETS AND FOGS.—The experience of a lady in the Regent's Park with respect to the difficulty experienced in the production of Violets in the winter is somewhat widespread, at least in and to a large extent on the western and southern sides of London. Even so far down as my old residence, 15 miles from Charing Cross, it had become very difficult to grow Violets, even of the hardy single Russian or Czar out in the open, and yet when I went to reside at Bedford, some twenty-two years ago, Violets flourished wonderfully, and seldom during the winter lost a leaf. Now it is not at all uncommon to see Violets quite denuded of leaves, showing only bare crowns, that, of course, in the spring produce poor and late flowers. There seems to be very little money in Violets now, at least on that side of the metropolis, and it does seem as if on the west side of London the fogs were the most destructive, because they prevail only when there are very cold atmospheric depressions, which usually come from the east. When south and west winds prevail, there are no fogs. A grower for market of double Violet plants by tens of thousands finds it absolutely needful to winter his stock in the form of runners or cuttings dibbled in very thickly into frames, or else planted out under hedges, and covered with mats during fogs and the prevalence of hoar-frosts. It seems in all this fog-cursed area almost needful to grow the plants in winter in greenhouses, for in these, by the aid of fire-heat, the harmful effects of fogs may be much mitigated. Plants so treated certainly would not, through annual loss of leafage, become weak or attenuated. The grower to whom I refer finds that wintering the young runners or cuttings only leads to the reproduction every year of fine robust plants, indeed his stock this autumn was remarkably strong and healthy. The great mischief done is found when black fogs prevail, and then one or two days' immersion in the foul vapour, especially if accompanied by white frost, suffices to kill leafage wholesale. After all, growers of single Violets by many acres for flower production, and their pickers, are thus the greatest sufferers. *A. D.*

POTATOS THIS SEASON.—With reference to the remarks of "Constant Reader," I have not this year grown any field Potatoes, but have had just 32 poles or thereabouts for household purposes in my garden, which is on a very steep slope facing the west. One half of the ground has been cropped with *Magnum Bonum*. I do not recollect for years having had such a good crop, all round, in quantity and quality. The rest of the ground was cropped with various kinds for trial, with one exception, called *True Blue*, which I got from Germany; they have all cropped heavily for the quantity planted. One Potato, which I got in Spain, has done wonderfully well, and I shall keep it for a crop next year; I do not know the name of it, but on my return to London in November, I will bring a few for your identification. The Potatoes on the higher ground of the garden slope were all larger than lower down, the soil being the same throughout. I have no doubt I should have had but a poor crop in this late dry season but for having facilities for obtaining water. I am experimenting with the black Potato which I mentioned to you last year, but am disappointed with the size; I have, however, had a few cooked, and I am so satisfied with their taste, that I am keeping all I have for seed. *J. A. C.*

—"Constant Reader" may be interested to learn that his case is not at all a singular one this year, but it would seem as if this supertuberation to which he refers had been found more developed in the *Magnum Bonum* section than in any other. Of course, it is entirely due to the unusual drought of the summer checking tuberation, then followed cooling showers, which did not go deep enough to affect the roots of Potato plants, but did suffice to create a new activity amongst the tubers, and mostly so in those that were nearest to the surface. But a few weeks since, I assisted in the lifting of some thirty-six diverse varieties of Potatoes that had been planted for trial on a very open piece of ground in Surrey. The soil was dry when the planting was done, it was almost as dry when the lifting was performed, and yet in numerous cases quite large crops resulted. But I

was particularly struck with the fact that, whilst supertuberating was not appreciably evident in the bulk, it was so marked in four varieties that were of the true *Magnum Bonum* type, that these call for special mention. They were *The Bruce*, *Stourbridge Glory*, *Reading Giant*, and *Congress*, all the tubers being more or less elongated or grown out at the crown end, some of them most ungainly, and few that had any decency of form. The result satisfied me that this supertuberating was as much due to soil or strain as to season, for other fine varieties, *Chancellor*, *Prime Minister*, *Satisfaction*, *Her Majesty*, *The Dean*, *King of the Russets*, *Jeannie Deans*, *Triumph*, and others, retained their forms admirably. But under no circumstances should these *Magnum Bonum* forms be discarded because of the accident of a season. Round or flattish-oval forms do not lengthen with new growth as long kidneys will. Of course, the trouble would not have come had the season been moist, or a few waterings could have been given. After all, no great harm has been done, as there seems to be generally a heavy crop of Potatoes. *A. D.*

ODONTOGLOSSUM AND PHALÆNOPSIS.—An explanation (replying to "G. S." in last week's issue of the *Gardeners' Chronicle*, referring to the above subject, I may say that it is an error, and should have read, "*Odontoglossum Phalænopsis* should, after this date, be placed at the cool part of the stove, or where the warmth is not less at night than 60°. *Miltonia Roezlii* winters well in such a house." As I have not tried to grow *Odontoglossum* and *Phalænopsis* together, I cannot say how they would succeed, but I do not see any reason why they should not be so grown. *W. Holmes.*

RYECROFT HALL, AUDENSHAW, NEAR MANCHESTER.—I paid a visit the other day to the above place, the Lancashire home of *Abel Buckley, Esq., J.P.*, and saw a most unusual sight for the middle of October, namely, a fine crop of Strawberries in a span-roofed house; this, of course, is mainly owing to the extraordinary season we have had. In fact, the fruit I saw was a reflection of the season. The kinds consisted of *Laxton's Noble* and *President*, and the plants had produced a good crop in the early spring. The locality is not favourable to horticultural pursuits, consequently the result is so much the more satisfactory. Roses and plants of a decorative character for home use are largely grown. The subject of domestic gardening is one that should occupy the attention of gardeners to a much greater extent than is the case in many instances; there are so many plants now in cultivation suitable for the purpose I have named, that no house need be without a plant to beautify the home. In a large mansion like *Ryecroft Hall*, in which Nature and art to adorn the home combine, what charming scenes can be produced by a judicious selection of plant-life associated with the artist's productions! This blending of the two is a subject worthy of careful consideration. Mr. W. Hough, the gardener, loves his work, and therefore it need hardly be said that the gardens and surroundings are well kept. *Bruce Findlay.*

THE KEEPING OF APPLES AND PEARS.—I do not know if it is generally the case this season, but we find Apples, Pears, and Quinces keep badly this season, and particularly *Ribston* and *Blenheim Orange* Pippins, and *Wellington* Apples; and of Pears, *Marie Louise*, *Comte de Lamy*, *Doyenné du Comice*, and *Knight's Monarch*. It is not injury done by wasps which is causing the fruits to decay. Quinces are decaying in the same mysterious manner, and 2 bushels of these fruits rotted which were gathered only a few days since. Many fruits of *Marie Louise* Pear have decayed on the trees here, and in this district. *W. A. Cook, Compton Bassett.*

PASSIFLORA QUADRANGULARIS.—I am sending you with this a box in which I have packed two fair-sized fruit of this edible Passion-flower; I have also pressed in two leaves with them. We have still a few fruits hanging on several plants, one being in a pot in an ordinary stove, and another planted out in a *Banana-house*. From some cause or other these invariably show flower and ripen their fruit much later than our most prolific plants. These latter are planted out in a portion of bed in a *Pine-stove* facing due south. The house is a lean-to, 8 feet 6 inches high at the back, 50 feet long, only one path, which is at the back; over this path the *Grenadilla* is trained, and grows most vigorously. The plants early in the spring are cut back nearly to the old wood. With a brisk temperature shoots soon

appear; the strongest are retained, and tied along the wires. By about May the whole space is covered. Flowers open very numerous; each one was fertilised until some 200 were set; these rapidly swelled up as large as those sent, and as they ripened were used as a grand addition to the dessert. By July and August the whole were gathered, when another good crop of flowers appeared, and were set; this second crop numbered over 170; these, too, swelled up and ripened, and were all gathered by the end of September; so now, as I intimated, our season with this fruit is still continued by those in two other houses. We find this form rather disposed to harbour filth, but the constant application of the syringe has kept it this season remarkably clean. Altogether, we have this season gathered nearly 500 fruits. On cutting the fruit through a very thick rind is observed, which encloses the seed embedded in a rich juicy pulp. This portion is eaten. At first, some dislike the taste; but almost invariably, as soon as the first novelty is over, a request is given for a second venture. The fruit is very highly esteemed here. *W. Swan, Bystock, Exmouth.*

LATE PEAS, ETC.—From seed sown on Aug. 17, we are now gathering splendid dishes of *Veitch's Chelsea Gem* Pea. I consider these Peas are the cream of early or late varieties; coming in now, they make a nice addition to culinary vegetables. We are also enabled to gather *Raspberries* and *Strawberries* in fine condition, and *Laxton's Noble* amongst *Strawberries* and the *Belle de Fontenay Raspberry* are wonderfully good. *W. A. Cook.*

SWEET-SCENTED GRASS.—The Sweet-scented American Grass that your correspondent, "J. R. H.," enquires about is *Hierochloa borealis*, R. and S. It is commonly known in this country as *Holy or Sacred-grass*, because it was formerly used for strewing on church floors on festivals. *The Students' Flora of the British Islands* gives its localities in Britain as "*Witbanks*, *Thurso*, and formerly in *Forfarshire*," and its distribution, "*Arctic*, *Alpine*, and *N. Europe*, *N. and W. Asia*, and *N. America*." Whether the smell of the British-grown grass is equal to that used by the Americans for making table-mats and various ornamental articles, I am not able to say by actual comparison, but the fragrance of the American articles always seems to be the most powerful. Though the grass is often used, as your correspondent says, in combination with *Birch-bark*, it is very frequently used alone for making into boxes, small baskets, table-mats, &c., which retain their agreeable fragrance for a very long period. There are good examples of these manufactures in the *Kew Museum*. *John R. Jackson, Kew.*

BATAVIAN ENDIVE.

PERMIT me to direct a little attention to this excellent vegetable, which is, in my opinion, the finest salading plant in cultivation at this season of the year. There is nothing at all comparable to it, and yet how little it is known, and how seldom seen. Beyond a few of the better private gardens it is almost unknown as a crop—you can scarcely find it in *Covent Garden*, and it is rarely to be seen on the exhibition table. Everywhere you meet with curled Endive, beautiful to look at, but for quality not to be named on the same day. It is strange how this neglect or this preference should arise; it cannot be on account of any difficulty in its cultivation, for nothing could be simpler or easier. It is even more so than the curled, and every gardener knows how very simple that is.

There are, broadly speaking, two classes of Endive: the curled-leaved and the broad-leaved or *Batavian*; with the former I have no concern at present beyond expressing my admiration of the beautiful white "cushions" of curled Endive which comes from France, and may be seen garnishing the dining-rooms in and long after midwinter, when we have not a scrap left, notwithstanding all our skill and care.

There are several varieties of the *Batavian Endive*, some suitable for summer and autumn use, some for winter. The winter varieties do not succeed well in our climate, so may be dismissed. The variety I want to bring to the front is called by Messrs. *Vilmorin* "*Broad-leaved or Batavian*," by Messrs. *Veitch & Son's* "*Improved Round-leaved*," and by Messrs. *Barr & Son* "*Broad-leaved Green Batavian*,"

and may be seen growing with several others in the gardens at Chiswick.

As already stated, the cultivation of Endive is extremely simple, being similar to that of Lettuce: one point is, that of sowing at the proper time; if sown too early, they are apt to bolt, i.e., run to flower—and if too late, they do not form hearts, and are then worthless. A good deal depends on the season, but the beginning of July may be reckoned a good time. It is well, however, to make two or three sowings when the conditions are favourable. The plants grow to a great size, forming large rosette-like hearts; the leaves incurving and hooding over, thus partially becoming blanched. To have them in perfection, the heads should be tied up some six or eight days before being required. When ready, the blanched hearts, almost as large as young Cabbages and clear as ivory, are beautiful to look upon. There is a tenderness and a crispness about it also which does not pertain to the curled Endives, and a nuttiness of flavour which is not found in Lettuce or Celery. Let those who doubt it try. *B.*

BLETCHLEY PARK.

AN hour's run on the North-Western Railway from Euston takes us through an interesting and varied stretch of country. We pass through part of Middlesex and Hertfordshire into Buckinghamshire, in which country lies the subject of our illustration. There is little or no historical interest attached to this part of Buckinghamshire that is worthy of mention here, and Bletchley Park, until about ten years ago, when its present owner, H. S. Leon, Esq., M.P., took it in hand, was so much grazing land. To illustrate what a clever, painstaking gardener can do, it is no exaggeration to say that Bletchley Park can take its place among the foremost of our English gardens, and no small amount of credit is due to Mr. A. Hislop for this state of affairs.

On arriving at the gates of the park, a splendid avenue of Elms cannot fail to excite admiration. It is about three furlongs in length, and composed of as even and well-shaped a lot of trees as one could wish for. The grounds in the immediate vicinity of the house are judiciously planted with handsome shrubs and Conifers, noticeable among which are nice specimens of *Abies Pinsapo*, *Abies Nordmanniana*, some shapely pieces of *Librocedrus decurrens* and *Thuia orientalis*. Immediately in front of the house is a fine bank of shrubs and Conifers, the whole backed by a well-grown Yew hedge, which serves not only as a shelter to the plants, but also to the house.

The summer-bedding is a good feature here, Mr. Hislop's style being to have groups as much as possible; thus we find here a bed of a bright *Tropæolum*, the neighbouring one being full of the dark variety of *Heliotrope*; further on, some bright foliaged *Pelargoniums*, the whole contrasting and blending harmoniously. There is a good Rose garden, and many of the finest varieties and latest novelties are grown.

The fruit and kitchen garden occupies an area of 4 acres, and that which strikes one very forcibly in this as in other departments, is the extreme cleanliness and tidiness maintained. Only the best and most useful fruit trees are cultivated, and a new garden has an advantage in this respect, as it can benefit by the experience of those of longer standing, and choose only well-tried and meritorious varieties for cultivation.

Fruit under glass is well represented, and this year has been an unusually good one, as many as 4000 fruit being gathered from a Peach-house 90 feet by 16 feet, the varieties principally grown being Noblesse, Sea Eagle, Royal George, and Princess of Wales. Nectarines are confined to one variety, viz., Pitmaston Orange. The early vinery is planted with Madresfield Court, Muscat of Alexandria, and Black Hamburgh; while the late vinery is now in full bearing with fine crops of Gros Colmar, Black Alicante, and Bowood Muscat.

In a garden of this description, where all classes of plants are so well represented, it is difficult to say

what is the predominating feature; the first place, however, must be given to the Orchids, which occupy some five or six of the many houses found here. All kinds of Orchids are grown well, and each section bears testimony to the skill and attention afforded them. At the time of writing there is a very showy display of plants in flower, noticeable among which is a very fine strain of *Vanda cœrulea*, from Messrs. Low's last importation; the great size of the flowers, and the intense blue colour thereof, single them out from ordinary forms.

A useful and effective plant, flowering at this period, is *Cattleya labiata* var. *Warocqueana*, many fine forms of which are to be seen; some plants are exceptionally well done, having four and five sheaths, each sheath giving from three to five flowers. A glance at the following list of names of plants in flower will serve not only to show how successfully the plants are grown, but also the varied character of the collection:—*Cattleya maxima peruviana* may be seen carrying fifteen flowers; *Calanthe maculata*, a rare and curious little species; *Cattleya Bowringiana* in fine variety; *Cypripedium insignis*, old and new varieties; *C. Sedeni*, a fine specimen, and a good specimen of *C. Schlumieri*, *C. Dominiana*, and a superb variety of *Spicerianum* raised from seed by Mr. Hislop; *Lælia autumnalis*, *Perrinii*, *elegans*, *præstans*, *purpurata*, *Boothiana*? (just expanding); *Lycaste Skinneri*, *L. plana*, which flowers here all the year round. *Dendrobium macrophyllum*, yellow variety; *Cattleya aurea*, in several fine forms, are a special feature, and are well done; *C. Aclandiae*, of a very superior strain, introduced by Messrs. Linden, and out of which many new things have emanated; *C. gigas*, a fair variety, two plants of which were in flower; *Dendrobium Phalænopsis* in variety, *Sophranitis grandiflora*, *Phalænopsis amabilis*, fine form; various forms of *Odontoglossum Alexandræ*, *Celogyne barbata*, &c. One house is set apart for *Vandas*, and in addition to several fine varieties of *V. suavis* in flower, there are nearly forty spikes showing for flower.

A corridor, handsomely furnished with a rockery in which many varieties of Ferns luxuriate, runs at right angles with the Orchid-houses, which gives the owner the advantage of remaining in a uniform temperature during his stay in the houses, and also serves as a protection against cold and drying winds. The plants in flower are staged effectively between the Ferns on the rockery before mentioned, and produce a striking effect.

The hybridisation of Orchids is carried on here on a small scale, and many interesting novelties will doubtless be forthcoming in time. Stove-plants are well in evidence, leading varieties of *Crotons*, *Dracænas*, *Dipladenias*, *Ixoras*, &c., all making a pleasant brightness.

The greenhouse is at the present time well stocked with a fine lot of zonal *Pelargoniums*, whose large trusses and vivid colours almost shake one's faith in Orchids. In a house adjoining are to be seen 300 plants of *Calla Little Gem*, a large portion of which are in spathe. This is a very effective little plant, and does not in any case exceed 1 foot in height.

Conspicuous amongst a good and varied collection of Ferns is a fine specimen of *Davallia Mooreana*, 9 feet across, and the picture of health. A large plant of *Asparagus prostratus nanus* covers the roof of the fernery, and thus affords an agreeable and natural shade.

Chrysanthemums are good, "some splendid timber," crowned with rich, well-shaped blooms. A curious freak to be seen is a plant of *Chrysanthemum Charles Davis*, which is in a 6 or 7-inch pot, exactly a foot high, and bearing a flower exactly 12 inches across; no pinching or abortion has been resorted to to obtain this effect. If this character could be maintained, the plant would no doubt become valuable for many purposes, from which, owing to their great height, they are now excluded.

A few of the best kinds now at present in flower, are *Ada Prass*, a very pale pink, almost white, of fine size and substance; *Mohawk*, very dark brown; *Thunberg*, rich yellow, very bold flower; *Avalanche* taking foremost place in "whites."

There is a good lofty Palm House, not very large, but holding many specimens 18 to 20 ft. high, a very nice plant of *Areca Bauerii* and *Seaforthia elegans*, being conspicuous, also a splendid specimen of *Cycas revoluta*.

Violets are extensively grown, "Lady Hume Campbell" being the principal variety employed; a good house is constructed for these, which is convenient for gathering the flowers, as they are easily reached from back and front.

Quantities of herbaceous *Calceolarias* promise to account for themselves later on, as do a good batch of the single red *Primula* and the double white. Carnations are here in abundance, both in quality and quantity. Many pretty plants of Miss Joliffe, Winter Cheer, Duke of Fife, and other useful varieties, are now showing flower. Taken all round the cultivation and order found in Bletchley Park makes one feel quite satisfied to go to the housetops and proclaim himself a gardener. The photograph from which the engraving is made is by H. Bartholomew, of Newport Pagnell, Bucks, and was taken from the tower of a neighbouring church. *P. W.*

APPLE, HAMBLING'S SEEDLING.

UNDER this name, a new and remarkable Apple received a First-class Certificate when brought before the Fruit Committee of the Royal Horticultural Society on October 10 last. Major W. J. Hambling, of Dunstable, has obligingly furnished us with examples for figuring, and has also supplied us with the following information regarding the new seedling form. Major Hambling has for many years been in the habit of sowing Apple pips, and when the seedlings have become strong enough, he has grafted or budded them in an experimental way. Unfortunately, he has never kept any record of the parent Apples from which the pips have been taken, so that very little indeed is known of the parentage of the form before us. Hambling's Seedling appears to make the nearest approach to Peasgood's Nonsuch, but Major Hambling has never grown this Apple, and he is certain that Peasgood's Nonsuch is not the origin of his seedling; he thinks the original pips may possibly have been derived from Lane's Prince Albert or White Admirable, but he is quite uncertain.

Hambling's Seedling came up from an unknown pip; in due course it was grafted, and the graft failed, and the same result happened for two, three, or perhaps four years. In the meantime the seedling was making strong growth; the foliage was vigorous, notably of large size, dark colour, and, above all, the seedling began to show fruit-buds. Major Hambling then determined to see what fruit it would bear. The tree is now about fifteen years old, and has been bearing for five or six years. Each year the fruit increases in size and quantity; this year, on October 2 and 3, three bushels of Apples were gathered from it. Until last year the tree received little or no care, and, in fact, was neither pruned or cultivated. It grows on a calcareous soil.

Our readers will see by the illustration that Hambling's Seedling is large in size, and asymmetrical in form. It is somewhat pale apple-green in colour, in ripe examples flushed with rose. Its keeping qualities are under experiment, but it is believed to be a good keeper. Its taste is very good, the fruits being suitable alike for dessert, cooking, or for making jelly.

Major Hambling cultivates Apples with great success; we learn that from a piece of garden-ground consisting of 10 poles only, he this year gathered 50 bushels of Apples.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 24.—The meeting in the Drill Hall, James Street, Westminster, on Tuesday last was quite exceptional. The hall was filled with exhibits which included an unusual display of Orchids from leading nurserymen, and many acquisitions in this

order; also Dahlias, Chrysanthemums, and other plants and flowers. Fruit was present in considerable quantity; and vegetables, especially Onions, were present in quantity, and in first-rate quality.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. H. H. D'Ombraïn, G. Paul, J. Laing, R. Owen, H. Herbst, R. Dean, H. B. May, G. Stevens, R. B. Lowe, C. F. Bause, J. Jennings, C. J. Salter, J. D. Pawle, W. Bain, W. Furze, T. Baines, C. E. Pearson, W. H. Williams, J. Walker, J. T. Bennett-Poë, H. Cannell, and C. E. Shea.

yellow variety; and a bloom of *Carludovica palmata* was exhibited by Mr. Philip Crowley, Waddon House, Croydon (Vote of Thanks).

Messrs. W. Cutbush & Sons, Highgate, had a group of *Pernettyas mucronata*, well berried, the varieties *atro-sanguinea*, *nigra*, *rosea*, *macrocarpa*, and *alba* being the most useful for decoration (Silver Banksian Medal).

Mr. Thos. S. Ware, Hale Farm Nurseries, Tottenham, had blooms of Cactus, show and decorative Dahlias, in very fine condition (Silver Flora Medal).

Messrs. Cannell and Sons, Swanley, had a collection of single Begonia blooms, from plants lifted

A. A. sanguineum, and two or three seedlings. *A. Lindeni*, a fine large carmine-coloured spathe, was awarded a First-class Certificate.

Mr. C. Holden, 61, Warwick Road, Ealing, had an extremely large naturally-grown Chrysanthemum, bearing nearly 2,000 buds and flowers; the variety was *Sœur Méline* (Bronze Banksian Medal).

Mr. Anthony Waterer, Knop Hill Nurseries, Woking, showed a large plant (12 feet high), of an American Oak, with purplish-red foliage at this season. It was distinct and striking as a variety for its autumn effects. He likewise showed three plants of 4 to 5 feet in height of *Andromeda arborea*,

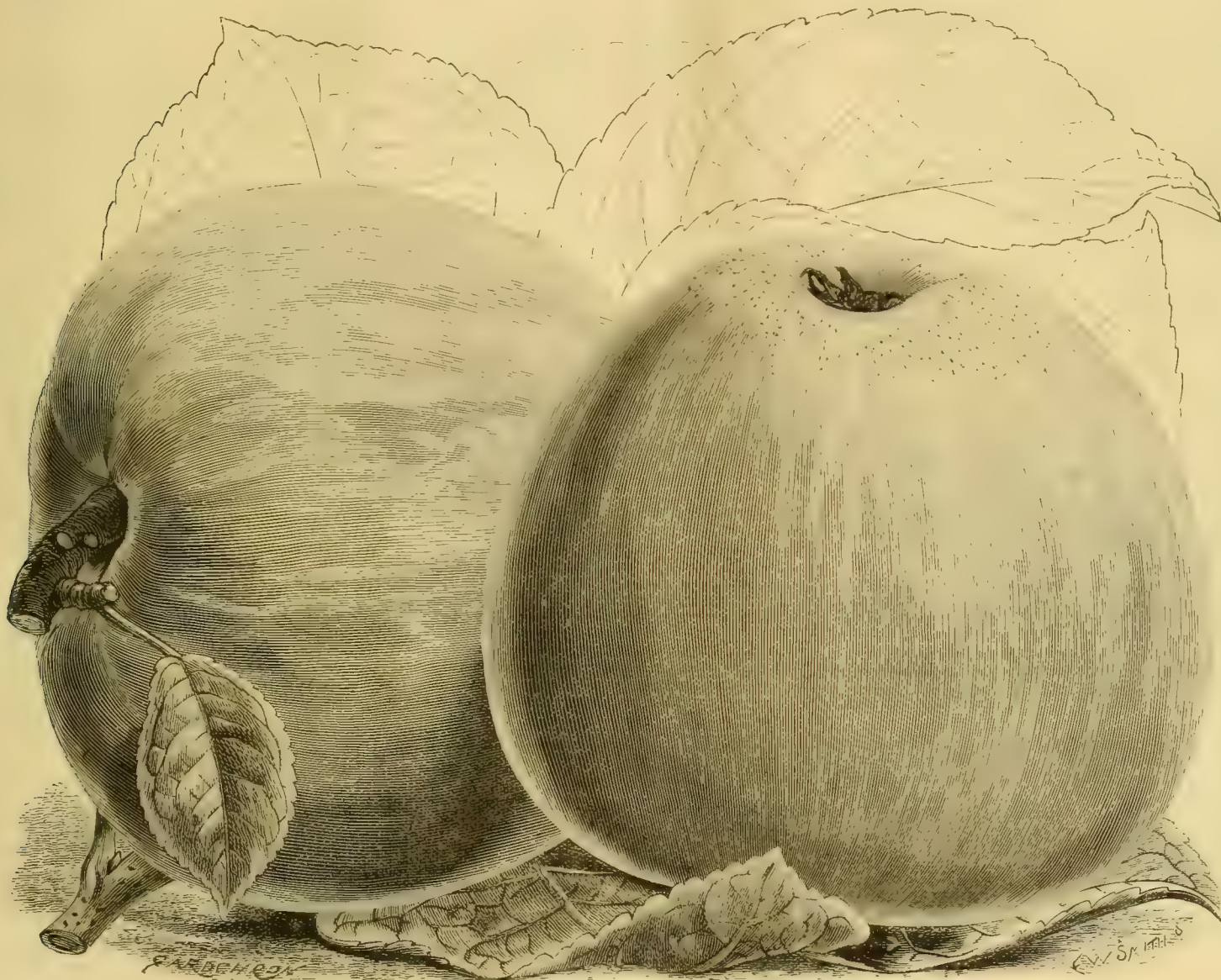


FIG. 90.—APPLE HAMBLING'S SEEDLING. (SEE P. 534.)

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, illustrated the exceptional autumn by a very good display of Dahlias in all sections, looking very bright. Awards of Merit were given to Mrs. Parrott, a single flower of carmine and white; and to Sir T. Montefiore, a very deep velvety crimson Cactus variety (Silver-gilt Floral Medal).

A First-class Certificate was awarded to fibrous-rooted Begonia *Gloire de Lorraine*, exhibited by L. de Rothschild, Esq., Ascott, Leighton Buzzard, gr., Mr. J. Jennings. It has showy rose-coloured flowers, is very floriferous, carries its flowers well above the foliage, is dwarf and rather slender in growth.

Mr. C. G. Van Tubergen, jun., Haarlem, Holland, sent spikes of *Kniphofia hybrida*, var. *Triumph*, a

from the open ground; also some Chrysanthemums. Cactus Dahlia, Cannell's Brilliant, a very fine brilliant crimson flower, was granted an Award of Merit (Bronze Banksian Medal).

A pretty group of foliage plants was put up by Messrs. Jno. Laing & Sons, Forest Hill, S.E.; also a few good blooms of Chrysanthemums (Silver Flora Medal).

Messrs. B. S. Williams & Sons, Upper Holloway, had a group of excellent Crotons, fairly large specimens, and well coloured (Silver Flora Medal).

Some magnificent Anthuriums were from Sir Trevor Lawrence, Bart., Burford, Dorking (gr., Mr. Bain). The following varieties were shown in capital form:—*A. Laingii*, *A. Leodiense*, *A. Andreanum*,

with foliage, now in decay, of a light-red tint, and terminal panicles of unopened white flower-buds. In a mass it is an effective plant at this season.

Mr. W. Pearce, gr., Floore House, Weedon, showed five plants well-grown, and very dark green and healthy, of *Davallia fijiensis*. These measured on an average 4 feet in diameter (Vote of Thanks).

The Chrysanthemum season is upon us, as was shown by the number of new varieties staged at the meeting of the Royal Horticultural Society on the 24th inst. Probably it is owing to the season, and perhaps something to the marked improvement in the varieties, that the October-flowering Japanese have been remarkably fine, as was instanced by what was seen at the Drill Hall on the above date. An Award

of Merit was made to plants of Ryecroft Glory, from Mr. H. J. Jones, Ryecroft Nursery, Lewisham, as a decorative variety, dwarf, and compact in habit; very free indeed of bloom, the colour deep gold, the flowers produced in large bunches; an excellent companion to the well-known Source d'Or, which is perhaps, one of the most useful *Chrysanthemums* in cultivation. To Mr. R. Owen, nurseryman, Maidenhead, for Japanese Miss M. Simpkins, a large creamy-white, broad-petaled, incurved Japanese, of a decidedly promising character; and to W. Herbert Fowler, a striking broad-petaled reflexed Japanese flower, and deep golden in colour. To Japanese The Tribune, shown both by Mr. H. J. Jones and Mr. C. E. Shea, Foots Cray, Kent, a large broad-petaled pale lemon-yellow flower, the centre tinted bright gold, Mr. Jones having a plant bearing three very fine blooms; also to Madame M. Ricard, a reflexed Japanese, deep pink in colour, very bright and pleasing, and likely to make a good exhibition variety, from Mr. Geo. Stevens, St. John's Nursery, Putney.

Of non-certificated flowers, Mr. C. E. Shea had Sylphide, a bright yellow Japanese, small but very pretty; and Bouquet des Dames, white, in the way of Elaine. Mr. R. Owen staged a number of blooms of Japanese of his own raising, such as James Myers, pale cerise, flushed with magenta, the reverse of the petals yellow, a reflexed flower; Thomas Wilkins, a large, striking, reflexed Japanese, of a chrome-yellow colour, highly promising; Richard Dean, of the Edwin Molyneux type, bright in colour, the reverse golden; Rose Wynne, a large, broad-petaled white flower, too shallow as shown, but decidedly promising; a number of very fine blooms of his fine incurved Baron Hirsch, which must be pronounced an excellent acquisition; also incurved, Permanent, which greatly resembles a blush Queen, but which was scarcely enough developed; Vice-President Jules Barignay, also incurved, deep amaranth, with a cinnamon reverse, that will no doubt be seen in a more finished form; Mrs. G. B. Darby, delicate pink, thin-petaled, full, and very pleasing; Mrs. P. Blair, blush, with white reverse, the surface of the petals flaked with magenta-purple, large, full, and very fine; Wilfred Marshall, a large broad-petaled pale yellow; W. Mease, pale bright magenta, with a silvery reverse, incurved; a fine bloom of the yellow Avalanche; and one or two others. Several of the last-named being represented by one bloom only, therefore the committee could not deal with them. A collection of bunches of small Japanese, also from Mr. Owen, well adapted for cutting, was much admired, they included Corneux, chestnut-crimson; Charles Billecart, bright golden-yellow; Madame Jules Mouquet, bronzy-orange; Ernest Iroy, pink, white and gold, very pretty; Crimson Queen, bright crimson; Dr. Jules Fabre, gold, edged with orange-bronze; and Fadette, soft pink. Messrs. H. Cannell & Son, nurserymen, Swanley, had the fine new reflexed crimson Japanese William Seward, very fine; Ada Prass, a delicate blush incurved Japanese; International, blush, the broad petals flushed with lilac-pink; and Madame Edouard Rey, a beautiful blush flower, tinted with lilac-pink, that must take high rank as an exhibition variety. Messrs. Veitch & Sons, Exotic Nurseries, Chelsea, had a group of Japanese varieties, plants bearing very fine blooms; and Mr. William Wells, The Nurseries, Earlswood, several stands of cut blooms of various types.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Sec.), Sydney Courtland, A. H. Smee, C. J. Lucas, Thos. Statter, F. Sander, E. Hill, J. Jaques, T. B. Haywood, H. Williams, J. Douglas, and H. M. Pollett.

This was one of the finest Orchid shows we have seen at the Drill Hall, and one of the most effective plants in all the various groups was *Cattleya labiata*. Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, had an extensive group, composed principally of varieties of *Cattleya labiata*, among them being some very distinct things. Of these we noted *C. labiata* delicata, almost wholly of a clear rose colour; *C. l. vivicans*, rose-pink, with yellow throat and small blotch on the labellum; *C. l. Jeannette*, with a very richly-coloured labellum, the dark crimson colour being continued round the side lobes of the lip; the varieties *C. l. bella* and *C. l. formosa* were also very pretty. Among other good things in their group, Messrs. Charlesworth, Shuttleworth & Co., showed their fine new *Cypripedium Charlesworthii* (illustrated in the *Gardeners' Chronicle*

October 7); *Cattleya Schofieldiana aurea*, *C. granulosa asperata*, *Cypripedium nitens*, with many flowers; some good *Oncidium varicosum*, *Cymbidium giganteum*, *Lælia tenebrosa*, &c. (Silver-gilt Banksian Medal).

Messrs. James Veitch & Son had an extensive group, consisting chiefly of new plants, of which some of the best were *Lælio-Cattleya* × *Pisanda* (*Lælia crispa* ♀, *C. el dorado* ♂), a very handsome hybrid, of compact growth, and with flowers somewhat resembling those of *L.-C. exoniensis*, the deflected front lobe of the lip being of very dark maroon-crimson (First-class Certificate); *Cypripedium* × *Clonius* (*conchiferum* × ♀, *caudatum Wallisii* ♂), a most elegant and chastely-beautiful hybrid, with flowers somewhat resembling those of *C. × conchiferum*, but with more attenuated petals. The pouch was clear waxy-white, the infolded lobes spotted with purple; the petals are white, with green lines, and rose-tinted, drooping, tail-like tips; the sepals are white, with a green venation (First-class Certificate); *Lælio-Cattleya* × *Eumæa* (*L. majalis* ♂, *C. labiata Trianae* ♀), a very interesting hybrid, with pretty flowers, and distinct traces of *L. majalis* in the plant; *L.-C. × Cassiope* (*L. pumila præstans* ♀, *L.-C. × exoniensis* ♂), a charming thing; *Cattleya* × *Harrii*, one of the most beautiful of hybrids, its flowers surpassing the best forms of *Lælio-Cattleya elegans*; *Cypripedium* × *T. B. Haywood*, *C. × Arthurianum pulchellum*. Among other well-flowered specimens were several distinct forms of *Cattleya Bowringiana*; *Dendrobium Phalaenopsis Schroderianum*, *D. P. Statterianum*, *D. album*, *D. superbiens*, *D. formosum giganteum*, *Cypripedium* × *cezanthum superbum*, *C. × Ashburtonis major*, *C. × radiosum*, *C. × Ianthæ*, *C. Boisierianum*, *C. × macrochilum*, and many *Cattleyas*, &c. (Silver-gilt Banksian Medal).

A well-arranged group of fine Orchids came from Messrs. F. Sander & Co., two of their exhibits were quite remarkable, viz., *Cattleya* × *Lord Rothschild* (*labiata Gaskelliana* ♀, *Dowiana aurea* ♂), a plant of the free growth, and the round well-displayed lip of *C. Gaskelliana*, together with the colours and other good points of *C. × Hardyana*. The petals were more than 7 inches wide when stretched out, of a creamy-white, tinged with rosy-lilac, the veining silvery-white; the front of the lip is finely crimped and rounded; the basal and median portion of a clear yellow changing to white, where it extends into the ruby-crimson of the front lobe; the yellow veining in the throat has a marbling of crimson between the lines. The scent of the flower is delicious (First-class Certificate). The other plant alluded to was *Cattleya labiata Sanderiana*, a variety of very distinct form, the labellum being unlike that of any other *C. labiata*, and the whole flower of greater substance; the colour of the sepals and petals is of glowing crimson, having a tinge of violet, the labellum of the same rich maroon-purple colour seen in *C. Percivaliana* (First-class Certificate). Messrs. Sander also showed a fine white *Dendrobium Phalaenopsis*, with a lip having a purple base; a large specimen of *Vanda cœrulea*, many of their importations of *Cattleya labiata*, *Lælias*, *Cypripediums*, &c. (Silver Flora Medal).

Sir Trevor Lawrence, Bart., Burford, Dorking (grower, Mr. W. H. White), sent the most extraordinary plant in the show; *Cirrhopetalum ornatisimum* with four spikes of its singular flowers. These are creamy-white and crimson in colour, the sepals having a crimson fringe at the edges, and the petals bunches of crimson tassels which move from the slightest cause (First-class Certificate). Sir Trevor Lawrence also sent a plant of *Cypripedium* × *concolor*, which carried three flowers.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester, exhibited *Cypripedium* × *Statterianum* (*Spicerianum magnificum* × *veixillarium superbum*), a very handsome hybrid with lightly polished yellow and dark chocolate petals and pouch, and beautiful upper sepal of a rich rose-purple edged with white (First-class Certificate); and *Lælia* × *Euterpe* (*crispa* × *pumila Dayana*); the same hybrid being also sent by Messrs. Heath & Son, of Cheltenham, who also showed a very distinct and pretty novelty in *Cypripedium insignis albens*, which had clear yellow flowers with pure white upper part to the dorsal sepal, and with only the faintest traces of the dark markings usually seen in the species (Award of Merit); and *Cypripedium* × (*insigne* × *siamense*).

Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, showed some very fine forms of *Cattleya labiata*, the variety *Imshootiana* being an extraordinarily large plant, and the flowers of rich colour (Award of Merit). They also showed a form

of *Paphinia grandis* with very large claret and white flowers (Award of Merit); *Pholidota convallarioides* (Botanical Certificate); *Dendrobium lamellatum* (Botanical Certificate); *Maxillaria callichroma*, *Odontoglossum Mooreanum*, a supposed natural hybrid with *O. tripudians*; *Odontoglossum luteo-purpureum intermedium* (Cultural Commendation); *Cattleya Alexandræ elegans*, and *Cynoches chlorochilum*, which also received Cultural Commendation.

Messrs. Hugh Low & Co., Clapton, exhibited a group of Orchids, among which were good examples of *Miltonia Roezlii*, *Odontoglossum grande*, *Cypripedium bellatulum*, *Lælia Dormanii*, *Cypripedium tonsum*, *Phalaenopsis*, *Vanda Amesiana*, and *Saccolabium bellinum* (Silver Banksian Medal).

Messrs. W. S. Lewis & Co., Chase Side, Southgate, had a group of Orchids, comprising *Lælio-Cattleya* × *Schilleriana*, *L. Perrinii*, *Cattleya labiata*, *C. Bowringiana*, *Cypripedium* × *delicatum*, *Oncidium ornithorhynchum*, *O. incurvum*, *O. prætextum*, &c. (Silver Banksian Medal).

G. D. Owen, Esq., Selwood, Rotherham (gr., Mr. Watts), showed the true *Cattleya labiata alba*, and a splendid form of *C. × Hardyana* named *C. × H. Selwood var.*, and which received an Award of Merit.

W. M. Appleton, Esq., Tyn-y-Coed, Weston-super-Mare, showed two noble forms of *Cattleya labiata*, the best, *C. L. Appleton's var.*, receiving an Award of Merit; *Dendrobium Phalaenopsis*, Appleton's var., with white flowers, the outer halves of the segments being coloured bright rosy-lilac (Award of Merit); a very pretty form of *Cattleya* × *Hardyana*, a fine variety of *Oncidium Jonesianum*, and two *Cypripedium* *insigne*.

Walter C. Clarke, Esq., Orleans House, Sefton Park, Liverpool (gr., Mr. Thos. Jones), showed *Cypripedium* *insigne Clarkii*, a very distant and pretty form, with light and sparingly spotted flowers (Award of Merit); and a very good variety of *Cattleya labiata*. Henry Little, Esq., The Barons, Twickenham, showed *Cattleya labiata*, Little's var.; *Cypripedium Elliottianum*, and *C. × calurum Lemoinei*. G. J. Poston, Esq., Bishopsford, Mitcham, showed varieties of *Cattleya Bowringiana*. J. T. Bennett - P.C., Esq., Holmewood, Cheshunt, showed *Odontoglossum Rossii*, Holmewood variety, which had some fine flowers in a very tall scape; and Sir Wm. Marriott, Down House, Blandford (gr., Mr. T. Denny), sent spikes of *Lælia furfuracea*, and *L. autumnalis Arnoldiana*.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. T. F. Rivers, A. Sutton, G. W. Cummins, Harrison Weir, H. J. Pearson, J. Cheal, G. Taber, W. Warren, J. Wright, A. Dean, G. Woodward, W. Bates, G. Wythes, F. Q. Lane, H. Balderson, J. Smith, G. Norman, Robt. Hogg, G. H. Sage, and J. Willard.

The competitive classes that had been arranged were only slightly contested, and in the class for Apples grown in the open there was no exhibitor at all, whilst for Grapes there was no competition in either class. Mr. Thos. Osman, Ottershaw Park Gardens, Chertsey, obtained 1st prize in each class for Grapes—in the one case for six bunches of Grapes, and in the other for an equal number of bunches to be judged in regard to flavour.

For six dishes of dessert Pears, Mr. J. W. Melles, Sewardstone Lodge, Chingford (gr., Mr. J. Nicholson), was 1st; and Mr. Thos. Osman, 2nd.

Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, had a collection of Apples and Pears in 120 dishes, very good in size and colour, especially the Apples (Silver-gilt Banksian Medal).

A splendid collection of Grapes was exhibited by Mr. Samuel Mortimer, Rowledge, Farnham, Surrey, including thirty bunches of Black Alicante, four bunches of Gros Colmar, and nine of Black Hamburgh. The Alicantes especially were capitally finished. Also a collection of Apples and Pears, in about forty dishes (Silver-gilt Banksian Medal).

A collection of Canadian Apples, in 100 varieties, was exhibited by the Government of Nova Scotia. They were much spotted, and had been bruised in transit, and were not at all equal, even in appearance, to those home-grown, although they were highly-coloured. Many of the varieties were our own, and some were strangers (Vote of Thanks).

Messrs. T. F. Rivers & Son, Sawbridgeworth, had a grand collection of Apples and Pears. Some of the Apples were very fine, such as King of Tomkins' County, Belle Daboie, Peasgood's Nonsuch, Lady Henniker, Melon Apple, Cox's Pomona, Bijou, Cox's Orange Pippin, King of the Pippins, Rymer, &c. (Silver Banksian Medal).

Mr. H. Deverill, Banbury, had a first-class collection of Onions, occupying more than half-way along one side of the house (Silver-gilt Knightian Medal). Deverill's Anglo-Spanish was present in very great quantity; Aileas Craig, Rousham Park Hero, and the Lord Keeper, as well as Royal Jubilee, Deverill's Advancer, &c., all of the quality for which Mr. Deverill has long been famous.

From Mr. G. R. Allis, Oldwarden Park, Biggleswade, came three bunches of Gros Colmar Grapes grown on a garden wall without any protection—another instance of the abnormal character of the past season; also a dish of Tomatoes (Vote of Thanks).

An Award of Merit was given to a seedling Apple named Bow Hill Pippin, and exhibited by Mr. A. L. White, Bow Hill, near Maidstone. The Apple is of good size, and not unlike to Blenheim Pippin in appearance.

A dozen Ribston Pippin Apples were from Mr. R. Weller, gr., Glenstall Gardens, Murroe, co. Limerick (Vote of Thanks).

Another seedling Apple was from Mr. Cooper Taber, Rivenhall, called Lady Rayleigh, but no award was made; and one called Captain Sanders, a seedling from Dumelow, shown by Messrs. Paul & Son, Cheshunt.

A silver-laced Savoy Seedling from Gilbert's Universal Savoy, was sent by Mr. W. Carmichael, 14, Pitt Street, Edinburgh. The margins of all the leaves are cream coloured. Three green curled Savoys and three Improved Early Dwarf Cabbage were presented for Certificate by Mr. John Basham, Fair Oak Gardens, Bassaleys, near Newport, Monmouthshire, but no award was made.

A first-class collection of vegetables, showing rare selection and culture, was sent by Messrs. Sutton & Sons, Reading. There were nine dishes of Onions, including Sutton's Al Aileas Craig, Sutton's Crimson Globe, Sutton's No. 40 and No. 30, all in capital condition; also Snowball Turnip, Autumn Mammoth Cauliflower, Sutton's Arctic Purple Kale, exceptionally fine; and Early Gem Carrot, short and very thick (Silver-gilt Knightian Medal).

Seedling Melons came from Mr. Owen Thomas, The Royal Gardens, Windsor, and from Mr. John Perkins, Thornham Hall Gardens, Eye.

A collection of Endive in half a dozen varieties was shown from the Royal Horticultural Society's Gardens at Chiswick.

Lecture on Onions.

In the afternoon a lecture on Onions was delivered by Mr. A. Dean, of Kingston. Mr. Dean commenced by giving authoritative opinions as to its native habitat, which it is believed to be Central Asia, afterwards touching upon all the various species of *Allium* that have been used in domestic economy, describing their nature, and the uses to which they are applied. The lecturer afterwards referred favourably to the Onion trials that have taken place at Chiswick this year, and afterwards described the different shapes; and as a further characteristic by which they may be classed, the colour of the skin was noticed, remarking that white-skinned varieties as a rule are bad keepers, and those with red skins are the best. The globular or spherical shape too was much better for this purpose than the flat ones. After remarking that the soil is not now made so hard and stiff for Onions, by batting it about as was once practised, Mr. Dean said that a fairly stiff soil was most suitable to them. The modern practice of growing large Onions for exhibition, was then described, of which the following is a résumé. Sow early in January in heat, and when large enough, transplant, or put into pots singly, and grow on in a little heat, but not excessive, until April, when they should be put out into soil in a sheltered border, that has been trenched and very heavily dressed. During the summer they must be mulched with manure, and fed also with liquid-manure, and with chemicals. A good part of the remaining portion of the lecture was devoted to the subject of growing such large bulbs as is now the rage, the lecturer being strongly of opinion that no useful purpose is served by their production, and that they are of no value, except for exhibition, declaring that they were decidedly inferior in quality to those grown under ordinary treatment. In conclusion, the lecturer referred to the two most troublesome pests, the Onion-maggot and the Onion-mildew. After a few remarks by Mr. Cheal, who presided, the Rev. W. Wilks thanked the lecturer for taking such a decided stand against vegetables that had nothing to recommend them but mere size.

NATIONAL CHRYSANTHEMUM.

OCTOBER 25.—A meeting of the Floral Committee took place at the Royal Aquarium, Westminster, on the above date, Mr. George Gordon in the chair, a large number of varieties of Chrysanthemums being staged. First-class Certificates of Merit were awarded to Japanese Thomas Wilkins, chrome-yellow, a very fine reflexed Japanese, and to Mrs. Blair, a beautiful flower of the W. G. Drover type, but much more refined and highly promising, from Mr. R. Owen, Maidenhead. To Japanese Violetta, a beautiful soft blush-pink, reflexed flower, of first-rate properties, from Mr. E. Bockett, Elstree. To large-flowered Anemone Mdle. Nathalie Brun, blush guard petals, with yellow cushions, a finely-formed flower of excellent quality, from Mr. Rowbottom, The Priory Gardens, Hornsey. To The Tribune, lemon-yellow, with deeper centre, extra fine, from Mr. H. J. Jones, Ryecroft Nursery, Lewisham. To yellow Lady Selborne, as a market and decorative variety, a bright yellow sport from Lady Selborne, which will be in great request for cutting purposes; a plant of medium height, in addition to boxes of cut blooms, being shown; from Messrs. Thomas Rochford & Son, Broxbourne. To Japanese Madame Cambon, a variety of the Comte de Germiny type, the broad incurved petals of a pale reddish colour, with a pale buff reverse; from Mr. C. Gibson, gr., Morden Park, Mitcham; and to Cactus Dahlia Cannell's Brilliant, bright reddish-crimson, distinct, and very fine. Among other fine varieties of Chrysanthemum, some of which narrowly escaped obtaining Certificates, and which the committee wished to see again, were Japanese Mrs. Charles Cox, a bronzy sport from Mons. Bernard, shown by Mr. Cox, Brickendon, Herts; Belle James, a large yellow Japanese, in the way of Sunflower, but not so long in the petals (Commended); from Mr. C. W. Knowles, Roehampton, Japanese W. Herbert Fowler, yellow; Rose Wynne, white; and Japanese Anemone Ada Strickland, bright buff-yellow, large and full, all from Mr. R. Owen. Japanese Dr. Gache, in the way of E. Molyneux, bright chestnut-crimson, with a golden-buff reverse, from Mr. E. Beckett; Japanese Madame M. Ricard, deep pink (Commended), from Mr. George Stevens, Putney; Japanese G. W. Childs, a very bright deep crimson reflexed Japanese from Mr. H. J. Jones; Japanese M. Aug. Lacvivier, in the way of G. C. Schwabe, from Messrs. H. Cannell & Son, Japanese Snows, a fine reflexed, creamy-white flower, of decided promise; from Mr. Peters of Leatherhead, and Japanese Miss Strudwick, an orange-bronze sport from Margot, promising to make a very fine decorative variety. The committee expressed a wish to see a plant on a future occasion.

SCOTLAND.

NORTH OF SCOTLAND HORTICULTURAL AND ARBORICULTURAL ASSOCIATION.

The members of this Association held their monthly meeting in the Christian Institute, Aberdeen, on Wednesday evening, 18th inst. There was a good attendance, and Mr. John Munro, Polmuir Nurseries, President of the Association, occupied the chair. The chairman thanked the members for the honour they had done him in electing him President, and in the course of an interesting address, urged upon the members to take a more active interest in the Association. He hoped the meetings would be well attended, and proceeded to give a number of hints which would enable them to strengthen their position as members of the Association. The Association, he said, should not be left to rely solely upon the individual efforts of its Fellows, but they should have a course of lectures on the scientific teaching of horticulture and arboriculture by an expert, and he was prepared to move a resolution to that effect. A course of lectures dealing with the theoretical and technical teaching of these subjects would prove a good investment, and would confer life-long advantages on the members. A short discussion followed the chairman's address, in the course of which his remarks were cordially endorsed. A vote of thanks was voted to the chairman for his address. Notes on the collecting and preparing of plants as dried specimens were then given by Mr. J. Duncan, and at the close he was thanked. There was on view in the hall a very fine display of fruit from Duffus House, Elgin.

THE ADVANCEMENT OF HORTICULTURE.

Most of the leading towns in the north have taken up the cause of advancing horticultural knowledge, and really one is brought more closely into touch with your leading article of October 14 as to the qualifications of gardeners of the present time. If we are to judge from most of the essays we hear read, and the able and lively discussions which follow them, in which foremen and journeymen gardeners take part, one may fairly say that the present generation of gardeners is certainly not behind its predecessors in practical knowledge; and though horticultural practice may have been weakened in some instances by change of methods and by the reduction of labour and means to keep the machinery of gardening going, we believe that at the present time there is more really good gardening than at any previous period of the history of horticulture.

Dundee has started well in the matter of a winter course of lectures, and has prepared, apart from the horticultural society's programme, a syllabus for a course of technical lectures on scientific and practical matters for the education of the young gardeners of the locality.

Aberdeen is a city never behind in good works, and is keeping well to the front in the matter of horticultural tuition, promising well for the future.

Edinburgh still goes on strongly with its well-organised system of disseminating knowledge for all classes and all ages among the horticultural fraternity, the horticultural association having arranged to give a course of scientific and practical lectures, as were so popular and widely taken advantage of last season. Mr. Robert Laird, the indefatigable secretary, has again taken this business part of the association in hand, and by his energy and well-organised arrangements he will, no doubt, bring it to a successful issue. Besides the scientific lectures given by highly qualified persons, there are subjects chosen for probationers especially, which are very essential to gardeners if they are to be useful members of the craft, and hold the best positions in the gardening world.

Glasgow.—We cannot ascertain what our friends in the Glasgow district are doing to advance horticulture. The town of St. Mungo is one of which the citizens are proud, and justly so, as no town in the kingdom is before the western capital of Scotland for practical workers in business philanthropic work, and for disseminating knowledge of wide and varied nature. Its shows of horticultural produce have never been surpassed in the north, especially for plants and vegetables; and the working men's institutions, where there are garden allotments, show how very creditably the workmen crop these, and what a capital feature they form of the philanthropic work of the city. But where is there any tangible proof in Glasgow or its suburbs that the interests of the young gardener are thought of as in other towns?

Stirling has done well in this direction, and one might expect as much at the home of the Drummonds. Falkirk started well this year, and what is most creditable, the best part of the work was performed by the young men themselves. The Chrysanthemums, cool Orchids, and root-pruning have been brought to the front in excellent form, each address calling forth keen and enthusiastic discussions. The questions put by some of the younger men are often original and pithy, but I must say they have not to thank many of the leading gardeners for their aid. *M. Temple, Carron House.*

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

The members of this Society held their annual meeting on Saturday, the 21st inst. There was a large attendance, over which Lieut.-Col. Crombie, Chairman of Directors presided. Although there was an unfavourable balance of £143 against the last show, the Society has still £557 to its credit. The report and balance-sheet was unanimously adopted after a brief discussion.

Mr. Jas. Dalgarno then moved "That Rule IV. of the general rules read as follows:—The affairs of the Society shall be under the management of the acting directors, consisting of a chairman, vice-chairman, and sixteen members (seven of which shall form a quorum), who shall be elected at the general meeting. Several members spoke in support of the motion, and urged that the Society had failed in a measure to carry the object for which it existed, and deprecated the practice which has latterly obtained of associating their exhibitions, with cavalry sports, balloon ascents, and other amusements, which brought in much money, but dwarfed the horticultural

tural interest.' In the end the motion was defeated by forty-one votes to four.

The election of officers was then proceeded with, and Sir Arthur Grant, Bart., of Monymusk, was elected chairman, in the room of Lieut.-Colonel Crombie, resigned; and Mr. A. Robson vice-chairman. Several alterations were made in the directorate, and Mr. A. M. Byres was re-elected Secretary and Treasurer. Votes of thanks were accorded to the retiring chairman and other officers.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

LAVANDULA SPICA.—Will some of your correspondents kindly inform H. C. P. if this plant is grown in large quantities in England for the manufacture of Lavender-water? If so, where, and what the conditions are under which it is so cultivated.

MALE AND FEMALE SWANS.—G. P. would be glad if some correspondent would kindly inform him, through our columns, if there are any signs in plumage, head, bill, &c., by which the female may be distinguished from the male bird, and at what age the female begins to lay.

Obituary.

WILLIAM ALLITT.—We regret to have to record the death of Mr. William Allitt, of the Tyrendarra Nursery, Victoria. The deceased was a native of co. Kerry, came to Portland, Victoria, to take charge of the Portland Botanical Gardens, which he laid out and managed with credit to himself and the town for a number of years. He then went to Tyrendarra, where he founded the nursery at that place. His knowledge of the science of botany was very extensive, and he was a regular correspondent with Baron Von Mueller, who held the deceased in much esteem as a co-enthusiast in the search after the beautiful in Nature. Mr. Allitt was made a Fellow of the Royal Horticultural Society. The Styphelia Allitti was named after this estimable man.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending October 21.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
0	5 +	60	0	+ 557	— 67	1 +	195	38.7	8	24
1	7 +	72	0	+ 357	— 17	4 —	153	20.9	22	33
2	6 +	81	0	+ 452	— 68	5 —	130	16.1	23	37
3	7 +	90	0	+ 543	— 55	1 —	130	15.8	29	44
4	7 +	83	0	+ 680	— 68	2 —	125	16.1	25	41
5	6 +	92	0	+ 615	— 56	0 aver	128	18.4	30	45
6	6 +	76	0	+ 505	— 167	5 —	156	30.3	18	37
7	6 +	80	0	+ 747	— 96	5 —	141	24.3	7	36
8	5 +	92	0	+ 730	— 76	1 —	133	25.8	29	47
9	6 +	78	0	+ 581	— 101	4 —	167	26.4	15	32
10	5 +	87	0	+ 627	— 99	1 +	147	24.8	15	36
*	5 +	109	0	+ 875	— 52	8 —	140	21.9	46	56

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending October 21, is furnished from the Meteorological Office:—

"The weather during this period varied considerably. In the extreme west and north small amounts of rain fell almost daily, but in the more southern and eastern districts, rain fell only on the first few days, and again at the end of the week, the intervening days being fine and bright.

"The temperature was much above the mean, the excess ranging from 5° in 'Scotland, N.' on the one hand, and 'England, S.W.,' 'Ireland, S.,' and the 'Channel Islands' on the other, to 7° in 'Scotland, E.,' 'England, E.,' and the 'Midland Counties.' The highest of the maxima were recorded, as a rule, either on the 16th or 21st, when they varied from 70° in 'England, N.W.,' and from between 66° and 69° in most of the other districts, to 61° in 'Scotland, W.,' and 60° in 'Scotland, N.' The lowest of the minima were recorded on the 19th, and ranged from 31° over 'England, S.W.' and 'Ireland, N.,' to 40° in 'England, N.W.,' and to 45° in the 'Channel Islands.' During the earlier half of the week the nightly minima were very high for the time of year.

"The rainfall slightly exceeded the mean in 'Scotland, N. and Ireland, S.,' and just equalled it in 'England, S.;' in all other districts there was a deficit. In 'England, N.E.,' and also in the 'Channel Islands,' the aggregate fall amounted to only one-tenth of an inch.

"The bright sunshine was (excepting in the Channel Islands) less prevalent than of late, the percentage of the possible duration ranging from 7 in 'England N.W.,' and 8 in 'Scotland, N.,' to 15 in the Irish districts, to 29 in 'England, E. and England, S.W.,' and to 30 in 'England, S.' In the 'Channel Islands,' however, the percentage was as high as 46."

MARKETS.

COVENT GARDEN, October 26.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

PRICES rule as last week.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ferns, small, per 100 4 0-6 0
Aspidistra, per doz. 15 0-30 0	Foliage plants, doz. 12 0-42 0
— specimen, each 7 6-21 0	Fuchsia, per doz. ... 4 0-6 0
Asters, dozen pots ... 4 0-9 0	Hydrangea, per doz. 12 0-24 0
Chrysanthemums, doz. 6 0-9 0	Lilium Harrisoni ... 18 0-24 0
— large plants, each 1 6-2 0	Marguerite, per doz. 6 0-12 0
Cyperus, per dozen 4 0-10 0	Mignonette, doz. pots 6 0-9 0
Dracena, each ... 1 0-5 0	Palms, various, each 2 0-10 0
Erica, various, p. dz. 9 0-24 0	— specimens, each 10 6-84 0
Evergreen Shrubs, in var., per dozen ... 6 0-20 0	Pelargonium, scarlet, per dozen ... 3 0-6 0
Ficus elastica, each 1 6-7 6	Solanums, per doz. ... 9 0-12 0
Ferns, various, doz. 4 0-9 0	

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-5 0	Orchids:—
Aster, dozen bun. ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Bouvardia, per bun. ... 0 6-1 0	Odontoglossum
Carnation, doz. bun. 4 0-9 0	— crispum, 12 blms. 2 0-6 0
— dozen blooms 1 0-2 0	Pelargoniums, scarlet, p. 12 bun. 3 0-6 0
Chrysanthemums, 12 bunches ... 2 0-6 0	— 12 sprays ... 0 6-0 9
— doz. blooms ... 1 0-6 0	Primula, dble. p. bun. 0 6-1 0
Dahlia, doz. bun. ... 2 0-4 0	Pyrethrum, 12 bun. 2 0-4 0
Eucharis, per dozen 4 0-6 0	Roses, doz. bunches 6 0-12 0
Gardenia, per dozen 2 0-4 0	— Tea, per dozen 0 6-2 0
Heliotrope, 12 sprays 0 3 0 6	— coloured, dozen 2 0-4 0
Lilac (Fr.), per bun. 4 0-6 0	— yellow (Maréchal), per doz. 2 0-6 0
Lilium lancifolium, p. doz. blooms 2 0-3 0	— red, per dozen ... 1 0-1 6
— Harrisoni, p. doz. 6 0-9 0	Sunflower, various, dozen bunches ... 2 0-6 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	Tuberose, 12 blms. 0 4-0 6
Marguerite, 12 bun. 1 6-3 0	Violets, Parmé, p. bn. 3 0-4 0
Mignonette, 12 bun. 2 0-4 0	— Czar, per bun. 2 0-3 0
Myosotis, 12 bunches 2 0-3 0	— English, per doz. 1 6-2 6
Pansy, per doz. bun. 1 0-2 0	

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Pine-apples, St. Michael, each ... 3 0-7 6
Cobs, per 100 lb. ... 32 6-...	
Grapes, per lb. ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 6-...	Lettuces, per doz. ... 1 6-2 0
Beet, red, per dozen 2 0-3 0	Mushrooms, punnet 1 6-2 0
Carrots, per bunch. ... 0 4-0 6	Mustard and Cress, punnet ... 0 2-...
Cauliflowers, each ... 0 3-0 6	Parsley, per bunch ... 0 2-0 3
Celery, bundle ... 1 0-1 3	Shallots, per lb. ... 0 3-...
Cucumbers, each ... 0 6-1 0	Tomatoes, per lb. ... 1 0-...
Endive, per dozen ... 1 2-1 6	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 3-1 0	
Leeks ... 0 4-...	

POTATOS.

Arrivals are very heavy, and trade slow, prices rule very low, except for best samples. Best Beauties making 100s. to 120s.; Abundance, Bruce, 80s. to 90s.; other kinds, 42s. 6d. to 60s. J. B. Thomas.

SEEDS.

LONDON: Oct. 25.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with but little business doing. American quotations for Clover seed are cabled weaker. The English sowing demand for Trifolium seems about over. Winter Tares realise last week's rates; supplies appear nearly exhausted. Rye keeps firm. For Canary seed, the consumptive demand improves; stocks in the hands of dealers are at a very low ebb. Hemp seed is steady. Blue Peas and Haricot Beans are held on former terms. Linseed is quieter. There is no change in either Mustard or Rape seed.

FRUITS AND VEGETABLES.

BOROUGH: October 24.—Quotations:—Cabbages, 3s. to 6s.; Savoys, 4s. to 6s.; Cauliflowers, 4s. to 5s. per tally; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. 6d. per bag; Apples, 2s. to 8s. per bushel.

SPITALFIELDS: October 24.—Quotations:—Cabbages, 3s. to 6s.; Savoys, 5s. to 6s.; Cauliflowers, 4s. to 5s. per tally; Turnips, 1s. 6d. to 2s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 5s. 6d. per bag; Apples, 2s. to 8s. per bushel.

FARRINGTON: October 25.—Quotations:—Savoys, 4s. to 6s.; Cabbages, 3s. to 6s.; Cauliflowers, 4s. to 5s. per tally; Carrots, 2s. to 3s.; Turnips, 1s. 6d. to 2s. 6d.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. 6d. per bag.

FARRINGTON: October 26.—Quotations:—Apples, 2s. 6d. to 3s. 6d. per bushel; do., Blenheim, 4s. per bushel; Grapes, Almeira, 9s. 6d. to 11s. per basket; Tomatoes, 6d. per lb.; Horseradish, 1s. 3d. per bunch; Celery, 1s. per roll; pickling Cabbages, 1s. 3d. per dozen.

STRATFORD: Oct. 24.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Cabbages, 2s. to 5s. per tally; Savoys, 3s. to 6s. per tally; Cauliflowers, 1s. to 1s. 6d. per dozen; do., 3s. to 5s. 6d. per tally; Turnips, 1s. to 1s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 45s. to 55s. per ton; cattle-feeding, 32s. to 40s. per ton; Parsnips, 50s. to 60s. per ton; Mangels, 24s. to 27s. per ton; Swedes, 26s. to 28s. per ton; Onions, English, 7s. to 8s. per bag; Dutch, 5s. 6d. to 6s. per bag; Belgian, 5s. 9d. to 6s. 6d. per case; Apples, English, 2s. to 4s. per bushel; Horseradish, 1s. 4d. to 1s. 6d. per bundle; Sprouts, 2s. to 2s. 2d. per half-sieve; Celery, 8d. to 1s. 2d. per roll.

POTATOS.

BOROUGH AND SPITALFIELDS: October 24.—Quotations ranged between 40s. and 110s. per ton.

STRATFORD: October 24.—Quotations:—Magnums, dark-land 40s. to 45s.; light do., 50s. to 70s.; Hebrons, 60s. to 70s.; St. Albans, 60s. to 70s. per ton.

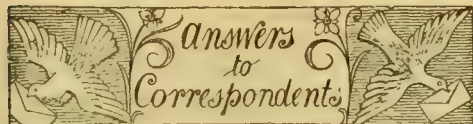
FARRINGTON: October 26.—Quotations:—Hebrons, 80s. to 100s.; Magnums, 40s. to 60s.; Champions, 45s. to 60s.; Regents, 50s. to 70s.; Black-lands, 45s. to 55s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 158s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s. New Mixture, 115s. to 130s.; and Straw, 35s. to 56s. per load.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending October 21, and for the corresponding period last year:—1893: Wheat, 27s. 6d.; Barley, 29s. 6d.; Oats, 18s. 1d. 1892: Wheat, 23s. 7d.; Barley, 27s. 9d.; Oats, 17s. 11d.



BOOKS: *A. B. Strawberries*, by W. H. Harrison, Shrewsbury. Published by Simpkin, Marshall, Hamilton, Kent & Co., London, price 1s.—*B. A. C. Artistic Flower Decoration*, by B. C. Saward. The Bazaar Office, 170, Strand, W.C.

BULBOUS PLANT: *A. J. S.* The plant purchased in Paris as *Scilla maritima*, and said to be an Indian Water-plant, is probably *Pancratium maritimum*, a species common in the Mediterranean region. It is hardy in this country, and is amenable to cold frame or greenhouse culture. For pot-culture, the soil may be sandy loam in a roughish state, to which some well-decayed manure may be added. It should not have a pot more than 2 inches in diameter, wider than the bulb, be firmly potted, two-thirds of the bulb below the surface, and well watered when in full growth.

CALANTHES: *B. Wadds.* These plants will be alluded to by Mr. Holmes in his Calendar.

CARNATIONS DISEASED: *Helen.* The plants sent which have light brown circular spots on the leaves, are attacked by the fungus *Helminthosporium echinulatum*. The other plant is similarly attacked, and has the Carnation rust (*Septoria dianthi*) as well. You had better destroy by burning all the affected plants.—*One Anxious to Know and Constant Reader.* *Septoria dianthi*.

COLOURING FLOWERS ARTIFICIALLY: *W. H.* This is sometimes done with Lilies, Carnations, Hydrangeas, &c., either by growing the plants in soil mixed with the colour-inducing substances, or putting the cut flowers in water containing colouring matter, which they then absorb. Nothing more has, we believe, been published about the matter than will be found scattered through the various journals of the day.

COUNTY COUNCIL LECTURERS: *F. A. G.* The salary paid by the different councils varies considerably; some being paid a certain sum annually, and others are engaged for a season at so much per lecture; and some lecturers would have a good deal of travelling about and many meetings to attend, whilst others, in sparsely peopled districts, would have but little to do in comparison.

CYPRIPEDIUM INSIGNE: *A. C.* The production of twin flowers is not very unusual.

DRESSING FOR FRUIT-TREE STEMS TO PREVENT RABBITS AND HARES NIBBLING THEM: *Subscriber.* A paint consisting of cow-dung, clay, soot, with a wineglassful of spirits of tar to one bucketful. Make it rather thick, and smear it on the stems to a height of at least 5 feet. It is not unsightly when dry, and does no harm, rather good, as mossiness is killed by it. Two dressings will usually last a season. If this paint be objectionable, put rabbit-proof wire, or branches of Thorns fastened closely round the stems by means of wire; or make a loose cradle of straight rods three-quarters of an inch in diameter, with a half-inch separating-block in each space, and thread the whole on pieces of wire at the top and bottom. This last is a good kind of defence against stock of all kinds, and as it will slip round the stem when the animals rub against it, they soon learn to let it alone.

GRAPES NOT KEEPING WELL: *J. M.* The fruit having been ripe in August cannot be expected to keep for any great length of time; and owing to a dryish buoyant air not being maintained in theinery during the late damp and rainy weather, decay of the berries has set in. The only remedies are to apply a little fire-heat and to admit a small amount of air at the same time, or to cut the bunches with a portion of the shoot attached to each, and bottle them. When bottled, they will keep in a dry, cool room, if means be adopted to let out the moisture that will arise from the water in the bottles and the fruit itself.

INSECTS: *G. C.* Black aphid. Use tobacco-water.—*J. Challis.* The minute creatures sent are not beetles, but small black Acari, probably immature. It is scarcely likely that they are in any way connected with the Cattle-fly. *R. McL.*

LECTURE ON THE GENUS HYDRANGEA: *J. B. Knowling,*

as you tell us, nothing whatever about the subject you are going to give a lecture upon, we are surprised at your making the attempt. Consult the ordinary text books.

NAMES OF FRUITS: *A. Jackson.* Apple: Hawthornden. Pears: 1, Pitmaston Duchess; 2, Duchesse d'Angoulême; 3, Grosse Calebasse; 4 and 5, Beurré Diel.—*Simmonds.* 1, Mère de Mésage; 2, Cellini; 3, Round Winter Nonsuch; 4, Alfriston; 5, Beauty of Kent; 6, Gloria Mundi.—*J. Day.* Apple Dutch Codlin, Pear Beurré Gris.—*F. S. I.* Easter Beurré; 2, Old Bergamot; 3, Vicar of Winkfield; 4, Winter Nelis; 5, White Doyenné; 6, Old Nonpareil.—*J. F. I.* Emille d'Hébat; 2, Durondeau; 3, Beurré Superfin; 5, Napoléon; 4 and 6, rotten.—*A. Y. I.* Marie Louise d'Uccle; 2, White Doyenné.—*J. L. Hammond.* 1, Emperor Alexander; 2, Cox's Pomona.—*Underhill.* Apple Beauty of Wilts.—*J. W. B.* Liver Pearmain.—*Thomas Denny.* Apple Duke of Devonshire, Pear Beurré Bosc.—*J. H. I.* 2, Rymer; 4, Golden Reinette; others unknown.—*Barkham.* 1, Blenheim Orange Pippin; 2, Ribston Pippin.—*H. T. Subscriber.* 1, Glou Morcean; 2, Beurré d'Espéren; 3, Pitmaston Duchess; 4, Easter Beurré; 5, Swan's-egg; 6, Beurré Rance.—*Wm. Taylor.*—Pear Easter Beurré; 1, Apple Court of Wick; 2, Kerry Pippin; 3, Golden Reinette; 4, Claygate Pearmain; 5, Royal Somerset.—*A. Chapman.* 1, Marie Louise; 2, not quite sure; 3, Chaumontelle.—*Samuel Lord.* 1, Doyenné du Comice; 2, Beurré Charnesse; 3, Beurré Bachelier; 5, Colmar d'Aremberg; the Apples we do not know.—*J. F. P.* The Apple you send is, we believe, Trumpington.

NAMES OF PLANTS: *W. H. B.* *Pernettya mucronata* purpurea.—*N. I. M. D. I.* *Jasminum gracillimum*; 2, *Justicia carnea*; 3, *Pteris serrulata*; 4, *Adiantum trapeziforme*; 5, *Curculigo recurvata*; 6, *Asplenium nidus avis*; 7, *Reidia glaucescens*.—*Lovely.* 1, *Sophranitis grandiflora*; 2, *Oncidium prætextum*; 3, *Oncidium flexuosum*; 4, *Oncidium excavatum*.—*J. W.* *Convolvulus Cneorum*, *Bot. Mag.*, 459.—*J. H. & Son.* *Coronilla Emerus*.—*W. B. I.* *Blechnum occidentale*; 2, *Gymnogramma japonica variegata*; 3, *Asplenium lucidum*; 4, *Reineckia carnea*.—*T. M. I.* *Justicia speciosa*; 2, *Polystichum angulare*; 3, *Sericographis Ghiesbreghtiana*; 4, *Viburnum opulus*; 5, *Aspidium coriaceum*.—*G. T.* *Helianthus rigidus*; *Eupatorium Weinmannianum*.—*M. C. Yes*; a variety of *Liatris scariosa*.—*E. W. P.* The hard brown seed, *Staphylea pinnata*; the other next week.

OSMANTHUS ILLICIFOLIA: *W. B. & Son.* The flowering of this plant is not at all unusual in the south.

PHYSALIS EDULIS: *T. G. P. edulis* is merely a variety of *P. peruviana*.

SCALE ON PALM: *L. F.* With a mixture of lemon-oil and water of the strength recommended by the maker, brush over every part of the plant, and after waiting a few days, syringe with clear water, at a temperature of 100° to 150°.

NATIONAL CHRYSANTHEMUM SOCIETY'S CATALOGUE: *J. L.* This may be obtained from Mr. Richard Dean, Ranelagh Road, Ealing, Middlesex.

PINK AND WHITE VARIETIES OF VIVIAND MOREL CHRYSANTHEMUMS: *J. L.* These can be shown as distinct varieties.

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FRUITS RECEIVED.—*J. F.*—*H. T. R.*—*T. O.*—*H. N. O.*—*G. M.*—*J. McF.*—*F. M. V.*—*J. V.*—*J. R. S.*—*J. W.*—*S. P.*—*H. S.*—*S. R.*

SPECIMENS RECEIVED.—*T. C.*—*R. H. G.*—*C. S.*—*J. E.*

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IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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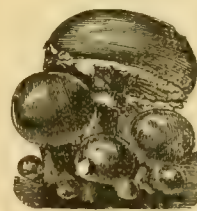
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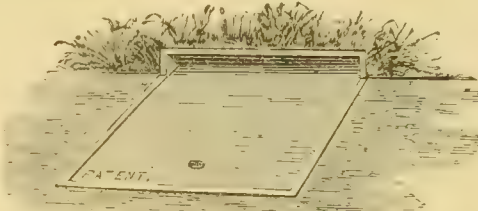
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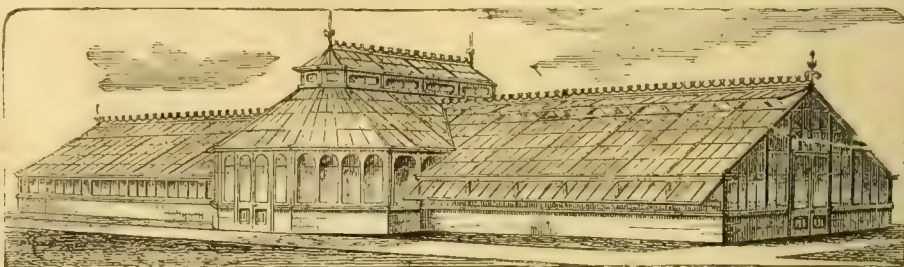
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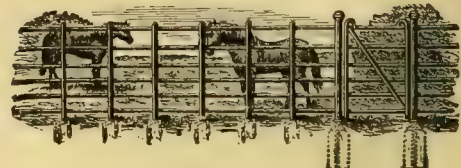
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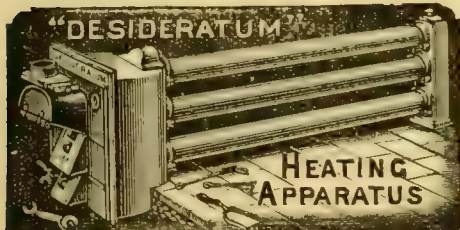
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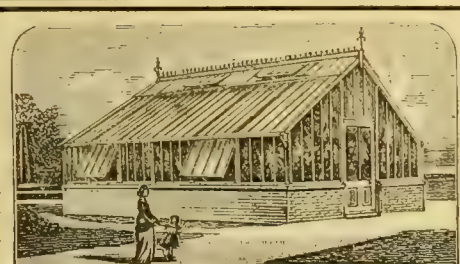
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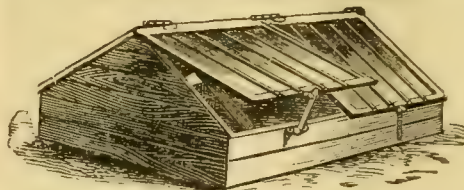


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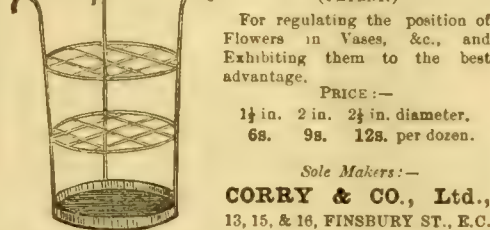
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CATALOGUES RECEIVED.

- ANDRÉ LEROY, Angers (Maine et Loire), France (Brault, Père et Fils, Directors)—Fruit and Forest Trees, &c.
LITTLE & BALLANTYNE, Carlisle—Trees, Forest and Ornamental.
JAS. BACKHOUSE & SON, The Nurseries, York—Forest and Ornamental Trees, Conifers, and Roses.
W. L. LEWIS & Co., Chase Side, Southgate, London, N.—Orchids.
WALTER LITTLE, Stafford—Forest and Fruit Trees, Conifers, Ornamental Trees and Shrubs, Roses, &c.
FISHER, SON, & SIBRAY, Handsworth Nurseries, near Sheffield—Fruit, Forest, and Ornamental Trees and Shrubs.
THE SURREY ORCHARD CO., Redhill—Bulbs.
LOUIS VAN HOUTTE, PÈRE, Ghent, Belgium—Herbaceous and Alpine Plants, Ornamental Trees and Shrubs, Roses, Fruit Trees, &c.
GEO. COOLING & SONS, Bath—Fruit Trees, Roses, Shrubs, &c.
PAUL & SONS, The Old Nurseries, Cheshunt—Roses.

GARDENING APPOINTMENTS.

- Mr. J. G. P. COCKS has been appointed Head Gardener to R. H. R. WILSON, Esq., Broomhead Hall, near Sheffield, Yorkshire.
Mr. GEO. HARRIS, formerly Gardener to Colonel HANBURY BARCLAY, Cross Oak, Berkhamstead, as Gardener to the same gentleman at Tingrith Manor, Woburn, Beds.
Mr. CHARLES SOLMAN, late General Foreman, Leighton House Gardens, Westbury, Wilts, as Head Gardener to J. BENNETT STANFORD, Esq., Pyt House, Tisbury, Wilts.
Mr. WM. BAKER, from The Clyne Valley Nurseries, Sketty, Swansea, as Head Gardener to D. JENKINS, Esq., Llwyn Helyg, Swansea.
Mr. T. G. FLANDERS, for the past two years Foreman at Down Hall, Harlow, Essex, as Head Gardener to A. R. MOTION, Esq., Faulkbourne Hall, Witham, Essex.

BELGIAN.
BULLETIN d'ARBORICULTURE, de FLORICULTURE, et de CULTURE MARAICHERE. A monthly horticultural work, with superb Coloured Plates and Illustrations. Published since 1865, by F. BURVENICH, F. PAYNAERT, E. RODIGAS, and H. J. VAN HULLE, Professors at the Horticultural School of the Belgian Government at Ghent. Post-paid, 10s. per annum.
H. J. VANHULLE, Botanical Gardens, Ghent, Belgium.

MESSRS. BEN. REID AND CO., Guild Street, Aberdeen, beg to state, in reply to numerous applicants, in response to their Advertisement in last week's *Gardeners' Chronicle*, that the SITUATION IS NOW FILLED.

W. TROY begs to acknowledge the APPLICATIONS for FOREMAN'S PLACE, which he had not time otherwise to answer.

WANTED, thoroughly competent SINGLE-HANDED GARDENER, to take in hand a Small Garden, and keep it in perfect order; Flowers, Fruit, Vegetables, and a very little Glass. Wife to look after Office. A good situation, and liberal wages. Abstinence preferred. No incumbency. — Apply, stating age, wages required, and references, to B. J. H. FORDER, Buriton, Petersfield.

WANTED, as GROWER (Mushrooms), a good man thoroughly competent to take charge of houses growing for Market.—Apply J. RAMSAY, Mill Cottage, West Drayton.

WANTED, a FOREMAN, for a Market Nursery, where Grapes, Tomatoes, and Cucumbers are largely grown. Also Out Flowers and Pot Plants in large quantities. None but those whose character will bear the strictest investigation need apply.—The applicant must state his age, wages required, and where previously employed to E. RÖCHFORD, Mill Lane Nursery, Cheshunt, Herts.

WANTED, an OUTDOOR FOREMAN.—Must be successful budder and grafter, and capable of managing men. State wages and full particulars.—H. ENGLISH & Co., Clapton Nursery, near Clevedon, Somerset.

WANTED, a Hard-working young MAN, for Private Place; one that can propagate and grow well Roses, Tree Carnations, Poinsettias, &c.—State age and wages expected, with particulars, to HORTICULTURIST, *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

WANTED, an UNDER GARDENER.—Roman Catholic. Wages 15s. per week. Bothy, milk, vegetables.—FRANCIS E. HARDING, Old Springs, Market Drayton.

WANTED, a well-educated YOUTH, in a Nursery where Rose and Fruit Trees are a speciality. An unusual opportunity to master the Business.—WILL. TAYLER, Osborn Nursery, Hampton, Middlesex.

Seed Trade.
WANTED, a SHOPMAN, with a thorough knowledge of Seeds and Bulbs, and accustomed to a quick Retail Counter Trade.—THOMSON'S Seed Warehouses, 20, High Street, Birmingham.

WANTED, immediately, as ASSISTANT SHOPMAN, a young man, age about 25, with good experience in Vegetable and Flower Seeds. Must be energetic and of good address. State age, salary required, where last employed, and enclose reference to DICKSON, BROWN, and TAIT, Seed Merchants, Manchester.

WANTED, a young LADY, for Florist's Shop.—Well up in Wreaths, Sprays, Bouquets, &c.—Apply, A. BARKER, Finney Gardens, Hanley.

WANT PLACES.

TO GARDENERS AND OTHERS SEEKING SITUATIONS.

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application.
Telegraphic and Postal Address—"DICKSONS, CHESTER."

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

F. SANDER AND CO. can recommend several highly qualified and energetic HEAD and UNDER GARDENERS, of excellent character, and proved ability; men thoroughly fitted for all the various duties of their profession. For all particulars, please apply to—F. SANDER AND CO., St. Albans.

GARDENER (HEAD).—Married, no children. LORD ALGERNON PERCY wishes to recommend the above. Steady, sober, trustworthy, hard-working, and honest. Good Fruit and Plant Grower. Has been twelve years in Lord Algernon's service as Head Gardener, and only leaves in consequence of the establishment being broken up.—J. SKILLING, Brook, Albury, near Guildford, Surrey.

GARDENER (HEAD); age 36.—Mrs. BAGOT LANE, Kedd's Bromley Manor, will be pleased to recommend her late Head Gardener. Twenty-two years' experience. Eight years in last situation. Good references.—J. L. BARRATT, Lower Leigh, Stoke-on-Trent.

GARDENER (HEAD); age 30.—Mr. McCULLOCH, Head Gardener and Forester to Sir Alexander Acland Hood, Bart., M.P., St. Andries, Bridgewater, wishes to recommend his General Foreman, Ernest Williams as above, who has been with him seven years as a good all-round Man, well up in his duties; excellent character from employer. Reference as above.

GARDENER (HEAD), of two or more.—Age 42, married, no family. Twenty-five years' experience in all branches. Good references for reliability, honesty, sobriety, and abilities. Wife thorough Laundress if required.—F. PAY, Hawk's Hill, Bourne End, Maidenhead.

GARDENER (HEAD), where two or three are kept.—Thoroughly good all-round general experience in all branches, both Inside and Out. Four years' excellent character.—Apply, stating wages, to W. GARDENER, Effingham Park, Crawley Down, Sussex.

GARDENER (HEAD).—Age 43, married; long practical experience in all branches, and thoroughly conversant with the requirements of a large establishment. Excellent testimonials, and ten years' character.—H. COOK, Box Hill, Dorking.

GARDENER (HEAD), or ORCHID GROWER.—Age 30, married, one child; sixteen years' experience in all branches. Six years' character from present situation.—E. DUNKLEY, 33, Broadwater Down, Tunbridge Wells.

GARDENER (HEAD) and BAILIFF.—Scotchman. Thoroughly experienced in all branches of Gardening and Farming. Leaving through Gentleman giving up the place. Many years excellent character.—JAMES KENNIE, Gelli Gynan, near Mold, North Wales.

GARDENER (HEAD WORKING), where four or more are kept.—Age 40; twenty-six years' practical experience Inside and Out. Eighteen years' Head Gardener.—G. BARTLE, 18, Brown Lane South, Beeston, Notts.

GARDENER (HEAD WORKING).—Age 32; married when suited. Mr. MACKENZIE, Head Gardener to Lady Siemens, Sherwood Park, Tunbridge Wells, wishes to recommend William Heath, who has been with him two and a-half years, to any Lady or Gentleman requiring the service of a good all-round man.

GARDENER (HEAD WORKING), where two or three are kept.—Married; twenty-five years' experience. Fifteen years in present situation; highly recommended.—GARDENER, Tollerton Manor, Nottingham.

GARDENER (HEAD WORKING), where two or three are kept.—Age 29, married when suited; fourteen years' experience in all branches. Good references. Abstainer.—EGGLETON, 20, The Common, Ealing, W.

GARDENER (HEAD WORKING, or SINGLE-HANDED).—Age 39, married, no family; experienced in all branches.—GAY, 58, Foreign Street, Loughborough, Camberwell, S.E.

GARDENER (HEAD WORKING).—Age 27; Mrs. E. M. NELSON, Hangerhill House, Ealing, W., will be pleased to recommend Arthur Pentney, who has served in these gardens as Foreman three and a-half years, and now seeks an engagement as above.

GARDENER (HEAD WORKING).—Age 36, married; experienced with Grapes, Peaches, Tomatoes, Stove and Greenhouse Plants, Flower and Kitchen Gardens, &c. Good character.—SHEPHERD, Staubridge, Petersfield, Hants.

GARDENER (HEAD WORKING).—Age 35, married; twenty years' experience in all branches. Satisfactory reasons for leaving. References from Hawkstone, Combe Abbey, Lythe Hill, &c. Mr. Bennett-Stanford, Pyt House, Tisbury, Salisbury, will answer any inquiries.—T. SMITH, Semley, Shaftesbury, Dorset.

GARDENER (HEAD WORKING).—Age 31. Experienced in Vines, Melons, Cucumbers, Tomatoes, &c., Stove and Greenhouse Plants, Flower and Kitchen Gardens; good References.—A. BOOKER, Mr. Cole, The Vineyard, Feltham, Middlesex.

GARDENER (HEAD WORKING).—Age 40, married, two daughters. Thoroughly experienced; four years Head in present Gardens, six previous. Land and Stock. Good references from present and previous employers.—J. I. BARLEYCORN, Fowley, Liphook, Hants.

GARDENER (HEAD WORKING).—Age 38; married, two children, 8 and 6. Experienced in Orchids, Stove and Greenhouse Plants, Vines, Peaches, Cucumbers, Melons, Flower, Fruit, and Kitchen Garden. Highest references.—G. WARRINGTON, Newlands, Sittingbourne.

GARDENER (HEAD WORKING).—Age 45; life experience in all branches, especially Fruit. Well up in the Management of Land and Stock. Good character for honesty and sobriety. Wife good Dairywoman.—K., 16, John Street, Tunbridge Wells.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 33, married; eighteen years' experience in all branches. Good character.—G. S., 9, Prospect Place, Belvedere, Kent.

GARDENER (SINGLE-HANDED, or good SECOND).—Nine years' experience.—L. GOODALL, Hartley, Westpoll, near Basingstoke, Hants.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 29, single; would not object to view of paying. Seventeen years' thorough practical experience in all branches. Early and Late Forcing, Fruits, Flowers, and Vegetables, Vines, Peaches, Melons, Cucumbers, Tomatoes, Mushrooms, &c. First-class character and references. Total abstainer.—H. C. 10, Willoughby Road, Norbiton, Kingston-on-Thames, Surrey.

GARDENER (SINGLE-HANDED, or otherwise).—Age 28, married; fourteen years' experience Inside and Out. Good references.—H. EMERY, 3, Teresa Terrace, Hampstead, N.W.

GARDENER (SINGLE-HANDED, or where help is given).—Age 33, married; well recommended. Experience in all branches. Leaving through establishment being reduced.—J. DIGBY, Sunny Hill, Torquay.

GARDENER (good SINGLE-HANDED, or where help is given).—Age 27, married when suited; twelve years' experience in Vines, Peaches, Stove and Greenhouses, Flower and Kitchen Garden. Good references.—J. C., 48, Oxford Road, Meanwood Road, Leeds.

GARDENER (good SINGLE-HANDED).—Age 33, married, two children. Life experience in Glass, Flowers, and Kitchen Garden. Good character.—STEVENS, 135, Dennett Road, Croydon, W.

GARDENER (good SINGLE-HANDED).—Age 28, married; eleven years' experience in all branches. A gentleman wishes to recommend the above.—GARDENER, Mr. James Poulter, Great Shelford, Cambridge.

GARDENER.—Age 24, married when suited; understands Stove and Greenhouse Plants, and the usual Outside Work. Testimonials from employer.—H. D., 32, South Croxted Road, West Dulwich, S.E.

GARDENER, who has had good experience in all departments except Orchids, desires to place himself for a few months under a good Orchid grower, in either Private Garden or Nursery; £10 bonus offered.—C. B., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

GARDENER (good SECOND); age 26; thoroughly experienced, Inside and Out.—Mr. BRADY will be pleased to recommend as above, R. LIMON, Knights, East Finchley, London, N.

GARDENER (SECOND).—Age 24; nine years' experience Inside and Out. Good Fruit and Plant Grower. Excellent testimonials.—F. JAY, Wincombe, Shaftesbury.

GARDENER (SECOND); age 23.—H. SHEPARD, Head Gardener to G. Christian, Esq., Bighton Wood, Alresford, Hants, can with confidence recommend W. Hurst to any one requiring a trustworthy and intelligent man. Good character. For particulars, apply as above.

GARDENER (SECOND), in a good Establishment.—Age 28; eleven years' practical experience Inside and Out in good places. Good character and testimonials from present and previous employers.—W. H., 8, Dood's Road, Reigate.

GARDENER (SECOND), where more than two are kept.—Age 31, married, one child; thoroughly experienced, Inside and Out. Good character.—GARDENER, 6, Caird Street, Queen's Park.

GARDENER, FOREMAN, or good SECOND.—Age 27; two years as Foreman in last place. Highly recommended.—T. WINSLADE, 11, Corbyn Street, Hornsey Road, Finsbury Park.

GARDENER (UNDER), in a good establishment.—Age 18; abstainer. Excellent character from last place.—W. ELLIOTT, Hillmorton, Rugby.

GARDENER (UNDER), or small Garden and Cow to look after.—Age 19; abstainer.—L. YARNTON, 86, Holland Road, Kensington, W.

GARDENER (UNDER), or in a Nursery where he could improve.—Age 22; five years' good character.—J. WARE, Lindfield, Sussex.

GARDENER (THIRD), where five or six are kept.—Age 20. Six years' experience. Leaving through a death. Good character. Abstainer.—H. G., Belmont Grove, Chislehurst.

ROSE GROWER, Inside or Out.—Has been many years a successful exhibitor at the National and Provincial Shows. Good references.—A. B. C., 8, Parliament Street, Small Heath, Birmingham.

MANAGER, or FOREMAN.—Thoroughly acquainted with the general routine of a Nursery, all kinds of Plants, Fruit, Cut Flowers, &c., for Market. Thirty years' experience. First-class references.—JOHNSON, The Vineries, Paignton, Devon.

MANAGER.—Wanted management of an up-to-date London Market Nursery, or a go-ahead provincial Nursery, or charge of a branch place. Thorough practical knowledge of all details of the business. Good address.—E., 152, City Road, London, E.C.

FOREMAN (GENERAL).—Age 30; twelve years' experience in Orchids, Fruit, Stove, and Table Decorations. Two years' present character. Life abstainer.—THOS. BROCKBANK, 10, Ulric Street, Camberwell, S.E.

FOREMAN (GENERAL, or Plant and Fruit); age 24.—GEO. ABBEY, Avery Hill, Eltham, Kent, can highly recommend H. Bishop. Eleven years' experience in first-class situations, including two here.

To Market Nurserymen.

FOREMAN, PROPAGATOR, and GROWER.—Age 30. Life experience in Market Nursery; thoroughly experienced in double Primulas, Carnations, Bouvardias, Ficus, Genistas, Poinsettias, Cyclamen, Euphorbias, Solanums, Hydrangeas, Pelargoniums, Cucumbers, Tomatoes, and all classes of soft-wooded Plants. Good character.—W. H., 27, Folkstone Road, Edmonton.

FOREMAN, MANAGER, PROPAGATOR.—Age 33, married; thoroughly experienced in Vines, Tomatoes, Cucumbers, Ferns, Orchids, and Palms. Good references from present and previous places.—G. GOODCHILD, 11, Foreign Street, Camberwell, S.E.

FOREMAN or GENERAL.—Age 26; twelve years' experience in all branches in good establishments. Good references.—F. SOUZA, Lockerley Hall, Romsey, Hants.

FOREMAN (GENERAL, or Plant and Fruit); age 24.—GEO. ABBEY, Avery Hill, Eltham, Kent, can highly recommend W. Bishop. Eleven years' experience in first-class situations, including two here.

FOREMAN (GENERAL).—Age 27; thirteen years' experience; highest references as to character and ability.—H. PICKSTOCK, Moxhall Hall, Erdington, Birmingham.

FOREMAN (FIRST), Journeyman in good establishment; age 25; ten years' experience.—Mr. EBBUTT, Drakelow Gardens, Burton-on-Trent, can with confidence recommend J. Grix as above.

FOREMAN (Inside or General).—Age 26; two years in previous situation as Foreman. Thirteen years' experience in Fruit, Stove, and Greenhouse Plants, Orchids, and general work.—J. HYGATE, Brighton Cottage, Handcross, Crawley, Sussex.

FOREMAN (good GENERAL).—Age 26; ten years' experience. Good Plant and Fruit Grower. Good character and testimonials. Disengaged.—W. H. WATERS, Dane's Lane, Keynsham, near Bristol.

JOURNEYMAN, in either Plants or Fruit, or in the Houses; age 20.—Mr. JONES, until lately Gardener at Sutton Hall, Yorks, would be pleased to recommend J. SMALES, who has been with him two years, as above.—J. SMALES, Campbell Terrace, Easington Lane, Fencehouses, Durham.

JOURNEYMAN (Inside, or Inside and Out).—Age 22; six years' experience. Good character.—C. COLMER, Bassett Green, near Southampton.

JOURNEYMAN (Inside and Out), under a Foreman.—Age 23; seven years' experience. Good character from present employer. Bothy preferred.—W. LEVETT, Benhall Lodge, Saxmundham, Suffolk.

JOURNEYMAN, Inside, under a Foreman.—Age 20; six years' experience. Good references.—A. HOBBS, The Gardens, Langford House, Lechlade.

JOURNEYMAN, Inside.—Age 19; has had seven years' experience in large establishments. Good characters. Bothy preferred.—A. B., 4, Temple Bar, Cosham, Hants.

JOURNEYMAN, Inside, under a FOREMAN.—Age 23; eight years' experience. Bothy preferred.—F. BOURNE, Lindley Hall Gardens, Nuneaton.

JOURNEYMAN or FOREMAN.—Age 25. Eight years' experience; three years present situation; good character.—W. BARRETT, Moreton, Bideford, N. Devon.

JOURNEYMAN, in the Houses.—Age 20. Five years' experience; good character.—A. WINGROVE, Rousham Park, Steeple Aston, Oxon.

JOURNEYMAN, under a good Foreman.—Age 25; four years' experience.—T. E. CLIFFORD, Lindley Hall Gardens, Nuneaton, Warwickshire.

JOURNEYMAN (FIRST), under a Foreman.—Age 23; six years' experience. Excellent characters from present and previous employers. WILLIAM HUTCHINGS, Oakley Hall Gardens, Basingstoke.

JOURNEYMAN, Inside or Out.—Age 23; nine years' experience. Good reference.—W. E. SMITH, 84, High Street, Sydenham, S.E.

JOURNEYMAN (Inside); age 23; eight and a half years' experience.—Mr. J. WHITE, The Gardens, Harefield Grove, Uxbridge, Middlesex, can with confidence recommend George Simmonds as above.

JOURNEYMAN (Inside, or Out).—Age 18; three years' experience. Total abstainer. Can have good character.—H. STOPPS, Church Street, Woking Village.

JOURNEYMAN (SECOND).—Age 20; two years in a good establishment, and some Nursery experience. Strong and healthy. Bothy preferred. Good character.—GARDENER, Cookham Rise, near Maidenhead.

IMPROVER or JOURNEYMAN.—Young Man (age 19), seeks a situation as above. Six years' experience. Good reference.—H. KNOTT, Gardens, Ashfield House, Branston, Lincoln.

ASSISTANT (JUNIOR), or IMPROVER.—A young man (age 20), who has been with a Seedsman and Nurseryman, wants re-engagement in the Retail Seed and Bulb Department as above. Present situation three years. Good character.—E. JENNINGS, 4, New Buildings, Tenter Street, Aldgate, E.

TO RELIABLE SEED FIRMS, North Wales, Cheshire, and Shropshire. An energetic Seedsman of good address is open to communicate with a good Firm, with a view of his representing and augmenting Business in the above Districts. Speaks excellent English and good Welsh. Highest references.—Apply, W. T. H. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

MESSRS. PITCHER and MANDA have great pleasure to recommend their TRAVELLER, Mr. S. JOHNSON, who has been representing them in Great Britain for over two years, and can give the best of testimonials, and can strongly recommend him to anyone requiring his services. He is now leaving us on account of our giving up the European Branch at Hextable.—S. JOHNSON, Gloucester Place, Windsor.

TO HORTICULTURISTS.—Advertiser seeks engagement in a large Horticultural Business, where he could gain experience. Would be willing to give time if necessary.—For particulars, apply to A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO GARDENERS.—Situation wanted by a youth (age 18) under a good Gardener. Steady and industrious, willing to be useful. Abstainer. Good character from last employer.—J. BEECH, Prior's Court Lodge, near Newbury, Berks.

TO GARDENERS.—A young Man seeks a situation as IMPROVER or JOURNEYMAN (age 19). Four years' experience.—Address R.S., Ivy Cottage, Osbastone, Hinkley.

TO GARDENERS, &c.—Situation required by a Young Man (age 23), abstainer and non-smoker. Slight experience. Good character.—W. F., 2, Sherwood Villas, Roxeth, Harrow.

TO GARDENERS.—J. S. UPEN, Wiggan-thorpe, York, wishes to recommend a strong youth (age 19) for the Garden. Four years' experience, Inside and Out. York-shire preferred.

TO GARDENERS.—Situation wanted for a Lad (age 16) in the Garden; strong and active; Gardener's son.—G. PERKINS, Arthingworth, Northampton.

TO NURSERYMEN, &c.—A young Man seeks re-engagement Indoors. Six years' experience in London Market Nurseries; two years last situation. Highly recommended.—BROWN, 6, Queen's Road, Wickham Lane, Welling Kent.

TO NURSERYMEN.—Situation required by a young man as IMPROVER, in good Nursery. Good Salesman. Can be well recommended. Good character.—G. T., 22, Avenue Road, Mill Hill Park, Acton.

TO NURSERYMEN.—Young Man (age 20) seeks a situation in a Nursery, under Glass; five years' experience.—S. H. P., Belvedere, Lower Caversham, Oxon.

MR. J. F. McLEOD, Dover House Gardens, Rotherham, can strongly recommend to any Gardener, Lady, or Gentleman, a man (middle-aged) to attend to Cows, and fill up time in Garden; married, no family.

SALESMAN or GROWER.—Age 28; good experience of Palms, Ferns, &c., or could manage branch business. First-class references.—W. B., 1b, Knightsbridge Green, S.W.

To Nurserymen and Florists.

SALESMAN, or FURNISHER.—Age 27. Good experience of West End, and not afraid of work. First-class references.—W., 33, Brookville Road, Fulham, S.W.

SHOPMAN; age 22; Swiss.—Situation wanted as above; speaks French, German, and English. Good references.—A. Z., 107, Charlotte Street, Fitzroy Sq., W.

TRAVELLER or MANAGER.—S. JOHNSON would be glad to represent any good house having large General Stock to offer. Well-known on the road, both to the Trade and privately. Last two years for Messrs. Pitcher & Manda; leaving through their giving up their European Branch.—Gloucester Place, Windsor.

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HANDY MAN, on a large Estate.—Can Paint, Glaze, and do Carpentering, or any kind of work.—Age 32, married. Seven years' good character from Mr. J. BROWN, Great Doods, Reigate.

CLERK, who is experienced in the Nursery and Seed Office-work, seeks re-engagement. Good references.—H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

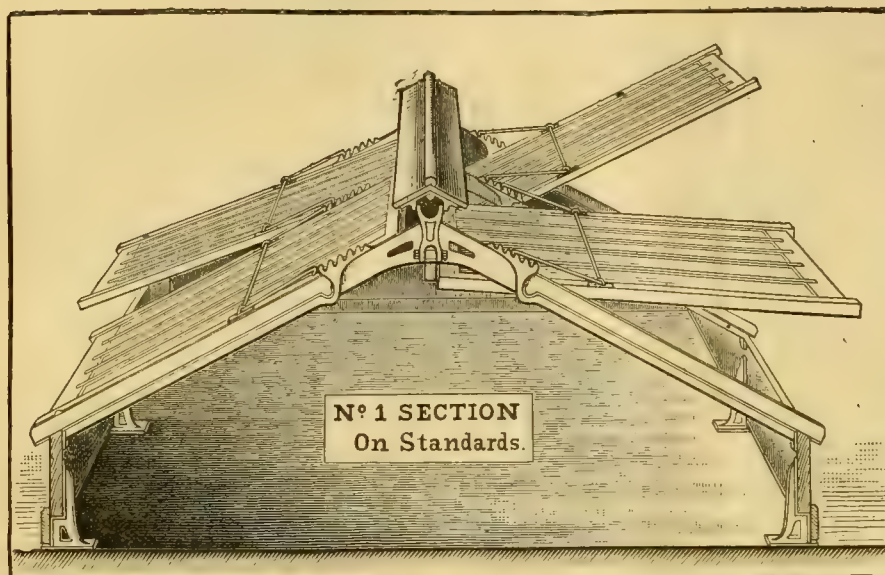
SEED TRADE.—Situation wanted as SHOPMAN, or ASSISTANT. Seven years' experience in two good Houses. Age 21.—SEEDSMAN, 36, Waterway Street West, Nottingham.

THE DISSOLUTION OF THE HOUSE OF LORDS has often been predicted by politicians, who generally speak according to their own desires. It is difficult to uproot old institutions in England, especially when they are associated with the rights of the people. It is well-known that there must be a check upon the action of our legislators, or their authority would soon become too autocratic to be consistent with our liberties. The Government must be thoroughly representative of all classes, if the spirit and letter of its creation is to be upheld. Putting aside politics, however, Holloway's Pills and Ointment have been a boon to rich and poor alike for over fifty years, as the best remedies for all diseases.

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THESE FRAMES SHOULD BE IN EVERY GARDEN.

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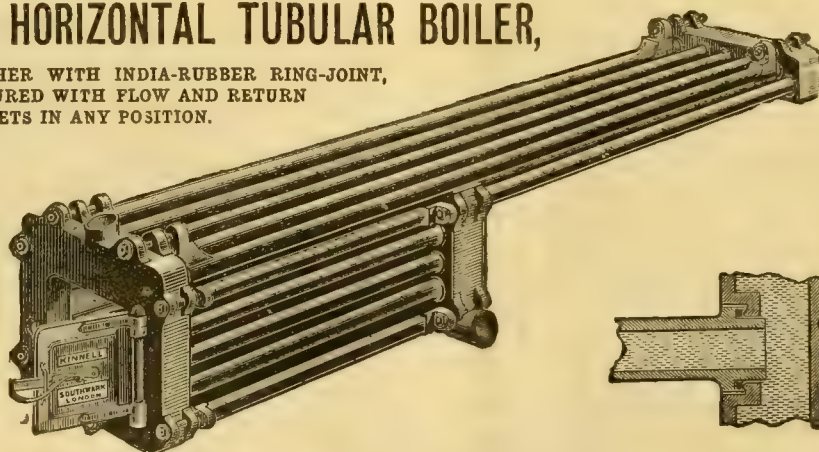
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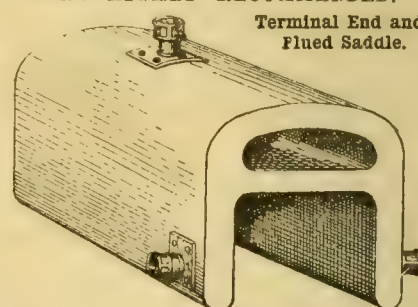
This Boiler has special advantages over any other of this type manufactured; the configuration of the centre casting divides the top connecting-pipe into two sections, gives increased waterway, and is removable without taking off back casting. No other Boiler has this advantage.



TERMINAL END AND CHAMBERED SADDLE BOILER.

VERY HIGHLY RECOMMENDED.

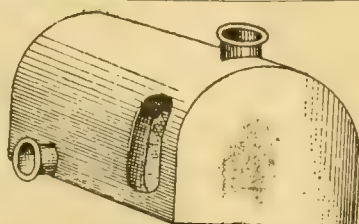
Terminal End and Flued Saddle.



This Boiler is of the IMPROVED SADDLE FORM, is manufactured in wrought iron, welded; the back waterway, against which full force of the fire strikes, and the centre flue, make this one of the most economical Boilers extant. Made in all sizes, from 24 to 72 in. long.

CAST-IRON SADDLE BOILER,

WITH WATER-WAY END
And CENTRE-FLUE.



The above is the best of all Boilers of the plain Saddle type. Made in all sizes, from 24 to 66 inches long.

Holding one of the largest stocks of H. W. Boilers, Pipes, and Fittings, in the Kingdom, we are able to execute Orders of any magnitude from London Warehouses, or to despatch direct from Works without delay. To meet the requirements of our increasing business, we have recently added No. 65, Southwark Street to our London premises, and have now the largest and finest Show-rooms in our Trade in the Kingdom. Price List illustrating all types of Boilers, Valves, Pipes, Ventilating Gear, and all classes of Horticultural Appliances free on application.

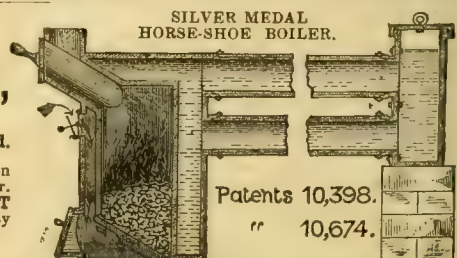
65 and 65a, SOUTHWARK STREET, LONDON, S.E.; also Branches at GUERNSEY and JERSEY, for CHANNEL ISLANDS.

SILVER MEDAL HORSE-SHOE BOILER,

The Best and Most Economical
Amateurs' Boiler Manufactured.

Section of Boiler and Pipes, showing action of Hot Blast and Automatic Regulator. Awarded the SILVER MEDAL (FIRST PRIZE) by the Royal Horticultural Society in 1883; still stands without rival for—

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SILVER MEDAL
HORSE-SHOE BOILER.

Patents 10,398.

" 10,674.

The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2758.

No. 358.—Vol. XIV. { THIRD SERIES. }

SATURDAY, NOVEMBER 4, 1893.

{ PRICE 3d. POST-FREE, 3½d. }

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"GARDENERS' CHRONICLE."

Continued Increase in the Circulation.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, increased to the extent of 75 per Cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

ADVERTISERS will greatly assist our efforts to get to Press earlier, by forwarding their favours as EARLY IN THE WEEK as possible.

H. CANNELL AND SONS' CARNATIONS and NEW CHRYSANTHEMUMS.—Special CATALOGUE of the above is now ready, and sent post free. It will be found most complete with such valuable information, that it is absolutely necessary all lovers of these two families should possess it at once.
SWANLEY, KENT.

WHINHAM'S INDUSTRY GOOSEBERRY, the most profitable Gooseberry in cultivation. Strong 2-year old bushes, 2s. 9d. per dozen.
THOMAS H. COLEMAN, Saffron Walden.

FANCY TULIPS.

SUTTON'S SPECIAL SELECTION of May-flowering SINGLE TULIPS, including many of the finest flowers grown, brilliant in colour, and elegant in form. Price 2s. 6d. per dozen; 17s. 6d. per 100.

SUTTON'S SINGLE FLORISTS' TULIPS, finest mixed, all white grounds, choice, equal to named sorts. Price 1s. 6d. per dozen; 10s. 6d. per 100.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

Grape Vines—Grape Vines—Grape Vines.

B. S. WILLIAMS AND SON have some extra strong Fruiting and strong Planting Canes still on hand. Full particulars as to Prices and Varieties on application.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

ORCHIDS.—New, Rare, Cheap.—Imported and Established.
CATALOGUE just published, post-free on application.
FRED. HORSMAN AND CO., Colchester.

FOR SALE, BEANS, Canadian Wonder, 35s. per 2 cwt.; do. Scarlet Runners, 40s. per 2 cwt.; do. Scarlet Runners, white-seeded, 40s. per 2 cwt., f.o.b. Hamburg.
W. DOLLER, Seedsman, Kolomea, Galicia, Austria.

ORCHIDS.—New and rare species a special feature. Catalogue forwarded post-free on application.
SFEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich, London, S.E.

PEACHES and NECTARINES, Six extra-strong dwarf-trained, in fine bearing condition. Price, and all particulars, on application to—
DICKSON AND ROBINSON, Seed Merchants, Manchester.

LILIAM AURATUM.—Good, plump, sound bulbs, 9s., 12s., and 18s. per dozen; gigantic bulbs, 3 s. and 42s. per dozen. LILIAM HARRISII, 6s., 9s., 12s., and 18s. per dozen; a few gigantic roots at 30s. and 42s. per dozen. LILIAM BROWNII, 30s. and 42s. per dozen.

All other good Lilies at low prices.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

JUBILEE, BISMARCK, and other fine APPLES; PEACHES and NECTARINES, fine standard, trained, and dwarf maiden trees; GRAPE VINES, for fruiting at once; WHITE ROSE, S. DE S. A. PRINCE, a few dozen large trees, prepared for forcing. Wholesale and retail.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

BORDER CARNATION (Ketton Rose), the best kind for bedding, very hardy, and flowers abundantly. The trade supplied. Also, other good hardy kinds. LIST free from
W. H. DIVERS, Ketton Hall Gardens, Stamford.

CARNATIONS.—Strong-rooted Layers of Raby Castle, 25s. per 100; dozen, 4s. Old Crimson Glove (very fine stock), 20s. per 100; dozen, 3s.
"LOADSTONE" and HELEN JULIET, the Lady Florists, School of Gardening, Hemel Hempstead, Herts.

RASPBERRY CANES.—Norwich Wonder, Carter's Prolific, also Fastolf, well rooted. Not less than 1000 canes supplied.
ALBERT BATH, Vine Court, Sevenoaks, Kent.

To Growers of Orchids.

C. AND J. TUFFIN, COMMISSION AGENTS, Covent Garden Market, W.C., have a large demand for ORCHID BLOOM and other CHOICE CUT STUFF.

HENRY RIDES, Centre Avenue, Covent Garden, W.C., is open to RECEIVE CONSIGNMENTS of GRAPES, PEACHES, TOMATOS, CUCUMBERS, MUSHROOMS, &c. Highest Market Prices guaranteed. Prompt Cash. Empties on application.

WANTED, 150 to 200 RHODODENDRON PONTICUM, from 5 to 8 feet. Lowest price and particulars to S., 19, Westcroft Square, Hammersmith.

CHINESE SACRED NARCISSUS, FAIRY LILY, or JOSS FLOWER.

VEITCH'S annual importation of these Bulbs just arrived in splendid condition. Each, 9d.; per dozen, 7s. 6d. Full particulars in BULB CATALOGUE, sent gratis and post-free on application.

JAMES VEITCH AND SONS, Royal Exotic Nursery, Chelsea, London, S.W.

VEITCH'S COLLECTIONS of BULBS for GROWING in the OPEN GROUND.—350 bulbs, 10s. 6d.; 700 bulbs, 21s.; 1250 bulbs, 42s.; 2000 bulbs, 63s.; 3275 bulbs, 105s. For particulars see CATALOGUE, gratis and post-free on application.

JAMES VEITCH AND SONS, Royal Exotic Nursery, Chelsea, London, S.W.

GERMANIA CARNATIONS, strong stuff, throwing up Flower-shoots, in 32s., 60s. per 100. ALEGATIERES, commencing to flower, in 48s., 40s. per 100.
C. JOHNSON AND CO., The Nurseries, Hampton.

5000 GOOSEBERRY CROWN BOB.—4-yr.; healthy, well-rooted stuff; good heads, and well upon the stem. £5 per 1000.—WEBB AND BRAND (late Chater), Nurseries, Saffron Walden.

Prize Cob Filberts.

MR. COOPER, Western Elms, Reading (late of Calcot Gardens), is the largest grower of Prize Cob Filberts in the Kingdom; 20,000 fine young Trees now ready for Sale. Pamphlets and Price Lists on Application.

LANE'S PRINCE ALBERT APPLE. A quantity of Maidens for Sale. Apply to H. T. POTTER, Dunstable.

CHOICE CARNATIONS.—Grand Layers. Reynolds Hole, Raby, Mrs. Frank Watts, Germania, and Gloire de Nancy, 5s. 6d. per doz.; Old Glove, 3s. per doz., free. COLEMAN, Saffron Walden.

DOUBLE WHITE NARCISSUS.—Splendid strain, 17s. 6d. per 1000, on rail. Sample 50 free by post for 1s. 9d.; 100 for 3s. Cash in all cases with order.
J. J. CLARK, Goldstone, Brighton.

FOR SALE, 10,000 three and four times transplanted SCOTCH FIRS, from 4 to 12 feet, well furnished. Less than half price.
E. TANNER, Nurseryman, Groombridge, Sussex.

CARNATIONS.—Souvenir de la Malmaison, Rothschild's variety, deep pink, strong plants, 50s. per 100, 7s. per dozen; Germania, Mrs. R. Hole, Mrs. F. Watts, 30s. per 100, 4s. per dozen.
JAMES GREEN, Reliance Nurseries, March.

To the Trade.

IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will NOT be worried to order.

E. D. SHUTTLEWORTH AND CO., LTD., Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our specialty—really good stuff grown for the Trade.

HORTICULTURAL SHADINGS, NETTINGS, TIFFANY, WADDINGS, COTTON WOOL for Packing Flowers, CANVAS, TWINES, &c., manufactured and supplied wholesale by JOSEPH COOKSON, 21, New Cannon Street, Manchester.

J. WEEKS & Co., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsman in the United Kingdom. London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,
CENTRAL AUCTION ROOMS AND ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Toddington Nurseries, Winchcombe, GLOUCESTERSHIRE.

IMPORTANT TWO DAYS' SALE OF FRUIT TREES and other NURSERY STOCK, CARNATIONS, FERNS, and ROSES, by order of the Toddington Orchard Company, Limited, in Liquidation.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above, on WEDNESDAY and THURSDAY NEXT, November 8 and 9, at 1 o'clock precisely each day,
10,460 FRUIT TREES,

Standards, Half-standards, and Pyramids, mostly 3-yr. trees, consisting of 4700 Apples, and 3000 Pears, both including the leading kinds; 1600 Farleigh Damsons, Gisborne and Pershore Feathered Plums, 17,800 Black Currants, all Black Naples, 2 and 3-yr. bushes; a large quantity of FOREST TREES and SHRUBS, amongst them Ash, Limes, Birch, Privet; 2400 Laurels, bushy plants, 2 to 3 feet; Araucarias and Wellingtonias; 3000 TREE CARNATIONS, in grand condition for winter blooming, and promising well for an abundance of flower, including Miss Jolliffe, La Neige, Germania, and other well-known varieties; 250 MAIDENHAIR FERNS, 3000 Gros Colmar and Alicante VINES, 700 ROSES, mostly in pots, of the best sorts; Standard and Trained PEACHES and NECTARINES, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67, and 68, Cheapside, London, E.C.

N.B.—The Nurseries are situate seven miles from Ashchurch station (Midland), and eight from Evesham (Midland and G.W. Railway). Conveyances will meet certain trains at Ashchurch on the Sale Days, as noted in Catalogue.

Enfield Highway, N.—The Brimsdown Nurseries.

Adjoining the Brimsdown Station, G.E.R.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on WEDNESDAY, November 8, at 11 o'clock, by order of Mr. J. Maller, without reserve, a quantity of well-grown and useful NURSERY STOCK, consisting of Privet, Laurels, 200 Specimen Aucubas, 2 to 4 ft. through; Irish Yews, Virginian Creepers, Clematis flammula and Jackmannii in pots, Ampelopsis Veitchii, Standard, Half-Standard, and Dwarf Roses, good plants to name. Also a large assortment of STOVE and GREENHOUSE PLANTS, Solanums, Genistas, Ferns in variety, Crotons, Winter-blooming Heaths, including Hymalids, gracilis, and others; Bouvardias, Gardenias, and other Flowering Plants; 1000 Intermediate Stocks, red and white, the best market strain, in 60-pots; Chrysanthemums, the best varieties to name, &c.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Uxbridge.—Expiration of Lease.

Important TWO DAYS' CLEARANCE SALE of about 4 Acres of beautifully grown NURSERY STOCK, by order of Mr. Charles Turner, in consequence of the Lease of this portion of the Land being about to expire.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Uxbridge, close to the Uxbridge Railway Station, on MONDAY and TUESDAY, November 13 and 14, at half-past 12 o'clock precisely each day, without reserve, 4 acres of splendidly grown and well-rooted NURSERY STOCK, in capital condition, for removal, comprising 3000 Green and Variegated Aucubas, 1 to 3½ feet; 100 Irish Yews, 3 to 5 feet; 100 Variegated Hollies, 8000 Green Hollies, 1 to 2 feet; 200 English Yews, 3 to 6 feet; 350 Austrian Pines, 4 to 6 feet; 3500 Laurels, of sorts, 2 to 3 feet, consisting of Caucasica, rotundifolia, and latifolia; 500 Portugal Laurels, 2 to 4 feet; 600 Green and Variegated Box, 3 to 5 feet; 1100 Thuias and Cupressus, 4 to 7 feet; Mountain Ash, Poplars, and other Standard Trees; 5000 Limes, 5 to 14 feet, extra good and clean, particularly adapted for street and avenue planting; and other stock.

May be viewed any day prior to the Sale. Catalogues may be had on the premises, at the Royal Nurseries, Slough, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Lea Bridge Road Nurseries, Leyton, E.

Close to Hoe Street and Lea Bridge Stations, G. E. R. Great Unreserved Four Days' SALE of Superior NURSERY STOCK, the land having been sold for building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises as above, on TUESDAY, November 14, and THREE FOLLOWING DAYS, at 12 o'clock precisely each day, by order of Mr. John Fraser (who is transferring the business to South Woodford), a large quantity of unusually well-grown

NURSERY STOCK,

all carefully prepared for removal, including 2500 Hollies, 1½ to 2 feet, and 5 to 6 feet; 3000 Laurels of sorts; a considerable number of Specimen Border Shrubs, Azaleas, Lilacs, and other hardy flowering Shrubs; 1000 Birch, 1000 Mountain Ash, 5000 fine London Planes, 10 to 14 feet; 1000 Purple Beech; 2000 Limes, 10 to 12 feet; 4000 Variegated and other Yews; 1000 Clematis Jackmannii, and others; 1000 Ampelopsis Veitchii, 500 Passiflora, Constance Elliott; a quantity of fine Standard and Dwarf Roses; 10,000 Fruit Trees, comprising 1000 Standard and Pyramid Apples, 5000 Standard and Pyramid Pears, 2000 Plums and Cherries, 5000 Maiden and Dwarf-trained Peaches, Nectarines, Apricots, and Plums; 2000 Clove and other Carnations, in pots; strong fruiting and planting Canes of Vines; 1000 Cyclamen; 2000 Bouvardias, full of flower-buds; 3000 Genista fragrans, splendid plants; 1000 Solanums, full of berries; 500 Lapageria rosea, and other greenhouse Climbers; and other useful Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—Purchasers can arrange with Mr. Fraser to have their lots lifted and forwarded at the cost of labour incurred and material used.

TOTTENHAM, N.

ANNUAL SALE.

Adjoining the Tottenham Hale Station, Great Eastern Main Line.

IMPORTANT SALE OF NURSERY STOCK.

TUESDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, N., adjoining the Tottenham Hale Station, G.E.R., on TUESDAY NEXT, Nov. 7, at 11 o'clock precisely, in consequence of the large number of lots, by order of Mr. Thomas Ware, an enormous quantity of well-grown

NURSERY STOCK,

comprising—

25,000 NAMED CARNATIONS, PICOTEES, TREE CARNATIONS, &c.

Consisting of all the finest varieties, including Germania, the best yellow; Mrs. Reynolds Hole, salmon-apricot; Mrs. Frank Watts, the best white; Redbraes, purple-edged Picotee; Sir Beauchamp Seymour, orange-buff; Gloire de Nancy, large white clove; Lord Byron, brilliant scarlet; Alice Ayres, pure white, striped carmine; Princess Alice, rich bright salmon; Fireman, rich bright scarlet; and many other first-class varieties in the finest possible condition. Also

5000 NEW CARNATIONS,

Consisting of Florence Emly Thoday, new white; Danger, new scarlet, a grand market variety; Mrs. Reiffel, glowing apricot; Horace, a brilliant rich scarlet; and others.

10,000 HER MAJESTY PINKS, extra large clumps;

Thousands of Crimson and other Malmaison CARNATIONS;

20,000 HOLLYHOCKS, selected to colour;

Pyrethrums, Phlox, Peonies, all of the best varieties, both single and double, and all extra strong plants;

250,000 finest Berlin Crown LILY OF THE VALLEY,

25,000 CLEMATIS,

And other Climbers, fine strong stuff, including Jackmanni, Jackmanni superba, Countess of Lovelace, Star of India, Anderson, Henryi, Duchess of Edinburgh, Gipsy Queen, and other first-class varieties; also 2500 Ampelopsis Veitchii, 3 to 4 and 4 to 5 feet; 500 Ampelopsis Hederacea, 500 Ampelopsis hirsuta, 4 to 5 feet; Hoggi, 3 feet; Humifolia, 3 to 4 feet; and Veitchii purpurea, 3 to 4 feet; Escalonia Ingrami, 3 feet; 100 Bigoniaea, of sorts; 500 Hedera Maderiense variegata, 3 to 4 feet; 1000 Emerald Gem, 3000 Ivies in variety, including H. Donnellane, 3 to 4 feet; H. Taurica, 3 to 4 feet; H. Caven-dishii variegata, 3 feet; H. latifolia maculata, 5 feet; H. Chrysophylla, H. marginata rubra, 3 feet; H. marmorata minor, 3 to 4 feet; and many other varieties; many thousands of Akebia quinata, Cotonaster Simmondsii, strong, 2 feet; Plumbago of sorts; Cydonia japonica and Maulei, fine stuff, 2 feet; Jasminum nudiflorum, Jasminum nudiflorum aureum, 3 feet; Lonicera in great variety, brachypoda, 3 feet; Crataegus Lelandi, 2½ feet, well berried; Passiflora corulea and Constance Elliott, very strong stuff, 4 feet; Habrothamnus coccinea, 2½ to 3 feet; and elegans, 2½ to 3 feet; and many other popular varieties.

100,000 SPIRÆA COMPACTA MULTIFLORA, S. japonica, Dielytra spectabilis, Clumps and Crowns Lily of the Valley, Spiræa Astilboides, S. palmata, S. palmata alba, Solomon's Seal, Helleborus, Calla nana compacta, C. æthiopica, and many other first-class varieties;

100,000 SEAKALE, ASPARAGUS, and RHUBARB,

50,000 LILIES and NARCISSUS, extra fine home-grown; among these will be found extraordinary fine roots of Lilium Colchicum, L. Browni, L. Chalcedonicum, L. Humboldtii, the new Bloomerianum magnificum from Mexico, Lilium Harrisii, L. Martagon album, L. Pardalium, L. Dalmaticum, L. Washingtonianum, L. speciosum album, L. rubrum and L. roseum, very fine bulbs; L. giganteum, and numbers of other rare and beautiful varieties;

ROSES, ORNAMENTAL TREES and SHRUBS.

A grand lot of Maréchal Neils, in 48-pots, 4 to 5 feet; in 32's, 8 to 9 feet; in 24-size pots, 12 to 14 feet; Gloire de Dijon, 6 to 8 feet, in pots; do. from ground, 3 to 4 feet, White Bank-sian, Common China, W. A. Richardson, fine stuff, 10 feet; and many others; Maiden's Blush, Lanei, Standard and Dwarf Roses in variety, including all the popular kinds; 2000 Veronica Traversi Buxifolia, carnosula, Cotonaster, microphylla and Buxifolia, fine stuff, in pots; Cistus of sorts, 500 Olearia, Lombardy Poplars, fine stuff, 10 to 12 feet, well furnished; a grand lot of Aralia Sieboldii, 1000 Oval-leaved Privet, good stuff; American Blackberries, and many other useful varieties; THOUSANDS of HELLEBORUS and other choice Perennials, including Eulalias and other Ornamental Grasses; Ever-lasting Peas, Anemone japonica, several varieties; Sunflowers, Gaillardias, Poppies, Centaureas, Doronicums, Lychnis viscaria splendens plena, Campanulas, Rudbeckias, Yuccas, a grand COLLECTION of IRIS, fine strong clumps, including the best forcing varieties; Pumila of sorts, Olbiensis of sorts, Siberica of sorts, Florentina, the sweet-scented variety; Germanica, in great variety; Kempferi, and many others; Delphiniums, and hundreds of other important families too numerous to mention.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, Land and Estate Agents and Valuers, 67 and 68, Cheapside, E.C.

Tuesday, November 14.

SPECIAL SALE OF HARDY PLANTS and BULBS, including 50,000 Chinodoxas, Galanthus, and others; thousands of choice Lilies, including Henryi, and other first-class varieties; 1000 Spiræa japonica multiflora and Sc. astilboides; a grand collection of Iris, including Her Majesty (new), Princess Alice (new), and numbers of Germanica, Siberica, and other species; Carnations and Picotees, including the best new varieties, and the finest of the older kinds; thousands of Berlin crowns, and clumps of Lily of the Valley, Narcissus, and other Bulbs.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 14, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Clapham Park, S.W.

CLEARANCE SALE of well-grown STOVE and GREENHOUSE PLANTS and FERNS, also SIX PIGS, by order of Sir George Lampton, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Oakfield, Paynders Road, Clapham Park, S.W., a few minutes' walk from Clapham Road Station, on THURSDAY, November 16, at 1 o'clock, without reserve, the whole of the well-grown STOVE and GREENHOUSE PLANTS, including Lapagerias, Aspidistras, Stephanotis, Begonias, Eucharis, PALMS, in variety; AZALEAS and CAMELLIAS, 230 MAIDENHAIR FERNS, including several fine plants in large pots; 120 CHRYSANTHEMUMS, specimen ORANGE TREE, 10 feet, and LEMON TREE, 13 feet; a few ORCHIDS, capital SOW IN PROFIT and FIVE YOUNG PIGS.

May be viewed the day prior and morning of Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The excellent DETACHED RESIDENCE, standing in its own extensive grounds is FOR SALE, by private treaty. Particulars may be obtained of the Auctioneers.

Bagshot.

HIGHLY IMPORTANT UNRESERVED SALE of beautifully-grown and well-rooted NURSERY STOCK, which has been carefully prepared for removal, and specially selected for this Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, within ten minutes' walk of the Bagshot Station, on TUESDAY, November 21, 1893, and TWO FOLLOWING DAYS, at 12 o'clock precisely each day, without reserve, several acres of NURSERY STOCK, grown to the greatest perfection, and exceedingly well rooted, comprising a variety of Conifers, splendid specimens, particularly adapted for effective planting; very fine Specimen Gold and Silver Variegated Hollies, 4 to 6 feet; 1000 Green Hollies, 3 to 5 feet; Aucubas, Laurels, very fine English Yews, 2½ to 3 feet, and 5 to 7 feet; Irish Yews, 3 to 4 feet; 2000 named Rhododendrons, 2 to 2½ feet, bushy plants of the best and newest kinds; Ponticum Rhododendrons in quantity, finely-rooted and bushy, and will move well; 1000 Spruce Fir, 2½ to 4 feet; and a quantity of larger specimens, 4 to 8 feet, specially adapted for Christmas Trees; 2000 Standard Ornamental Trees, 8 to 12 feet, including Purple Beech, 10 to 12 feet; 500 Limes, 10 to 12 feet; 500 Horse Chestnuts, 6 to 8 feet; 500 Scarlet Oaks, 6 to 8 feet; 1000 Black Italian Poplars, 8 to 12 feet. Thousands of Flowering Shrubs, large quantities of small Conifers for potting and boxing, and other Stock.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Bagshot Station, being situate on the property, facilities are presented for the conveyance of purchases, and Messrs. John Waterer & Sons, Limited, will undertake to lift and despatch any goods bought at the Sale, simply charging for time and labour occupied. Purchasers can remove their lots at any time up to December 31, 1893.

Stevenage, Herts.

About five minutes walk from the Railway Station. UNRESERVED SALE of the well-grown collection of ESTABLISHED ORCHIDS, by order of J. Bailey Denton, Esq., who is giving up their cultivation in consequence of ill-health.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the premises, Orchard Court, Stevenage, on WEDNESDAY, November 16, at 1 o'clock, the whole of the well-grown ESTABLISHED ORCHIDS, comprising Odontoglossum Alexandreae, good plants, many of them unflowered, Cattleyas and Cypripediums, a fine variety of Cattleya Lawrenceana, with twenty-two Bulbs, Odontoglossums, Oncidiums, Dendrobiums, Epidendrum Godseffianum, splendid plant; Lælia grandis tenebrosa, elegans, anceps, alba, and others. Cymbidium Lowianum, fine variety, and many other Orchids.

May be viewed two days prior to the sale. Catalogues may be had of the Head Gardener on the premises, and of the Auctioneers and Valuers, 67 & 68, Cheapside, London, E.C.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.

5000 LOTS SOLD WEEKLY.

MESSRS. PROTHEROE & MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS and other BULBS from Holland; also ROMAN HYACINTHS, LILUM CANDIDUM and other bulbs for early forcing, lotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

N.B.—There will be no Sales of Bulbs or Plants on Thursday next in the Sale Room, in consequence of the Lord Mayor's Show.

Cliffe, near Rochester.
SECOND PORTION OF Mr. Horne's Immense STOCK.—
IMPORTANT TO FRUIT GROWERS, MARKET GARDENERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions to hold a **CLEARANCE SALE** by AUCTION, of 50,000 FRUIT TREES, on the premises, Perry Hill, Cliffe, near Rochester, on MONDAY, November 20, at half-past 11 o'clock.

Friday, November 10.

GREAT SALE of ORCHIDS.

The New *DENDROBIUM IMPERATRIX*, Kränzlin.
The New *DENDROBIUM VARATRIPODIUM*, Lindley.
The New *ONCIDIUM SANDERIANUM*, Rolfe.
The New *BULBOPHYLLUM ERICSONII*, Kränzlin.
The New *MESOSPINIDIUM GRANDIFLORUM*.

MESSRS. PROTHEROE AND MORRIS will **SELL** by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 10, at half-past 12 o'clock, by order of F. Sander & Co., magnificent importations of the new and remarkable

DENDROBIUM IMPERATRIX,

a wonderfully free-flowering species, the spikes being furnished from beginning to end with a wealth of lovely blooms. Sepals light rose, lip pure white, with large petals of a purple tint, and striking appearance, like lawn-tennis rackets with long handles, standing erect.

DENDROBIUM VERATRIFOLIUM, Lindley, now introduced for the first time. Flowers large, and pure white.

ONCIDIUM SANDERIANUM, Rolfe,

a grand new discovery, allied to the macrantha section. Petals rich brownish-red with golden margins; sepals self-coloured; flowers 4 inches in diameter, and borne in profusion. The finest *Oncidium* discovered of late years.

PERISTERIA ASPERSA, Rolfe,

and varieties aurantiaca, purpurea, atro sanguinea, &c. A magnificent and free-flowering species, abounding in novel and beautiful shades of colour.

BULBOPHYLLUM ERICSONII, Kränzlin,

an entirely new and splendid species, and the finest of the genus. Dr. Kränzlin says, *Gardeners' Chronicle*, October 28, 1893:—"Imagine a group of nine to twelve flowers, of a large chimeroid *Masdevallia*, surmounting a slender flower-stalk, and you will get an idea of this extraordinary new *Bulbophyllum*."

MESOSPINIDIUM GRANDIFLORUM,

a splendid new variety, the most charming of cool-house Orchids, brightest in colour, and boldest in form of the entire section.

ONCIDIUM HASTIFERUM,

the brilliantly-coloured, large-flowered, short-spiked variety of *O. macranthum*.

ONCIDIUM AUROSUM SPLENDENS

Lovely golden-yellow and red-barred blossoms, borne in great abundance. This might well be called the majus form of this splendid *Oncid*.

ODONTOGLOSSUM or ONCIDIUM SP.

A new and colossal-bulbed species.

DENDROBIUM PHALÆNOPSIS

SCHRODERIANUM.

THE KING OF THE GENUS.

Universally acknowledged to be the most superb *Orchid* yet introduced. Its range of colour is prodigious, from pure white to deepest crimson.

A fine importation of *ODONTOGLOSSUM HYSTRIX*.

NEW ONCIDIUMS, NEW ODONTOGLOSSUMS, NEW LYCAESTES.

ANGULO CLOWESII ALBA.

The rare and beautiful pure white *CRADLE ORCHID*, &c.
Also ten lots of a *NEW LELIA* in FLOWER (another property), and a pair of *WHITE JACKDAWS*, from South Tyrol.

On view morning of Sale, and Catalogues had.

Monday Next.

PLANTS FROM BELGIUM, ROSES, &c.
100 *AZALEA INDICA*, 100 *A. MOLLI*, 50 hardy Ghent *AZALEAS*, 50 *CAMELLIAS*, 50 *RHODODENDRONS* received direct from Belgium, 100 *STANDARD ROSES*, fine clean straight stems, good bushy heads to name; 200 *CYCLAMEN PERSICUM* in thumbs, 160 *LILIAM ALBUM KRETZERII*, English grown roots, 40 lots of well-grown *Greenhouse Plants* and *Ferns*, and 100 lots of hardy *Bulbs* and *Plants*.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., on Monday next, November 6, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Wednesday Next.

250 *AZALEA INDICA*, named sorts; 350 *A. MOLLI*, 36 *RHODODENDRONS*, 36 *DRACENAS*, 24 *ASPIDISTRAS*, direct from Belgium; 150 lots of specially fine English-grown *LILIES*; 1000 very fine English-grown bulbs of *NARCISSUS*, *Emperor and Empress*; a quantity of *PALM SEEDS*, 150 *LATANIA BORBONICA*, *CORYPHA AUSTRALIS*, *DRACENA AUSTRALIS*, 15,000 *GALANTHUS ELWESII*, first-size bulbs, in splendid condition; 2000 *LILIAM CANDIDUM*, 3000 *CHIONODOXA LUCILLE*, *STOVE* and *GREENHOUSE PLANTS*, &c.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 8, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Saturday Next.

SPECIAL SALE OF DUTCH BULBS.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY NEXT, an importation of choice *DUTCH BULBS*, specially lotted for all buyers.

On view morning of Sale, and Catalogues had.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will **SELL** by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice *HYACINTHS*, *TULIPS*, *CROCUS*, *NARCISSUS*, and other *BULBS*, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Wednesday Next.

300 Choice named *Standard* and *Dwarf ROSES*, Collection of *BORDER PLANTS*, 50,000 Best Berlin *LILY OF THE VALLEY* Crowns, 1000 Clumps of ditto, 3000 *SPIREAS*, 3000 *LILIAM HARRISII*, *AZALEAS* from Ghent, *CHRISTMAS ROSES*, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 8.

On view morning of Sale, and Catalogues had.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold SALES at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—

EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.

EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other Bulbs.

EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THURSDAY, at 11.30 A.M.—*Azaleas*, *Camellias*, *Palms*, *Dracenas*, and other Plants from Belgium; *Roses*, *General Nursery Stock*, *Carnations*, *Dutch* and *French Bulbs*.

EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THIRD THURSDAY, at 12 o'clock.—Established and Imported Orchids.

All Catalogues post free.

Messrs. JAMES AND BAXTER conduct Sales and Valuations of Nursery Stock, Live and Dead Farming Stock, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

Great Doods, Reigate, Surrey.

To ROSE GROWERS, HORTICULTURISTS, and Others.

MESSRS. JOHN LEES AND BURCHELL are instructed by Mrs. Waterlow to **SELL** by AUCTION, on the Premises, on THURSDAY, November 16, at 11 o'clock precisely, the important Stock of about 3000 *EXHIBITION ROSE TREES*, established by the late A. J. Waterlow, Esq., for many years one of the most successful exhibitors of *Roses* at the Crystal Palace and other Shows. Also *STOVE* and *GREENHOUSE PLANTS*, including 20 *Camellias*, 24 *Azaleas*, 200 *Specimen Maidenhair*, *Farleyense*, and other *Ferns*, *Palms*, *Cytisus*, *Coronillas*, *Sempervivums*, *Variegated Hydrangeas*, *Gloxinias*, *Pancratiums*, *Dracenas*, *Dendrobiums*, *Coleus*, *Calanthes*, *Cypripediums*, *Chamaejasme*, &c.; 500 *Strawberry Plants*, very choice sorts; 2 fine *Orange Trees*, 24 *Pot Vines*, *Fruiting Canes*, five dozen *Fruiting* and *Succession Pines*, *Box*, *Aucuba*, *Flowering* and other *Shrubs*, *Ornamental Trees*, &c.

May be viewed the day preceding the Sale. Catalogues may be obtained of Mr. J. BROWN, Head Gardener, Great Doods, Reigate; and of Messrs. JOHN LEES AND BURCHELL, Auctioneers and Land Agents, 17, Wool Exchange, Coleman Street, E.C., and Reigate, Surrey.

HIGHLY IMPORTANT NURSERY SALE,

by AUCTION, at BELLBRAE NURSERIES, CUPAR, by Mr. WILLIAM WATT, on MONDAY and TUESDAY, November 6 and 7 next, owing to the natural Termination of his Leases, and the REMOVAL of his NURSERY BUSINESS to MIDDLEFIELD, comprising One of the Finest and Largest Selections of Forest Trees, Ornamental and Avenue Trees, Shrubs, Fruit Trees, *Roses*, &c., in great variety—all healthy, well fibred, and in excellent condition for removal to any climate, having been grown in exposed situations.

Sale to Commence each Day at 11 A.M. Catalogues now ready, and any information desired will be given on application to Mr. WATT, or the Auctioneers—

Cupar, October 17, 1893. Messrs. LYON AND TURNBULL.

Preliminary Announcement.

To NURSEYMEN, FLORISTS, and OTHERS, in the matter of a Deed of Assignment.

Re REID AND BORNEMANN.

THE TRUSTEE begs to notify that he will shortly OFFER for SALE by TENDER the long LEASEHOLD PREMISES known as The Nurseries, Trewsbury Road, Sydenham, S.E., occupied by the well-known firm of Messrs. Reid & Bornemann, and comprising about 4 acres of Ground, with five Glasshouses, well-built Office, and appurtenances. Also of the valuable STOCK of CHOICE PLANTS and GENERAL NURSERY STOCK.

Printed Particulars and Forms of Tender may be obtained of Messrs. PIGGOTT AND SON, Chartered Accountants, 3, 4, and 5, Queen Street, Cheapside, E.C.; or of Messrs. LANGHAMS, Solicitors, 10, Bartlett's Buildings, Holborn Circus, E.C.

TO SEEDSMEN.—To be DISPOSED OF, in consequence of the death of the proprietor, an old-established FARM and GARDEN SEED BUSINESS, with a wide connection in a good Market Town in the Midlands, and on Two Railways. This is a rare chance for a desirable purchaser that does not often occur.—Apply to SEEDSMAN, Messrs. Hurst & Son, 152, Houndsditch, London, E.

FRUIT GARDEN, large extent of Glass, Hot-water Pipes all through. Vines in full bearing. Price only £1,600, including all necessary tools, &c.

Full particulars from Messrs. CONSTABLE AND CO., 55 and 56, Chancery Lane, London, W.C.

EXHIBITIONS.

KINGSTON AND SURBITON

CHRYSANTHEMUM SOCIETY.

President—G. C. SHERRARD, Esq., J.P.

The SEVENTEENTH ANNUAL GRAND SHOW of CHRYSANTHEMUMS, FRUIT, VEGETABLES, &c., will be held in the DRILL HALL, KINGSTON-ON-THAMES, on TUESDAY and WEDNESDAY, November 7 and 8, 1893, when the Final Contest between the three Successful Competitors for the Sixth Champion Challenge Vase, will take place; and the Seventh Champion Challenge Vase, value 25 Guineas, will be offered, open to all subscribers of 21s. Also a Silver Cup, value 5 Guineas, "Given by Major Collis Browne," in addition to Money Prize, for 24 Incurred Blooms, distinct. Over £160 offered in Prizes.

Schedules, and all information, may be obtained from the Hon. Sec., Mr. GEO. WOODGATE, Warren House Gardens, Kingston-on-Thames. Entries close November 3.

TWICKENHAM HORTICULTURAL

SOCIETY.

The ANNUAL CHRYSANTHEMUM and AUTUMN SHOW of FRUIT and FLOWERS will be held at the TOWN HALL, TWICKENHAM, on TUESDAY and WEDNESDAY, November 14 and 15. Entries close Friday, November 10. For further particulars, apply to—

Mr. JAMES J. G. PUGH, Hon. Sec.

2, Heath Road, Twickenham.

FARNHAM CHRYSANTHEMUM SOCIETY

will hold a SHOW of FRUIT and FLOWERS at the TOWN HALL, FARNHAM, on November 14 and 15. Over £36 worth of Prizes will be given. For schedules, entry forms, &c., apply to—

The Chestnuts, Farnham. Mr. PERCY WILKINSON.

GREAT YARMOUTH CHRYSANTHEMUM SOCIETY.

The SIXTH ANNUAL SHOW of CHRYSANTHEMUMS and other Autumnal FLOWERS and FRUIT, will take place in the TOWN HALL, GREAT YARMOUTH, on TUESDAY and WEDNESDAY, November 14 and 15, 1893.

SILVER CUP, value Five Guineas, presented by Members of the Corporation for CUT BLOOMS, and PRIZES to the amount of £70.

C. W. HORNE, Hon. Sec.,

Royal Naval Hospital, Great Yarmouth.

SOUTH SHIELDS AND NORTHERN COUNTIES CHRYSANTHEMUM SOCIETY.

This Exhibition will be held on WEDNESDAY and THURSDAY, November 15 and 16, in the ROYAL ASSEMBLY HALL, SOUTH SHIELDS.

The Society offer £150 in Prize Money, including £12 for 24 Incurred Blooms, and the same for 24 Japanese. Schedules now ready. Apply to—

BERNARD COWAN, F.R.H.S., Hon. Secretary.

Harton, South Shields.

YORK CHRYSANTHEMUM SHOW.

The FOURTEENTH ANNUAL SHOW, in the FINE ART EXHIBITION BUILDING, will be held on November 15, 16, and 17, 1893.

Challenge Prize, value £20, added to First Prize, £10, for 36 Cut Blooms. Liberal Prizes for Plants, Cut Flowers, Fruits, and Vegetables.

Schedules, &c., to be had from—

13, Feasegate, York. J. LAZENBY, Secretary.

SCOTTISH HORTICULTURAL ASSOCIATION.

GRAND CHRYSANTHEMUM SHOW, to be held in Waverley Market, November 16, 17, and 18.

NEARLY FIVE HUNDRED POUNDS IN PRIZES.

Schedules and all information from the Secretary—

17, South Frederick St., Edinburgh. ROBERT LAIRD.

CUMBERLAND CHRYSANTHEMUM SOCIETY.

THIRD ANNUAL SHOW at WHITEHAVEN, FRIDAY, November 17, 1893.

SPECIAL OPEN CLASS for 24 BLOOMS (Japanese).

Prizes, £3, £2, and £1.

For Schedules, &c., apply to W. H. BEWLAY, Hon. Secretary, Freemason's Hall, Whitehaven.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

GRAND ANNUAL SHOW, CORN EXCHANGE, SHEFFIELD, FRIDAY and SATURDAY, November 17 and 18, 1893.

£200 IN PRIZES.

Schedules free on application to the Secretary—

177, Cemetery Road, Sheffield. WM. HOUSLEY.

Corn Exchange, Newbury.

CHRYSANTHEMUM SHOW,

WEDNESDAY, NOVEMBER 22.

Last Day for Entries, November 13. Schedules and all particulars to be obtained of—

Sept. 11, 1893. H. S. HANINGTON, Hon. Sec.

READING CHRYSANTHEMUM SOCIETY.

TENTH ANNUAL SHOW.

WEDNESDAY, November 15, 1893. Entries close November 11, 1893.

W. M. L. WALKER, Secretary,

Dunollie, Bulmershe Road, Reading.

The Best Winter-blooming Carnation.

MISS JOULIFFE IMPROVED.—Fine Stocky plants, per dozen, 24s.; 2nd size, 12s.

"LOADSTONE" and HELEN JULIET, School of Gardening, Hemel Hempstead, Herts.

FOR SALE, cheap, one No. 2 Patent, 9 ft. 6 in. HORIZONTAL BOILER (refers to the Thames Bank Iron Co.), with Fittings complete. Brand new last December, never used and quite perfect.

Full particulars given, and others requested, to ENOCH WHITE AND SONS, Nurserymen, Bournemouth.

Fifty Nurseries, Market Gardens, Florist and Seed
BUSINESSES TO BE DISPOSED OF.

MESSES. PROTHEROE AND MORRIS'
HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

FOR ORCHIDS AND GARDENERS
to Grow Them, apply to **SANDER'S**, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

FERN! FERN!!—Trade.—Great Annual
Sale. Surplus Stock. 200,000 Stove and Greenhouse in 2½-inch pots, 11s. per 100, 200 for 20s.; 10 best selling sorts in 5-inch pots, 5s. 6d. per dozen; strong seedling, 4s. 6d. per 100. Large A. cuneatum, very fine tops, value in fronds, 6s. and 8s. per dozen. Cyperus, Aralias, Greivilleas, Solanums, 6s. per doz.; Palms, Ficus, and Dracenas, 1s. each. P. tremula, and A. cuneatum for making large plants quickly, 16s. and 20s. per 100. Packed free and put on rail for cash with order.—J. SMITH, London Fern Nursery, Loughborough Junction, London, S.W.

KENTIAS (Cheap).—Kentia Belmoreana and K. Fosteriana, splendid stuff, from stores. 12 inches high, 3s. 6d. per dozen, 24s. per 100; 6 to 9 inches, 21s. per 100. Package free for cash with order.
J. PREWITT, Swiss Nursery, Hammersmith, W.

CARNATIONS.—Strong rooted layers, true to name.—Germania, Mrs. Welsh, Danger, Mrs. R. Hole, Raby Castle, Mrs. F. Watts, Sir B. Seymour, 4d. each; Mrs. Ribell, Countess de Paris, Crimson Malmalson, Blush do., 6d. each; Pink Her Majesty, 2s. per dozen.
SYDNEY BRUCE, Frettenham, Norwich.

ALL GOODS DELIVERED FREE
on board, London, Antwerp, Rotterdam. £ s. d.
LILIU HARRISH, 5—7 in. circ., per 1000 bulbs. 6 5 0
" " 7—9 in. " " " 11 10 0
" " 9—11 in. " " " 22 10 0
" " 11—13 in. " " " 8 7 6
" " 13—15 in. " " " 11 10 0
TUBEROSES, Pearl, select 4—6½ in. " " 1 10 0
" " seconds, 2—4 in. " " 1 2 6
" Prices for GLADIOLUS, &c., on application.
F. W. O. SCHMITZ and CO., Jersey City, N.J., U.S.A.

Palms! Palms!! Palms!!

J. W. SILVER, F.R.H.S., begs to call attention to his immense Stock of the above, in all sizes and best leading kinds, and offers, in large and well established clean and healthy plants, Phoenix rupicola, Kentias Belmoreana, Fosteriana, and australis; Cocos Weddelliana, Geonoma gracilis, Corypha australis, Latania borbonica, Pthosperma Cunninghamii, Areca Baureii, and Seaforthia elegans, in 3-inch pots, 4s. per dozen; in 5-inch pots, from 12s. to 21s. per dozen. Catalogues and Packing free. Most extraordinary value.—J. W. SILVER, F.R.H.S., Nurseryman, Seed, Bulb, and Plant Merchant, and Horticultural Sundriesman, Streatham and Norbury Nurseries, S.W.

LILAC CHARLES X. and **Virginalis**, grown in pots, splendid plants, £1 to £3 per 100, finely grown, and covered with buds.

TREE PEONY.—20,000 plants (in all the best sorts), 12 sorts, our choice, true to name, well-grown grafts, from 1 yr., 16s.; 2 yr., £1 to £1 4s.; 3 or 4 yr., £1 9s. to £2.

HERBACEOUS PEONY.—Per 1000 (250 best sort—), 12 sorts, our choice, true to name, 8s., 10s., 20s. and more according to the novelty of the sorts; 100 in 50 or 100 sorts our choice, £2 8s. to £4, according to the novelty; 1000 in 100 sorts, our choice, £18; 1000 without name, mixed, £15; 1000 White sorts, £30; 1000 Red or Pink, or Mixed colours, £ 8 to £20.

100,000 **TEA-ROSES** (Dwarf), grown in pots, strong plants, £2 to £2 8s. per 100.

100,000 **TEA-ROSES** (Dwarf), grown Outdoors. Grafted on Seedling Briars, strong plants, £2 to £2 8s. per 100.

CARNATION MALMAISON, White, Red, and Pink, good plants, 30s. to 35s. per 100; Perpetuals, nice plants, good sorts, grown in pots, well budded, £2 to £3 (and £4 if plants are very strong or a novelty) per 100.

These lots comprise the largest and finest plants ever offered. Samples of all the plants will be sent on demand.

LÉVÊQUE ET FILS, Nurserymen, 69, Rue du Liégar, Ivry sur-Seine, near Paris.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Everyone can readily grow Mushrooms, and by using this Spawn will ensure success. All growers speak in high praise of the quality. Numerous Testimonials. None genuine unless in sealed packages, and printed cultural directions enclosed with our signature attached.

Price, 6s. per bushel, 1s. extra for package; or, 1s. per cake, free per Parcel Post.

WM. CUTBUSH & SON, Nurserymen and Seed Merchants, Highgate Nurseries, London, N., and Barnet, Herts.

NOW IS THE TIME TO PLANT.

Send for our **NEW DESCRIPTIVE AND PRICED CATALOGUE** of FRUIT TREES, ROSES, CONIFERS, SHRUBS, FOREST TREES, CLIMBERS, HERBACEOUS PLANTS, &c.
A large Stock grown.

LANDSCAPE GARDENING

A leading feature. Plans, Specifications, and Estimates prepared.

GEO. JACKMAN & SON,
WOKING NURSERY, WOKING, SURREY.
ESTABLISHED 1810. AREA 150 ACRES.

EUCHARIS, fourteen very large pots of the above for sale. Strong and healthy.—Apply E. M., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

CHOICE CHRYSANTHEMUM BLOSSOMS by the Box, or twelve Cuttings of same, free for 1s., prepaid.—GARDENER, Bryn-Llewelyn, Festiniog, Merioneth.

GRAPE VINES, strong planting canes, Black Hamburg, Foster's Seedling, or Lady Downe's, well rooted and ripened, 6 to 8 feet long, 18s. per dozen, or £8 10s. per 100.—BAXTER, Willowside, Tooting.

TO NOBLEMEN'S GARDENERS, or where "Spring Bedding" is carried out on a large scale.—We have a grand lot of Plants of every kind, specially prepared and transplanted; 100 assorted plants, as sample, 10s.; or, 500 for £2 2s. 6d. Carriage paid. Price Lists free.
"LOADSTONE" and **HELEN JULLIET** (the Lady Florists), School of Gardening, Hemel Hempstead, Herts.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for LIST, free.
P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

CORDON PEARS on Quince, well spurred, 5 to 6 feet. GRAPE VINES, FIGS, and ROSES of usual fine quality. Wholesale and retail.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

LARGE PALMS.—Two **LATANIA BORONICA** in tubs, with sixteen to eighteen fronds, 12 to 14 feet across, and about 14 feet high, including tub; One **PHOENIX DACTYLIFERA**, eighteen to twenty fronds, about 15 feet high, including tub; Two **KENTIAS**, in 15-inch pots, about 4½ feet high, and 5½ feet across. For prices apply to **GARAWAY AND CO.**, Durdham Down Nurseries, Clifton, Bristol.

LONDON PLANES.—Large Stock, very fine trees, good stems, splendid roots, all sizes, from 8 to 20 feet high, and all other leading kinds of Standard Trees suitable for roadside or park planting.

IRISH IVIES in pots, 3 to 12 feet.
SHRUBS, TREES, ROSES, FRUIT TREES, OLIMBERS, &c., in endless variety. Specially low prices for quantities. Descriptive Priced LISTS free, also of BULBS, SEEDS, PLANTS, TOOLS, and REQUISITES.
W. FROMOW AND SONS, Sutton Court Nurseries, Chiswick. Branch Nurseries: Hounslow and Acton Green. Established 1829.

WELLS' CHRYSANTHEMUMS

Gained Highest Honours of any English Firm in 1892. Send for New Alphabetical Catalogue, Now Ready, post-free from W. WELLS, Earlswood Nurseries, Redhill, Surrey.

BARR'S WINTER & SPRING FLOWERS.

On application, the following CATALOGUES sent free:—Catalogue of Bulbs, Winter, Spring, and Summer-Flowering.
" " Daffodils for Pots, Beds, Borders, and Naturalisation.
" " English Amateur Tulips of absorbing interest.
" " Hardy Herbaceous Perennials—Beds, Borders, Naturalisation, Alpine Mounds, and Rockwork.
Collections of BULBS, 12s. 6d., 21s., 42s., and 63s.
" " DAFFODILS, 5s. 6d., 7s. 6d., 10s. 6d., 21s., to 105s.
BARR AND SON, King Street, Covent Garden, London.

Old-Fashioned and Garden Roses.

GEO. COOLING AND SONS' New ROSE
CATALOGUE contains a full list of Old-Fashioned and Decorative Garden Roses, and a beautiful Coloured Plate of the Copper Austrian and other Briars. It will be forwarded post-free on application. A Silver Medal was awarded to G. C. & Sons for their collection of Old-Fashioned Roses at the Temple Show of the Royal Horticultural Society, and numerous prizes and certificates throughout the season.
The Nurseries, Bath.

PALMS, FERNS, &c.—FERNS in Variety.—

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P.S.—Persons who have applied for a List at any time during the year, need not write again, as I have names and addresses, and one shall be sent in due course.

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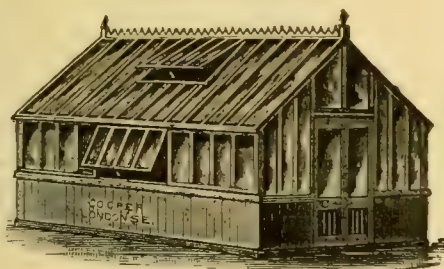
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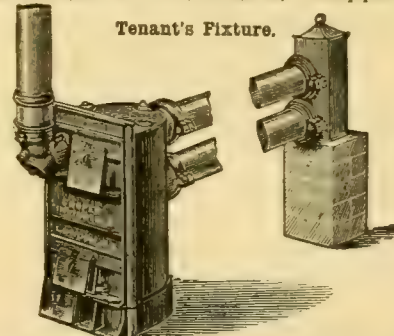
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 4, 1893.

FONTHILL ABBEY.

THE delightful seat of Sir Michael Shaw Stewart, Bart., named Fonthill Abbey, and situated in the parish of Fonthill Giffard, Tisbury, Wilts, must not be confounded with the instable and enormous house, the Fonthill Abbey of the accomplished and eccentric Mr. Beckford, author of the *History of the Caliph Vathek*. The former is a substantial and handsome mansion, in the Early English style, built by the Marquis of Westminster in 1858. The latter is a ruin, which is reached from the present house by a short walk through some shrubberies, where it will be found on a large and level plateau of smooth turf, which was once entirely occupied by the abbey, whose ruined tower now alone remains. The rest of this great windfall has been cleared away, and a beautiful lawn covers the site where the ugly ruin lay mouldering. I regret to show any disrespect for an abbey; but there is a wide difference between Mr. Beckford's Fonthill Abbey—which, in fact, was not an abbey—and Tintern Abbey, whose broken walls still stand, after hundreds of years of storms.

Fountains Abbey is another venerable ruin, beautiful as a glorious dream, and so durable, that even in its shattered condition, such protection as Lord Ripon gives it will preserve it for centuries to come. But Fountains Abbey was built by prayerful and patient monks, watching the work for years, and living in huts beneath the Yew trees, to be near it. Mr. Beckford, on the contrary, was a childish impatient man, and such men should not build. If they do, with their sudden orders, their relays of men, and lanterns at night, a downfall happens, and then you have, not a venerable ruin, but a mixture of rubbish, which in this case has been wisely cleared away, except the tower. This small sample of the most durable part of the building is situated about as far from Sir Michael Stewart's house as Hawarden Castle is from Mr. Gladstone's residence, which, by the way, has little of a castle about it but the name.

There is, perhaps, no folly more common than that of building houses which are unsuited to the wants, or too costly for the fortunes of their owners. Most persons probably could point out a dozen such houses, but the greatest folly of the present century in this direction was the building of Fonthill Abbey. Mr. Beckford seems to have inherited his weakness, his father, Alderman Beckford, having squandered an enormous sum of money in building Fonthill House, which his son allowed to become dilapidated, and which was afterwards replaced by the handsome residence of Mr. Alfred Morrison. The site of the so-called abbey was well chosen. It is on high ground, and surrounded

with thick groves of Beeches. The spot where the abbey stood is covered with smooth turf, and a wide approach road, also on delicious turf, passes down an avenue three quarters of a mile in length, and formed of noble trees, tall and dense, on either side. At the end of the avenue there is a lodge, where the gates open on the hard road leading to Tisbury.

At the present time nothing remains of the abbey but part of its tower, the more lofty portion having made its obeisance to the new owner, as Mr. Beckford facetiously remarked on hearing of its fall. As you stand on the grass-covered grave of Mr. Beckford's foundation, if he dug any, the higher ground on the north of the site, the woods of Beech and other timber, and the magnificent avenue together shut out the distant view. It is, however, a fine site for a house, and as the ornament of fine timber is there already, it may be called a ready-made site.

Mr. William Beckford, author of a successful book and of this unfortunate abbey, was born in 1761, and died at Bath, relieved of much of his enormous wealth, in 1844. He had a princely place near Cintra, and came to England, and down into Wilts, a much-travelled, highly cultivated man, famous, and fabulously wealthy. He began to build, and so impatient was he to get his house finished, that he employed relays of workmen, hurrying on with it day and night, Sundays included. After his impulsive fashion, he spared neither beer nor bribe, till the tower was up—a wooden tower, which was then taken down. The second tower was built of wood and cement, and this structure fell down. The third tower, formed of brick and stone, was built on the foundations of a summer-house, and the winds and the rain beat upon it a few years, when it came down as already mentioned. Other eccentricities followed. On one occasion a new walk in the woods was determined on, and the village was summoned, and worked all night, in order that Mr. Beckford might find his fancy finished in time for his morning ride. Sometimes he was charitable in great haste, and would distribute one hundred pairs of blankets to the poor, or he would requisition all the carts and wagons in the village to fetch a supply of coal. If the people saw him coming, when he rode beyond his grounds, they always expected something uncommon to follow, and sometimes it was a horse-whipping when he felt annoyed, and then a guinea to assuage the smarting. He would order dinner for twelve, with twelve servants to wait, when he and his daughter were the only persons to be fed. This daughter, the Duchess of Hamilton, lived here a recluse like himself. On one occasion an adventurous stranger entered the grounds and met the owner, whom he took for a gardener. Mr. Beckford invited him to dinner, and after a sumptuous repast the host vanished. Having waited a considerable time the guest ventured to make a noise, there were no bells in the house, and forthwith the butler appeared and most politely led him to the door. "Mr. Beckford," he said, "went to bed some time ago, and he bid me say, that as you found your way into his grounds you may now find your way out; and you had better avoid the dogs, which are let loose at night for our protection."

Mr. Beckford's most costly freak on the estate, except the house, was the wall round the park. Meeting the hounds one day within his sacred precincts, he was exceedingly indignant at the intrusion. Seven miles of wall were built to secure the privacy of his park and grounds for the future, and in several parts of the shrubberies of the present abbey its foundations are met with. The height of that which remains varies from 5 feet to 7 feet, which was held to be sufficient to exclude the world, and to secure for the Caliph of Fonthill such privacy as a spider enjoys in its hole. It is fortunate that landowners of this class are rare, since little good can come of a cultivated intellect and a heavy purse like Mr. Beckford's unless these endowments are under the direction of good sense and good nature.

Sir Michael Stewart's house stands on rather lower ground than the site of the abbey, but it

occupies a more prominent and still better position. The house is quite in harmony with its beautiful surroundings. It stands in a terraced garden facing the south, and immediately around is some exceedingly picturesque scenery with plenty of woods and shrubberies, and pheasants, which are seen sometimes on the lawn before the windows. There is a meeting of several strata of rocks just here, and the surface is much tumbled about, the upheaval which occasioned this unlevel surface having formed deep vales and corresponding hills, covered with wood. Beacon Hill, which is wooded to the top, and is seen from afar, is the highest point here, and beneath it is a gorge, which Mr. Macey, the gardener, pointed out with pride. This is known as the American Garden, and is filled with shrubs suitable to such a garden—Rhododendrons, Kalmias, and Azaleas. It is always a lovely spot, and in May and June, when the flowering shrubs are in blossom, it is superb. Considering the very picturesque surroundings of the house, it is felt perhaps that elaborate horticulture would be out of place; and the excellent gardening does not include extensive ranges of glass-houses, or culture of a very artificial character. *H. E.*

NEW OR NOTEWORTHY PLANTS.

KNIPHOFIA CITRINA, *Baker, n. sp.**

This new *Kniphofia* has just been introduced into cultivation by Herr Max Leichtlin from the mountains north of Grahamstown. It has the linear leaves and slender peduncle of *K. Macowani*, which comes from the same district, but the flower is very different, being shorter, pale yellow, and with the stamens as decidedly exerted as in the old *K. pumila* (*Bot. Mag.*, tab. 764). Its nearest ally is the *Zulu K. gracilis* of Harvey, which has not yet been brought into cultivation. It is hardy, and flowers in October.

Root-fibres very long. Leaves many to a stem, linear, moderately firm, green, $1\frac{1}{2}$ to 2 feet long, $\frac{3}{8}$ in. broad low down, tapering gradually to the point, triquetrous on the back, and acutely channelled down the face, slightly scabrous on the edge. Peduncle slender. Raceme dense, oblong, 2 to 3 inches long; pedicels very short; bracts scarious, white, oblong-lanceolate, $\frac{1}{2}$ to $\frac{1}{4}$ inch long. Perianth sub-cylindrical, pale yellow, 9 or 10 lines long, $\frac{1}{13}$ inch in diameter low down, $\frac{1}{2}$ inch at the throat; lobes small, ovate, with a faint green keel. Stamens much exerted, the longer three $\frac{1}{2}$ inch; anthers small, oblong, pale yellow. *J. G. Baker, Herbarium, Kew.*

ORCHID NOTES AND GLEANINGS.

POLYSTACHYA PUBESCENS.

THIS pretty and fragrant species, which was formerly known as *Epiphora pubescens*, is one of the most neat and easily grown of cool-house Orchids. Its erect racemes of flowers are rich yellow, with a few purple lines on the segments, and they last in perfection for several months. A plant of it is in bloom in the Orchid Nursery of Mr. H. A. Tracy, Amyand Park Road, Twickenham.

CATLEYA WARSCEWICZII.

An immense flower of a light-coloured form, reminding one of the earlier importations of this plant, comes from the Rev. J. P. Way, Warwick. There are now several distinct types of *C. Warscewiczii*, but this is one of the best of the light tinted forms we have seen; its expanded petals measure over 8 inches in width, and each is nearly 3 inches wide, the flowers being well formed. A

* *Kniphofia citrina*, *Baker, n. sp.*—Fibris radicalibus gracilibus elongatis; foliis pluribus linearibus viridibus bipetalibus dorsi triquetris facie acuta canaliculatis margine scabris; pedunculo gracili; racemis densis oblongis; pedicellis brevissimis; bracteis oblongo-lanceolatis; perianthio subcylindrico sulphureo 9–10 lin. longo, lobis parvis ovatis viridi; carinatis-staminibus longe exsertis.

similar form, but one in which one of the petals shows traces of the same yellow tint found in the labellum, comes from Mr. Mark Watts, gr. to G. D. Owen, Esq., Selwood, Rotherham.

AMERICAN PARKS AND GARDENS.

(Continued from p. 502.)

GERMANTOWN.—"One of the most interesting days I spent in America was in Germantown, where I visited Mr. Thomas Meehan, the Nestor among American tree lovers and planters. I was particularly glad to make Mr. Meehan's acquaintance, because fifty years ago he was a gardener at Kew, where he laid the foundation of that extensive knowledge which has enabled him to build up one of the most important nurseries in America. Here I found a larger number of American trees and shrubs than can be found in any other nursery in the world; and it is through Mr. Meehan's efforts, I am told, that American trees are now so much more largely cultivated in their native land than they were a quarter of a century ago. In this nursery may be found seedlings of American Oaks, Elms, Hickories, Dogwoods, and Maples, by tens of thousands; and here is the only place, I believe, where many of the rarer trees and shrubs can be had in large quantities. Here, too, I saw remarkable examples of many rare trees, such as the broad-leaved Maple of Oregon, the Cedrela from Northern China, the *Hovenia dulcis* of Japan, a curious tree, with thick fleshy fruit-stems, which are eaten by the Japanese. Mr. Meehan has done the people good service in securing several small parks, including the site of the famous Bartram Garden, which was the first botanical garden in the New World. During the fifteen years since he entered the Common Council of his adopted city, he has been instrumental in adding eighteen small parks to the park-system of Philadelphia.

"Germantown itself is a place which every foreigner interested in American trees should visit, as the people of this suburb of Philadelphia 100 years ago were especially interested in the introduction and cultivation of rare trees, and the first cultivated specimens of several American trees were originally planted here, and may still be seen. Among these is the oldest-planted specimen in America of the beautiful *Virgilia*, or yellow-wood of the Southern States, which stands in the grounds of the Germantown Cricket Club, a club, by the way, which has a more beautiful house and is provided with a better laid-out ground than any I have seen in England. The clubhouse, a large brick structure, was designed by one of your New York architects, Mr. McKim, who also made the plan for the architectural walls which surround the field as well as the grand-stand, which is the only structure of the kind I have seen which possesses any claim to artistic merit. In this cricket ground is the finest cultivated plant of the Cucumber tree (*Magnolia acuminata*) that I ever encountered. In Germantown, too, I saw a remarkable specimen of the Pecan Hickory, which was raised from seed brought from Arkansas by the English naturalist, Nuttall. In Vernon Park, the latest of the parks which Mr. Meehan has acquired for Philadelphia, is the first *Magnolia macrophylla* ever planted in America, and here, too, are remarkable specimens of the native "Papaw," (*Asimina*) more than forty years old, and with trunks $1\frac{1}{2}$ foot through. The roads of Germantown are shaded with beautiful rows of native trees, and behind them stretch the green lawns of innumerable villas.

FLUSHING.—"Another notable town is Flushing, L. I., which I visited for the purpose of inspecting the Kissena nurseries of Parsons & Co., because here were cultivated many of the plants which were introduced to cultivation by Mr. Thomas Hogg, Dr. Hall, and other American travellers in Japan. In this town, on a piece of ground which once formed part of the old Parson's Nursery, are three trees of exceptional value—

the largest plant of the Golden Larch of China which I have ever seen, a remarkably fine Purple Beech, and a Weeping Beech, with a greater spread of branches, and larger in every way, than I had ever seen before. These noble trees should be preserved, it seems to me, for future generations, for I do not think they can be duplicated anywhere in America. The streets of Flushing are better planted, perhaps, than those of any country town which I have visited here, and I particularly admired the rows of Pin Oaks, which have been largely used here, and with excellent effect. Speaking of street trees, I may say that on a hurried visit to Washington, I was impressed with the systematic planting of the street, in that capital. Taken all round, it is the best

Potato disease appeared in 1892 upon the station grounds on July 20. All Potato foliage was immediately sprayed with Bordeaux Mixture, excepting a few rows in each field that were left untreated for comparison. In all cases the treated foliage resisted the disease better than the others. However, the foliage of the Early Rose soon began to turn brown and dry up, although it was evident that they were not quite matured. Two other applications of the Mixture were made while the tops gave evidence of growth. The increase in the yield of large Potatoes, due to treatment, was estimated to average about one-fourth of the crop. The early varieties gave the least increase, and the late varieties the most.

A field of Late Beauty of Hebron, at Kingston,

marked; the yield was almost doubled by it, and the tubers were much larger and fairer than where no treatment was given.

Another field of Late Beauty of Hebron Potatoes was treated at West Kingston. The field was planted somewhat earlier than the one at Kingston, and the soil was not as moist, consequently the foliage was more nearly mature about the middle of July, when the blight appeared. The first application of the Bordeaux Mixture was made on July 21. The top growth was large and even, with scattering blossoms here and there upon them, although the height of the blossoming season had passed. Check rows were left on either side of the field, while the main central part was treated. On July 30 a second application was made; and on August 6, the third and last was afforded. The foliage of the check rows was at this time almost entirely dead, while that of the treated rows was still alive and growing. This condition remained, however, only for about ten days, after which the treated tops gradually became dry and brown. Test plots of these Potatoes were dug on September 27, from which it was determined that the average yield of tubers had been increased 217 per cent., or a little more than 48½ bushels per acre, by the treatment.

EXPERIMENTS WITH REMEDY FOR POTATO "SCAB."

The Bordeaux Mixture was applied upon seed-Potatoes at the time of planting. Four rows of Chas. Downing variety, each 50 feet long, were used in the experiment, two of which were, and two of which were not, treated. Potatoes were grown in the field the previous year, and stable-manure was the only fertiliser applied. The results were as follows:—

Treated.	Total.	Scabby.
Yield of large Potatoes ...	82 lb.	9 per cent.
Yield of small Potatoes ...	55 lb.	9 per cent.
Not treated.	Total.	Scabby.
Yield of large Potatoes ...	53 lb.	21 per cent.
Yield of small Potatoes ...	77 lb.	12 per cent.

The disease was not so prevalent in the field as in some seasons, even when the Potatoes were not treated; still, the results of treatment were more apparent at the time of harvesting than is indicated by the figures given, for in the untreated rows, those Potatoes that were attacked by the disease were generally much more disfigured by it, and thus rendered more unsaleable than those where treatment had been given. *J. J. Wallis, Harpenden.*

CIRRHOPE TALUM ORNATISSIMUM.

At last a *Cirrhopetalum* has been found which has been deemed worthy of a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, the award being made to the plant, the subject of our illustration, when it was exhibited by Sir Trevor Lawrence at the meeting on October 24. It is a beautiful and quaint species, its yellowish flowers being beautifully marked with purple, the upper segment decorated with a purple fringe and the two side ones having tassels of a similar colour. The lip is deep purple, and the whole flower is most singular in its structure and remarkable in its colouring. (See fig. 91.)

NOTES FROM CHISWICK.

ASTERS.—The fine collection of Asters is now almost out of flower, a few varieties remaining in bloom [before the recent frost], being chiefly forms of *A. lævis* and *A. novi-belgii*. Amongst the latest of the genus in bloom is *A. novæ-angliæ*, a very showy Aster, represented by several forms in which the flowers vary in colour, some deeper than in the species, others shades of rose.

Dahlias.—The chief plants in bloom a few days ago were the Dahlias. Amongst the Pompon varieties the finest were Ernest, light rose, margined with crimson; Dr. Ranch, bright orange-red, an effective colour; Mars, scarlet; Little Darkie, deep maroon; and White Aster. In one bed were several plants in full bloom of the single Cactus Dahlias.



FIG. 91.—CIRRHOPE TALUM ORNATISSIMUM.

planted city I have ever visited. Some fifty species of trees are used, and many of the avenues are remarkably beautiful, particularly one in which the Ginkgo tree is used. I have not time to speak of the botanical gardens there, or the improvements that I found going on under the care of W. R. Smith, Superintendent of the Botanical Gardens, who is another old Kew man." *New York Daily Tribune, Sept. 10, 1893.*

(To be continued.)

POTATO DISEASES.

THE fifth annual report of the Agricultural Experimental Station at Rhode Island, just issued, gives, in the Horticultural Division, results of experiments in the treatment of the Potato blight and Potato scab.

was treated with the Bordeaux Mixture. The growth of the tops was very vigorous, the soil being both fertile and moist. The first application was made July 16, the plants being then in blossom, and apparently free from disease. July 29, a second application was made, the foliage at the time being generally fresh and green. On August 9, the third and last application was made. At this time the untreated check-rows gave evidence of the presence of the blight, and the treated rows were slightly attacked in spots. The disease seemed to spread rapidly over the foliage that had not been treated, and in a few days from the above date the foliage in the check-rows was quite brown and dry, while the foliage in the treated rows remained generally green until about September 1. The effect of this treatment upon the crop of Potatoes was very

They may be useful to cut for the house, but are not altogether satisfactory in the garden. The true single kinds are preferable.

Fuchsia fulgens.—A bed of this species is worth a note. It was in bloom from early summer, and recently was still flowering well. The flowers are red, tubular, and in rich contrast to the abundant leafage. One might almost call this *Fuchsia* a foliage plant. It is thoroughly well worth growing largely in large gardens.

The Chiswick gardens have been of much interest during the past year. Really interesting plants not seen everywhere were grown. *Cassia corymbosa* was in perfection quite late in October; also *Plumbago capensis*, which flowered freely during the summer. *V.*

PLANT NOTES.

ACHILLEA, THE PEARL.

THIS is a beautiful variety of *Achillea ptarmica*, the flowers quite twice as large as those of the double form—pure white, each like a little rosette, and produced with freedom. It is one of the most useful hardy plants of the garden for cutting, and the white clusters could be used in a variety of ways, whilst there is no difficulty in growing the plant well. It will certainly take the place of the common double variety. *A. The Pearl* and *A. mongolica* are two plants that all who care for hardy things for cutting and effect should grow largely. The latter has single flowers, not quite so large as a half-penny, and pure white; it is not difficult to grow. *V.*

PTERIS LONGIFOLIA VAR. MARIESII.

This promising novelty is proving itself to be a very useful and desirable introduction in the Royal Exotic Nursery, King's Road, Chelsea. Its fronds are lighter in colour, more elegant in their arrangement, and are more gracefully arched than in the old species. So different indeed is this from the type, that some might regard it as a distinct species. It is sure to be considered a valuable addition to collections of Ferns, and it is more than probable that it will figure as a market Fern on a large scale.

ROSSLYN, STOKE NEWINGTON.

THE above, the residence of H. T. Pitt, Esq., possesses a garden of about three and a-half acres in extent, which is divided between the cultivation of flowers, fruits, and vegetables. In each department of the garden some interesting examples of good culture may be found. Two specially interesting features exist in the garden, one being a gigantic and aged tree of *Catalpa bignonioides*, which is supposed to be one of the first trees that was planted in this country, and which has been covered with flowers this year, as it is said to be every year. The other remarkable feature is a kind of dell beneath the shade of trees, in which a rustic garden with a fountain in the centre, was formed many years ago, and which was probably the summer retreat of former owners, who like the present one, took great interest in their garden. The charm of this quiet nook is, that the Ivies, Vincas, Ferns, and other things, originally planted, are allowed to grow as they please, and are only trained to make the paths passable to pedestrians. But as in many other suburban residences, gardening under glass receives the chief attention, and among fruits, the Pine-apple and Strawberry are remarkably well done; and in the various greenhouses and stoves we found a more than usually well-grown collection of Ferns, foliage plants, Azaleas, Camellias, and other plants. In one house, plants of the white, canary, and orange-coloured varieties of *Thunbergia alata* were very pretty; in another, the *Eucharis grandiflora* was in bloom; another had a good show of *Gloxinias*, while several were brightened by *Chrysanthemums* not grown like the usual exhibition-plant, but

so as to produce a large number of useful flowers, which prolong their flowering to the latest possible time.

The Orchids, which are Mr. Pitt's first favourites, occupy not only all the structures which were specially built for Orchid-culture, but many of the older houses, the soft-wooded plants and stove plants once grown in them being ousted thereby. This is not to be regretted, the London fogs having annually rendered their cultivation more and more unsatisfactory and difficult. The same difficulty does not extend to the Orchids, except so far as the loss of some of their flowers is concerned, the plants themselves being as healthy as those grown in the pure air of the country. It is believed here that it is of great assistance to Orchids grown near London if they are supplied previous to the arrival of winter with sound sweet materials about the roots, and any which are considered not to be fitted in that respect to last in good condition till the spring are repotted. This block of houses contains six divisions, and in the one next to that in which the *Cattleyas* are, *Phalaenopsis* are thriving admirably. There also is what is said to be the finest variety of *Oncidium Krameri* in the country, which cost six guineas, a good sum of money for this species. *Angraecum sesquipedale*, *Coelogyne pandurata*, and many others requiring heat are doing well in this house; as are also some plants of the pretty white *Utricularia montana*.

The next house showed a fine lot of *Dendrobium*, and one specimen of *D. nobile Cooksoni* was noted with thirteen new growths; *D. nobile nobiliss*, *D. n. album*, *D. Wardianum album*, *D. crassinode album*, are varieties that are well represented. In one division plants of *Laelia purpurata*, *L. tenebrosa*, and other *Laelias* and *Cattleyas* were noted, and in another some fine plants of *Cymbidium*, *Sobralia*, and *Coelogyne*, especially a large panful of the true *C. cristata hololeuca*. In the next division were some grand varieties in bloom of *Oncidium tigrinum*, *Maxillarias*, *Lycaste Skinneri*, *Odontoglossum grande*, *Pleione lagenaria*, &c. Here, also some masses of *Trichopilia suavis* do better than in most places, and are very large, stout, and healthy.

The range of cool-houses recently erected contains unflowered specimens of the best type of *Odontoglossum crispum*, these being the pick of the importations of this and the previous season, many of them being large masses with from four to eight leading growths. Great hopes are entertained of them, and if any should prove on flowering to be unsatisfactory, it will not be for lack of good culture. Indeed, everything about them, and the houses themselves are made scrupulously clean, as was manifest at the time of our visit. Here, as everywhere else where it is grown in quantity, *Cattleya labiata autumnalis* makes the most show, and proves itself an invaluable plant. In one house, we found the plants of this gorgeous species literally loaded with flowers, but still great variety was noted in the flowers themselves, and in the artistic and informal manner in which they were arranged; and although the show was all of *Cattleya labiata*, there was no lack of variety. Some of the flowers had very rich colours, the darker tints predominating, and several had flowers of a delicate blush-white, and with a slight crimson feather in the lip. Several of the light forms in the labellum much resembled *C. Warszewiczii*. Here also are some grand spikes of *Oncidium varicosum* var. *Rogersii*, and among the *Masdevallias* that curious little *M. simula*, with many of its quaintly-marked flowers.

In the *Cypripedium*-house was noted a good number of the pretty *C. exul*, varieties of *C. insigne*, well-flowered; a magnificent specimen of *C. Elliottianum*, *C. × orphanum superbum*, with two very large flowers on a spike; some fine forms of *C. × Ashburtoniae*, *C. × Dominicanum*, *C. Boxalli*, *C. calurum*, and others in bloom; while among the newer additions to the collection is the rather expensive, but decidedly pretty *C. × Niobe*, *Shorthills* var. In one of the other houses we found some splendidly-flowered specimens of the white and orange-flowered

Dendrobium formosum giganteum, *Phalaenopsis Schroderianum* and its ally *Dendrobium Phalaenopsis Statterianum*, with rich sprays of bloom, a fine form of *Odontoglossum Inseayi splendens*, and that now uncommon object, a large plant of *Odontoglossum Uro-Skinneri*, &c. At the edges of the benches pots of the silver and green-leaved *Sibthorpia europæa variegata* are placed, and which so many would like to grow, but cannot owing to some cause or other.

Among other noteworthy things we remarked some plants of *Vanda cœrulea*, successfully grown in a cool-house; *Dendrobium McCarthyi* and *Vanda Hookeri*, in a warm one; and in every house evidence of the careful choice of positions for the more tender or more difficult grown species.

THE BULB GARDEN.

AMARYLLIS BELLADONNA.

IT matters little whether the wall is that of an Orchid-house or of a cool Peach-house, as long as it has a southern exposure, this plant will succeed if planted near it; but in the open it does no good in this part of the country [Hants]. The beauty of the flowers of this species of *Amaryllis* should be a sufficient recommendation for its more extended cultivation. In strong soils plenty of drainage ought to be provided [and the bed be raised above the general level. Ed.], and 10 inches of some light rich sandy compost as well, and then failure to flower this Lily will be owing to the season only. *E. M.*

LILIES AT WEYBRIDGE.

My annual note on our Lilies might have been sent sooner, as the unusual heat and drought made them bloom early, and with most species made the flowers short-lived. The first Lily which showed its appreciation of the fine weather was *L. Humboldtii*; in most seasons, when the weather is cold and rough, this is apt to have spots both on the flowers and leaves; this year there was no trace of these, and all the varieties were very fine. The effect of the weather on *L. auratum* depended on situation; where the subsoil was damp, both growth and flowers were first-rate. In one bed in our wood at Oakwood, about 60 yards long, with different widths, there were about 2000 stems, of all heights, the tallest ranging from 7 to 9 feet high; a large number of these were out at the same time, and the effect was finer than we have ever had before. Happily, Mrs. Duffield was staying at the cottage, and painted a large group of these, so as to preserve an admirable remembrance. In drier situations it was a very different story. In one small hill-field of Lilies, which in wet seasons gives the finest show, both growth and flowers were stunted; and what proved that it was the drought that caused this was, that having moved some fruit trees from this field, we had filled up the vacant spaces with *L. auratum* bulbs taken from the wood-bed, so that exactly similar bulbs were in one place very fine, and in the other very poor. In another part in the wood, where *Rhododendrons* and Oak trees had exhausted the moisture, there was such little growth that I took up some bulbs to examine them; they were sound and healthy, so I expect that they will tell a different tale next year. Perhaps I should say that we have no artificial watering.

L. Krameri and *L. auratum rubro-vittatum* in some places were good, but in most were much below par. The Lilies which rejoiced most in the hot weather and early season were *L. speciosum*; these, with the exception of some which had been moved into newly-prepared ground, and so more susceptible to drought, were in all sorts of situations, finer than we have ever had them before; no rough cold weather injured the late blooms, as is often the case in later seasons. *L. pardalinum* and *L. superbum*, being always planted in more or less damp places, were as usual, but the flowers were short-lived. Most of the other Lilies were the worse for the drought. *George F. Wilson.*

DIFFERENT SOILS EMPLOYED IN HORTICULTURE.

IN January and February of the present year we gave an abstract of a paper by M. Georges Truffaut, on "Leaf-Moulds, their Chemical and Physical Properties, and their Adaptability for various Horticultural Purposes." The author has now issued an enquiry into the formation and character of different moulds or soils employed by gardeners, of which the following is a sketch:—

M. Truffaut says, from early times horticulturists have attached great importance to the choice of the moulds which they employ in their work of cultivation. Both practice and science have demonstrated that particular kinds of soil are more suitable than others to certain plants. Scientific investigation upon this subject must, if rightly conducted be of immense value to the practical gardener, as revealing to him not only the physical qualities of the different soils, but their chemical composition, and consequently their manurial needs.

The work under discussion is divided into two parts. The first comprehends the general composition and formation of soils, the connection of organic with vegetable substances, and the absorbing properties of soils. The second part is devoted to the special study of divers types of soils or moulds employed in horticulture.

The author rightly remarks, that our exact knowledge of the composition of the moulds which we cultivate is very important, and that for several reasons; not the least being that this knowledge enables the gardener to use complementary manures for forcing purposes, and to adapt the supply to the requirements of the particular plant he wishes to raise.

In dealing with the question of the formation of soils, the author shows the important part played by decomposing vegetable substances. The humus, or decayed vegetable matter of soils, has its origin in the dead leaves, roots, &c., of a previous vegetation. It is continually forming wherever plants grow. It is the foundation, and often the entire source, of the organic portion of the soil.

Each year a certain portion of the vegetable growth dies off—leaves and branches fall, and portions of the roots decay. Part of the organic substance which falls upon the surface of the ground returns again to the atmosphere, but a certain part remains, and, added to that which decays underground, becomes available for future growth. The atmosphere of the soil, which at first differed but little from that which exists above it, becomes highly charged with carbonic acid, which decomposes the minerals in the soil, and thus year by year more and more of the nitrogen collected by each generation of plants becomes available for the generation that succeeds it.

The following table illustrates the increase of nitrogen formed during the process of fermentation and decay of certain selected vegetable products:—

Product examined.	Nitrogen per cent.			Authority.
	In original plant.	In the decomposed organic matter.	Increase.	
Hay	1.62	4.42	2.82	Kostycheff
Clover	2.00	5.28	3.28	"
Maize	1.88	4.50	2.62	"
Straw	1.27	2.10	0.83	"
Dogwood leaves ...	1.30	4.70	3.40	Mayer
Oak leaves	0.80	4.70	3.90	Truffaut
Heath	0.20	5.10	4.90	"

It will be remarked that there is an increase in the amount of nitrogen formed during the decay of the foregoing vegetable substances, ranging from 0.83 per cent. in straw, to nearly 5 per cent. in Heath.

Deep beds of vegetable mould are frequently met with in forests under trees, and on dry land generally, wherever vegetation is rank and neglected,

And the differences in the chemical composition of the original materials which compose a soil, mainly account for the enormous variation existing in the soils under cultivation, and of the amount of organic matter and of nitrogen which they contain.

The next table shows the amount of nitrogen contained in the leaves of certain trees in a fresh condition.

Nitrogen in 100 of leaves of—

Maple	0.98 per cent.
Plane	0.89 "
Horse Chestnut ...	0.54 "
Acacia (Robinia) ...	1.05 "
Lime	0.96 "
Service	0.88 "
Ash	0.84 "
Oak	0.80 "
Hazel	0.65 "
Plum	1.68 "
Poplar	0.98 "
Willow	1.28 "
Birch	0.52 "
Elm	0.74 "
Alder	1.36 "
Fir	0.57 "
Catalpa	0.70 "
Average	0.87 "

It is seen that the leaves of the Acacia, Plum, Willow, and Alder are the highest in the element nitrogen, and would therefore form the richest mould. The average amount of nitrogen in the seventeen descriptions of leaf is 0.87 per cent.

These facts teach us that the fertility of soils is due to the richness of the organic residues of previous generations of plants, mixed with certain mineral substances, the most important of which are phosphoric acid and potash.

The next table shows the amount of some selected constituents contained in certain plants, or portions of plants, which may be employed in the production of humus matter of soils.

Constituents in 100 of Vegetable Substance.

Description of Plant.	Water.	Nitrogen.	Phosphoric Acid.	Potash.
	Per cent.	Per cent.	Per cent.	Per cent.
Heath	10	0.9	0.10	0.40
Fern	16	2.4	0.45	2.40
Furze	16	2.5	0.23	0.80
Horsetail	14	1.8	0.41	2.70
Rushes	18	1.1	0.12	0.43
Moss	25	1.0	0.16	0.29
Leaves of Beech ...	15	0.8	0.24	2.58
" " Oak	15	0.8	0.34	2.02
" " Fir	17½	0.5	0.20	0.51
" " Pine	13½	0.8	0.10	0.43
" " Spruce	12½	0.9	0.20	1.60

Little by little under the combined influence in the soil of moisture and warmth, and the action of bacteria, the compound nitrogen of vegetable matter is transformed, and becomes the protean nucleus of microbes, which reproduce themselves with extreme rapidity, having for their object the carrying on of the work of oxidation and conversion from insoluble to soluble plant food.

The next table illustrates the composition of two moulds, employed for horticultural purposes.

Constituents.	Leaf Mould.	Forest Mould.
	Per cent.	Per cent.
Organic matter ...	17.00	8.46
Clay and silica ...	79.80	63.34
Nitrogen	0.50	0.45
Potash	0.31	0.73
Phosphoric acid ...	0.06	0.10
Lime	0.19	2.08
Magnesia ... ..	.....	1.71
Soda ... ..	.....	0.10
Iron oxide	0.26	4.98

The first point to observe is, the large quantity of organic matter present in the soils—in the leaf-mould 17 per cent., and in the forest-mould nearly 8½ per cent. In some samples of fertile mould the

amount of organic matter will not be more than 1½ per cent., while in the famous black soil of Russia it varies from 5 to 12 per cent.

It is also seen that these soils contain about half a per cent. of nitrogen, being nearly four times as much as the average of ordinary arable soils, and nearly five times as much as would be found in an impoverished soil. It is further to be observed that the moulds are correspondingly rich in all the other constituents of plant-food. *J. J. Willis, Harpenden.*

(To be continued.)

THE ROSARY.

ROSE FELLEBERG.

This fine Noisette Rose has been very beautiful this year, especially when grown in a mass, the growth almost hidden beneath the wealth of bright crimson flowers. It is a remarkably free and vigorous Rose, and if the flowers are individually flimsy, they are brilliant in colour, produced in great profusion, and sweetly scented. Such a Rose must be seen in a mass like the Polyantha Rose. Our gardens would gain much if these beautiful old-fashioned Roses were more planted. *V.* [It is a Rose which makes very strong shoots, and is therefore a good variety for covering a bed by fastening the shoots to short stout stumps, driven into the soil, or hooked pegs; but it is better secured in the former manner, the flowers keeping cleaner. *Ed.*]

AN OLD ROSE TREE.

At Wierton House, near Maidstone, there is a tree of the old Noisette Rose, *La Biche*, which is forty-three years old. It is budded on a Briar stem, at about 27 inches from the ground, and has a crown about 16 feet high, and 14 feet wide. This plant is growing in a cool, moist position, on the north side of a building, is quite healthy and vigorous, and appears likely to live for many years if not molested. The top would have been much larger had it not been considerably damaged at some time by snow or wind. The circumference of the stem is 10½ inches. *W. H. Divers.*

CLIMBING NIPHETOS ROSE.

Some few years ago, upon reading a discussion in the *Gardeners' Chronicle* on the above subject, I instructed my gardener to try the experiment of budding the ordinary Niphetos Rose on Banksia Roses growing on the south side of this villa. The result is a perfectly climbing and very floriferous Niphetos. Given a sunny aspect and clever pruning, flowers in quantity can be gathered from this Rose in all months of the year, except one or two in the height of summer and in the depth of winter. The plant is perhaps rather twiggy, and so far the flowers have come smaller than those produced by this same Rose grown on its own stock; but they are very pretty in bud, and most suitable for button-holes.

Now select some of the branches or trailers which show the greatest aptitude for climbing, and multiply the plant by what the gardeners here call "Margotti." Make an incision, say in June, near the base of the branch, stripping up a flap of the bark and wood, about an inch, then insert a small wedge, to keep the wound open. Tie under the wound a handful of moss, and over the wound put some clayey soil. Wrap this again round with moss. Then take a thin sheet of lead about 8 inches square, and with this cover the whole mass round in the form of a funnel, with the mouth up. Water carefully every morning. By the end of the following October, the funnel should be full of roots. Cut the branch off below the roots, and the result will be a plant with the characteristics of the parent, i.e., a Niphetos Rose, with a strong inclination to climb. Another way to multiply the plant is by "propagation," or layering under ground. Dig a trench a foot or so deep, up to the Rose; drag down a climbing branch, and press it down into the trench with a little manure and good soil. Carry the branch along as far as its length will allow, and leave about a foot

above ground, and then fill up the trench. The piece left above ground will rapidly form a new plant, which you leave attached to the old one. Where circumstances permit, the foregoing is an excellent plan. *T. C. H., Firenze.*

ROSES FOR COVERING WALLS AND FENCES.

One of the most important points when planting these is to know about the size to which each variety will attain, and unless this be borne in mind, some portion of the wall, &c., may be almost unclothed. In ordering Roses for this purpose, choose from the nurserymen varieties that are of a similar style in growth, or else plant them at distances suitable for each variety. For example, *L'Idéal* should have twice the amount of space allotted that would suffice for *Ophir*; *Climbing Perle des Jardins* needs thrice the space found suitable for *Marie van Houtte*, and so on. One can easily see how it is that fences are so unevenly clothed when they remember that a given distance apart is usually allotted to each variety. While not admiring strict formality, I like to see a fence clothed uniformly, and having the bulk of its varieties in flower together. As far as the strong-growing Roses are concerned, this is not difficult, *Gloire de Dijon* and its varieties, with most of the extra-strong *Teas* and *Noisettes*, usually flowering within a week or so of one another.

One of the most satisfactory methods of covering a wall or fence with Roses is to plant two distinct types of growth alternately. For instance, I would place the following six Roses 12 or 15 feet apart: *W. Allen Richardson*, *L'Idéal*, *Maréchal Niel*, *Reine M. Henriette*, *Climbing Perle des Jardins*, *Climbing Niphetos*, and also any of the *Dijon Teas*. All of the extra vigorous growers of similar character might be treated in the same manner. These I would let grow more or less at will, only securing as large a quantity of vigorous wood as possible annually. As the wall or fence became filled, I would thin out the older shoots rather severely during the summer, and at pruning time in the spring. Between these strong varieties I would place such as *Anna Ollivier*, *Madame des Tartas*, *Caroline Kuster*, *Dr. Grill*, *Madame Falcot*, and in fact any of the strong growers which are not climbers proper. All Roses do splendidly against a wall or fence, and this latter class will keep the lower portions between the extra vigorous growers from presenting a bare appearance. Nor is this the only advantage of such a combination, for we get a constant crop of flower from June until severe frosts come. The majority of the climbers flower once a season only, seldom producing more than a few solitary blooms after the grand show of early summer is past. The other growers, on the contrary, give us a succession of blooms all through the season, one crop following the other with delightful certainty, and thus rendering the whole fence a source of delight throughout the summer and autumn, as well as during late spring. *A. P.*

FOREIGN CORRESPONDENCE.

MADAGASCAR. — EULOPHIELLA ELISABETHÆ.

CONSIDERABLE publicity having been given in many English newspapers (but not in the *Gardeners' Chronicle*) to a translation of a letter addressed to Messrs. Sander, of St. Albans, the well-known Orchid-growers, from M. Hamelin, the discoverer of the new Orchid from Madagascar, the *Eulophiella Elisabethæ*, I trust you will find space in your paper for the following lines on the subject. As I have been a resident in the island for more than twenty years, and have gathered thousands of plants in various localities, north, south, east, and west, you will see that I know something of the flora of this interesting country, and something also of the conditions of travelling in it. But certain it is, in my opinion, that many, nay, most of the statements made, are purely imaginary. The procuring of the Orchid has been surrounded by an air of mystery and danger, which makes the story incredible to

anyone acquainted with Madagascar. As you will have seen, the narrative is larded throughout with such phrases as the following:—

"*Eulophiella Elisabethæ* hardly exists now. The plant grows in a country inaccessible to Europeans. I had a special privilege accorded me to penetrate those regions, &c."

"This plant only grows in a very limited region (I believe he somewhere states 'a swamp') . . . on the tops of the tallest trees."

"Under the special care of my brother-in-blood . . . to prevent the total extinction of the species."

"Amateurs may trust that no plant of this species can or will be imported."

"Enormous difficulties and manifold dangers have to be surmounted before even the country where they grow can be reached."

"I had numerous obstacles to overcome, and was obliged to make enormous sacrifices, and to incur fearful expenses, &c."

"An amateur paying 100s. for a plant would not cover the cost. Not counting the constant exposure of my life, and the lives of those accompanying me, not only was our party exposed to the risk of being strangled by ferocious and hostile tribesmen—a fate that befell many a poor fellow belonging to our expedition—but we had to struggle almost night and day against the wild animals haunting these primeval forests. The most terrible of all is the *Protocrypta ferox madagascariensis* (*sic*), against which we had constantly to be on guard. During the day-time it is extremely dangerous, for it crouches in the forks of trees . . . and watches for its prey." (The latter part of this passage is pure and unmitigated fabrication.)

"Big fires had to be constantly kept up, &c."

"The favourite haunt of the '*Protocrypta ferox*' seemed to me to be amongst the masses of foliage where the *Eulophiella* grew. Here they were numerous."

"Appalling danger."

"There are also some gigantic hippopotamus and rhinoceros fossils in Madagascar, which I found in certain parts, and which, according to their bones, must be nearly six times as large as our elephants." (!)

Now, the truth is, that no rhinoceros bones have ever been discovered in Madagascar; and the bones of the extinct hippopotamus indicate an animal "of rather small dimensions."

It is simply in the interests of truth, and because these adventures have been given such prominence in so many English papers, that I write you these lines. To me the only credible fact connected with this story is that M. Hamelin has discovered a new and interesting Orchid somewhere in Madagascar, probably in the south or south-west, where travelling is somewhat dangerous; the rest is largely or entirely pure romance. *R. Baron, Antananarivo.*

[On receiving a copy of M. Hamelin's statement we did not think it desirable to produce it in the *Gardeners' Chronicle* until we had communicated with botanists familiar with that country. One of our correspondents who has collected largely in Madagascar, comments on the fact that M. Hamelin does not mention the place in which he journeyed. The *Protocrypta ferox* appeared to our correspondent very startling, as he met with no animal with such habits along his route. "There is, however," says our correspondent, confirming Mr. Baron, "a very considerable tract in south-west Madagascar, which has only been very hurriedly visited by Europeans, and it is quite possible that there are many new Orchids there, and that M. Hamelin became blood-brother of a chief, and married all his wives. M. Hamelin does not mention the want of water, which is a characteristic of the Epyornis country. If he penetrated this region and came out alive with a collection, he is a brave and clever fellow." Ed.]

CITRUS (LIMONIA) TRIFOLIATA.

We have in our nurseries at Calcaupthout, near Antwerp, a splendid specimen of *Limonium trifoliata* covered with fruit, a sample of which I send for your inspection. Our plant forms a dense bush about 6 feet high, by 6 feet in diameter, and has passed

our most severe winters for many years without any protection whatever, and has not suffered in the least. It has flowered every year, and borne fruit occasionally, but this year a good number of fruits have been produced, which have acquired their full size and their pleasing lemon-yellow colour. As I never met in your esteemed paper with any hint about the fruiting of this plant, I assume that this sample may be of interest to you. *Ch. Van Geert, Antwerp.* (A similar specimen has been sent to us from Gloucestershire, of which more anon. Ed.)

A TRAVELLER'S NOTES.

(Continued from p. 462.)

COREA, June 1.—Since writing I have travelled 600 miles through the centre of the country; the journey was performed on ponies, taking exactly twenty-eight days, of which four days were devoted to repose or being entertained. From eight to ten hours a day, sometimes through unavoidable circumstances more, were spent in the saddle; for ten days the sun blazing the whole time, and varying between 85° and 100° in the shade, and what was worse, the nights were nearly as hot as the days. The remainder of the time we had some cloudy days, some equally hot. Tinned meats and rice were my provisions, the latter of excellent quality. I was received by the highest officials up to Prince Ming, Governor of the most important Korean Province, and said to be the leading man in the kingdom next to the King. He told me the hair of foreigners was red because they drank sheep's milk! I dined with a judge who trusted I would make my stomach as big as a mountain, and stayed and journeyed four days with one prefect, who, when he had consumed sufficient French Prunes, Huntley & Palmer's biscuits, pyretic saline, coffee, and whiskey—especially whiskey—hoped I would not leave him for ten, or even twenty years. Official runners were frequently placed at my disposal, causing all we met to go off the road, and those mounted to dismount. I was dismissed from one yamen (official residence) with a blare of trumpets, and received in another (in the prefect's chair, surrounded with guards, scribes, and a most discordant band of music), with the firing of a matchlock some centuries old. I saw two men publicly whipped (one must have been over sixty) because they had not got the lunch of a prefect and myself ready, and one prefect was put in such a good temper that he pardoned his prisoners of the day (four wretched creatures on long boards about 5 feet in length), reviewed all his attendants down to his female slaves—regular drudges, and his army of eight men (such men!) and two officers. I said it was magnificent, it was—magnificently funny; but I waited for two days, and I was some miles from the place before I laughed. Despots as friends are delightful, but I see no necessity to try them when offended. Government dancing girls, whose persons belong to the king and his officials, and who entertain guests as well, sang and danced at the order of Prince Ming, who told off an official to entertain me during my stay in his city. I was a curiosity to most, to some a startling novelty; in one place—a big city—when I rode down the main street one morning, men ran into houses and beckoned others out; a few moments' halt meant a crowd three to five deep, who had not washed for months. Children would frequently stare in blank amazement, then run away yelling. Women, except the lowest coolie class or very old, I never saw, excepting the dancing girls. Only once were we coldly received, and unpleasant occurrences were few. Once my Jack-of-all-trades, servant and coolie-thrasher, &c., pulled a man's hair out, and fists and feet were sometimes used with freedom. I intervened as seldom as possible, but when I thought it best was always treated with respect; in fact, they are afraid of you, not knowing one's power, or rather lack of power. I have walked my horse towards a man, and he simply ran helter-skelter. My interpreter, a shameless scoundrel, was the most difficult to manage; he robbed me unmercifully, but did me right well; he bears the character of being a first-rate man, and he is. To him is due all the official attentions I received. He always represented me as a most important personage—once I was "higher than general"—it all seemed to be taken in, and I thus saw much that I never should have seen, and what it is fair to surmise few Europeans have ever seen.

You (Messrs. Veitch) may safely claim the credit of being the first to send a man with a knowledge of plants through Corea. Few, very few (excepting

missionaries disliked by the natives and generally avoided by the Europeans) have been anywhere in the country, and it is most rare to find a resident who has summoned up moral courage to leave the hole where fate has placed him, and travel about. I say a hole, advisedly.

The country, contrary to my expectations, and to all that I had been told of it (very little), is rich, and much cultivated. The vegetation is rich, and I have formed a herbarium of plants, chiefly herbaceous and shrubby, and all more or less of horticultural value.

My journey, at the best, for several reasons, was bound to be preliminary. Without the assistance of the missionaries, I doubt if I would have done so well.

COREA, July.—I am having five ponies and three men, beside the above two—one for self, one for interpreter, one for clothes, bed, &c., one for money,

be attacked. I should rather say a Corean would regard a European, as in China, with such universal contempt that it would not matter what one did. We all regard ourselves as most enlightened; Eastern nations regard us as just the opposite. The dress is curious; all wear tall black hats with broad brims of horsehair or Bamboo; all are dressed in white, the outer robe loose-flowing, confined by a girdle at the waist. Gentlemen sometimes wear beautifully-coloured silks. These clothes are taken off only at the change of the seasons; bathing is unknown; and the filth of their persons can be imagined. The streets—if streets they can be called—are very narrow, with an open drain, a reeking cesspool on each side; the stench is sometimes sufficient to make one positively ill. It is a wonder cholera and typhoid ever cease to exist,

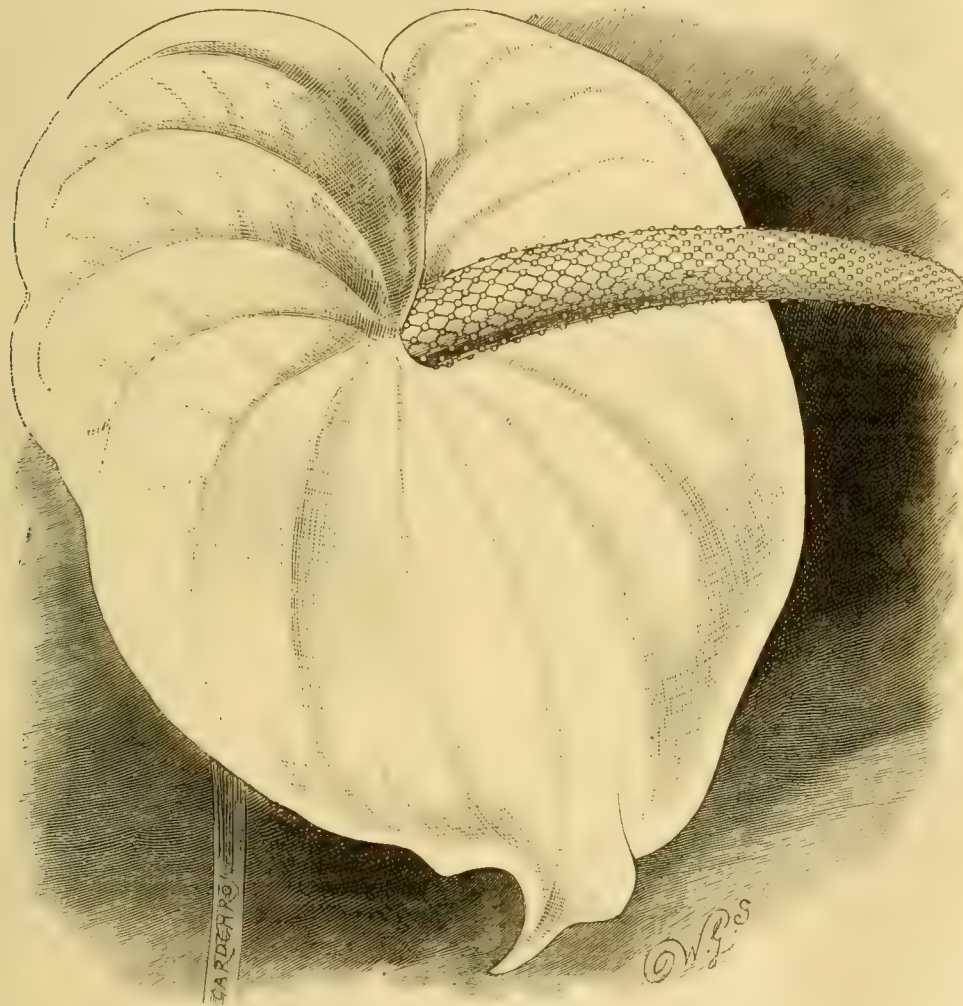


FIG. 92.—ANTHURIUM WAMBECKIANUM: SPATHE WHITE; SPADIX PINKISH-WHITE.

and one for provisions; tinned meats, coffee, cocoa, whiskey, &c., of the first named I have several dozen, very palatable with rice, to be obtained everywhere. Money is a great nuisance. It is possible to have a special letter, by which one can sign for the outlay in each village, redeemable at Seoul. American residents get this, but the English Consul is unable to oblige me. I am therefore taking a pony-load of cash, 70,000 pieces—strings of money, 3000 being equal to about 2s. 10d. This will last till I reach Gensan, where a further supply can be obtained.

The Coreans are a lazy, peaceable, filthy lot, the only annoyance likely to be felt being from curiosity, though contrary from what is the case in China, privacy is more or less respected. Some of the customs are most quaint; it is a country yet absolutely uncivilised. None but the women of the lowest coolies are seen; and if on meeting one by some exceptional accident one regards her fixedly, one would certainly

even in winter. The Japanese, strongly disliked, are in force here, and frequent rows are common. The more I see of that nation the less I like them, books and the tales of those visiting the country for a few weeks give a most erroneous impression of their deceitful, little character. The heat is great, and the rainy season is expected shortly. I shall get as far into the country as possible. The post is in the hands of the Japs, and as badly managed as theirs at home is well managed.

The tortures of this nation are severe. Two weeks ago two men tried to blow up the King's father; being caught, they were said to have been sawn in half, commencing at the skull. Robbers, highwaymen, &c., are also fearfully tortured; as were the first three French Bishops sent here—from 1841 to 1861. Christianity is still prohibited, but all Europeans are well and kindly treated now. James H. Veitch.

(To be continued.)

ANTHURIUM WAMBECKIANUM.

On October 10 last, Messrs. Linden, L'Horticulture Internationale, Brussels, showed at the meeting of the Royal Horticultural Society, amongst several other novelties and varieties, a plant under the above name, which possessed a spathe of dead white—not varnished, a spadix of pinkish-white, and leaves of the usual simple character. As a distinct looking variety of robust growth, it is worthy of cultivation for the contrast it affords to the varieties of Anthurium which have bright-coloured spathes. A First-class Certificate was granted to it by the Royal Horticultural Society.

A JEWISH HORTICULTURAL SCHOOL IN HANOVER.

AN important movement has been started for the establishment of a Jewish Agricultural School in Bad Limmer-Brunnen, near Hanover. There can be no doubt that this is a much-needed enterprise, and every serious investigator of the present and future condition of the Jews in European lands will readily perceive that the movement deserves warm welcome, and in case the representations of its founder prove (as we have every reason to believe that they will) accurate, English philanthropists will do well to extend to Herr Alexander Moritz Simon, American Vice-Consul at Hanover, both moral and material support.

Herr Simon does not propose that all the pupils admitted into the school should inevitably be expected to devote themselves to gardening, agriculture, or farm labour, but those pupils who have a predilection for other pursuits will receive facilities for obtaining the necessary knowledge and dexterity.

In order to accomplish these ends, Herr Simon has acquired about 70 acres of excellent land near the town of Hanover, of which 30 acres are already in cultivation, and the requisite buildings are in course of erection to accommodate between 50 and 60 boys. The founder hopes to convert the school into a public institution. He has secured the services of an experienced Jewish teacher, who, with an adequate staff of assistants, will undertake the direction of the whole educational curriculum. The school will be managed in accordance with Jewish tradition, and all the requisite accoutrements for Jewish worship and home-life will (from the outset) be provided.

The general plan of education will be that of the ordinary public schools, with the addition of the religious training. The food supplied will be plain, but wholesome and efficient.

It is also proposed to establish a branch for girls on the same lines.

Herr Simon does not intend to restrict the advantages of the school to German boys. Therefore, the success of such an effort in Germany is obviously of consequence for the Jews of all countries.

Besides the ordinary school education, the boys will spend a portion of each day in outdoor manual work in the gardens of the school. The amount and severity of this work will be proportioned to the age and strength of the boys. Lads between the ages of fourteen and sixteen years, who desire to become gardeners, will, in addition to the facilities provided in the school itself, enjoy the privilege of obtaining further practical instruction elsewhere. The pupils will be allowed to continue their work under the direction of the most experienced teachers in the Royal Horticultural School at Geisenheim. Every facility will be afforded for the study of horticulture in open gardens as well as in hot-houses. Even the large fruit-gardens on the estate of the Duke of Cumberland, which are so universally and justly renowned, were placed at the disposal of the students from the spring of the present year.

The Government has agreed, in the most obliging manner, to supply the new institution with young fruit-trees at a very moderate price. Special attention will be given to pupils who show aptitude for the cultivation of fruit; other branches of horticulture will also be studied. It is unnecessary to note

that the pupils will be more carefully supervised, and that their education will be more systematic, than could be the case in many private gardens.

During the winter months the boys will receive instruction in handicrafts.

As a rule, the pupils will remain in the institution up to the age at which they usually leave school, and then will continue, either within or without the institution, the course best suited to their tastes and capacity.

The total cost of maintaining a boy of school age is 400 marks (£20) a year; those who are already occupied in gardening, 150 to 200 marks. In the latter case the cost of clothing is not included. These sums seem estimated at a very low rate, and certainly no one can charge the founders of this new technical school with extravagant proposals.

There are two ways in which intending contributors may help the good work forward. Either they may contribute sums of money, or the implements and live stock. The list of desiderata is large, and we have no doubt that donors will come forward to supply these pressing needs. The total sum sought for the purchase of these requisites is 14,000 marks. This is not a very large amount, when the magnitude of the proposed work is taken into consideration.

Herr Simon has authorised the statement that he will gladly receive into the school English boys sent to him by any accredited body in this country. *Jewish Chronicle, October 21.*

AMERICAN CONIFEROUS FORESTS.

HAVING just returned from a trip to the west, I cannot but wonder at the apathy which is shown by the American people in general on the subject of the destruction of their forests. I have now crossed the continent by four different routes, and everywhere it is the same sad story. Wherever the railroads go the valuable timber is either burned or wasted, and nobody but a few of the more enlightened Americans seem to recognise that what Mr. Douglas says is true. I travelled with a gentleman of great ability, who was largely interested in lumber in the north-west, and who said that the best timber was nearly all gone in Minnesota, but that it was no use for lumbermen to try to save what was left, as the railways were burning it down a great deal faster than they could cut it. He told me that in Colorado there were no forests worth mentioning, and when I went there I found that, though from a European point of view, there were still large tracts of what we should call very valuable forest, yet fires were burning in all directions, and probably two-thirds of the coniferous timber in sight of the railroads was already destroyed. In the mountains, I learned that, owing to the exceptionally dry season, water was in places getting scarce, and that there was, in some cases, hardly enough in the rivers to supply the irrigating ditches below. At Leadville, which was surrounded by forest not many years ago, I was told that mining timber now had to be hauled 15 miles. When I went across the boundary into British Columbia it was much the same thing, though in the damper valley of the Columbia the forests are less subject to burning, and notices were posted to warn passers-by against carelessness.

At Nelson, a new mining town in the Koutenay district, I rode for many miles through what had been magnificent timber, all burned up to an altitude of about 4000 feet, except on the shady northern slopes. Along the line of the Canada-Pacific, east of Revelstoke, it is the same story, and though much good timber is still left in places, yet on the east of the Kicking Horse Pass most of it is burned, and the young trees which sprang up after the first fires are again burned. I saw new ties being put in which were not above 6 inches on the face in some cases, and would not last more than five or six years, and quite small logs floating down the rivers in thousands to supply the saw-mills. I do not suppose that anyone can form a correct judgment of what

will be the future of all this western country, but I believe that a great deal of it which is habitable now will not be so after another fifty or a hundred years of such waste.

There is, no doubt, on the Pacific coast enough good timber to supply all North America for centuries, but what will it cost when it has to be freighted so far? And what will become of the drier parts of the country if irrigation is only possible for three or four months of the year? *Garden and Forest* has done its best for five years to bring all this home to the inhabitants of the United States, but as far as I could judge public opinion in the west is not more advanced than it was in 1887, when I was last there, and it will soon be too late to save anything but the most inaccessible forests from destruction.

Last year I went to one of the principal importers of timber in Gloucester, England, to see if I could get some really first-class lumber for building Orchid-houses. He told me that such a quality as they used to have forty years ago could not now be found. It was not a question of price, as there was not any. What is imported now is cut from smaller, quicker-grown trees, and will not last. In consequence, pitch-pine is being used for horticultural buildings. *H. J. Elwes, in Garden and Forest.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

ACALYPHA MUSAICA.—Plants of this bronzy variegated decorative subject should be given good places in the stove, where they will get plenty of light and attention; we have nothing to beat them during the winter months for giving colour in the way of stove foliage plants, and they will stand in a cool room without injury longer than most plants.

THE FORCING-HOUSE.—Crowns of Lily of the Valley may now be potted-up for early forcing, using 5 and 6-inch pots, and putting about one dozen crowns in each pot. The soil for the purpose should be rich loam, mixed with leaf-soil and plenty of sand, with a bit of fertilising-moss placed over the crows. After potting, afford the pots a watering, and place them in a cool house or shed under dryish soil or cocoa-nut refuse-fibre. A few pots may be placed in heat at once for an early batch, and for a succession of flowers a few pots as required every week. The pots containing the crowns should be plunged in bottom-heat of about 80°, and where no proper forcing-house exists, a Melon or Cucumber-pit, with hotwater-pipes below the bed, furnished with check-valves, so that the heat may be regulated as required, will answer the purpose. Sink the pots well down in the bed, and invert an empty pot over each, covering them with soil. Examine them from time to time, and when it is found that the growth is about 1 inch high, take off the inverted pot, but leave the crowns still plunged in the bed, and afford water freely at the same temperature as the bed. The empty pots may be put over them again for a time, but without a covering of soil, and then gradually expose them to the light. The plants must be shaded during bright weather. It usually takes about one month to bring Lily of the Valley crowns into flower before January. Lily of the Valley is greatly improved by liquid manure, but it must not be given overhead.

SPIRÆA JAPONICA.—Roots for early work should be potted off as soon as possible, and plunged under cover in the same manner as Lily of the Valley; and the early batch should be treated in the same way as recommended for those, with plenty of heat and water.

BULBS.—Roman Hyacinths, Van Thol Tulips, Double Roman and Paper White Narcissus, double and single Jonquils, should be pushed along in the forcing-house; also *Dautzia gracilis*, purple and white Lilacs, *Azalea mollis*, *Polyantha* and Tea Roses, *Dielytra spectabilis*, and clumps of Solomon's Seal.

HELLEBORUS NIGER.—Clumps of this plant should be potted and placed under glass, a few pots being placed under glass for affording earlier flowers than they would appear out-of-doors. These Hellebores resent root disturbance, and do best when

potted in February, although that advice cannot always be followed.

BOUVARDIAS should be fumigated with tobacco or syringed with quassia-water if any green-fly be present on them, and be afforded some liquid or other manure at times. As the Bouvardias last longer in flower, and the growth and blooms are more robust when grown comparatively cool, it is not wise to use more fire-heat than is necessary to maintain a day temperature of 55° to 60°. Plants lifted from the open ground in September are now flowering here with air on the house night and day. The variety Mrs. Robert Green, a salmon-coloured sport from President Cleveland, is worth growing; also the double pale sulphur variety *Flavescens*.

VIOLETS in pits and frames will require plenty of air night and day, removing the lights altogether on sunny days. If the soil was thoroughly watered when the plants were set out, no more water will be needed for some long time. One of the chief points in growing Violets is to plant out in the month of May strong-rooted divisions of the plants, and one of the best places for a plantation is a border on the north side of a wall or tall hedge. The ground for Violets requires to be rather heavily manured and deeply dug. At the time of planting, dig a piece sufficient for a row of plants; line it out, and plant the divisions with a trowel, and place the foot firmly against each root to make it fast in the soil, and after a row is planted, water the soil rather heavily.

ZONAL PELARGONIUMS in flower will require a temperature of from 55° to 60° by night, and 65° to 70° by day, with a free circulation of air, and they flower the best if they are kept rather dry at the roots, an occasional watering with clear soot-water doing them good.

PRIMULA SINENSIS FIMBRIATA AND **P. OB-CONICA** will need careful watering during the dark days approaching, the plants soon going wrong if over-watered. Let them have abundance of air night and day, when the weather is not frosty, avoiding fire-heat as much as possible, as it spoils the colour of the flowers, and weakens the growths. These plants should be carefully turned round once a week, and have slight shade afforded to them during bright weather.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

FRUIT BUSHES.—Where sparrows and other birds evince a partiality for the buds of Currants and Gooseberries, pruning should be soon begun, and as red and white Currants are those which suffer first from these birds, they should be the first to be pruned, the work being pushed on speedily. After the pruning is finished, the buds may be rendered distasteful to the birds by syringing the bushes with a mixture of fresh-slaked lime, fresh soot, and water, in the manner previously advised as a protection against bullfinches. In pruning the red and white Currants, a few extra shoots should be left on each bush, in case of the loss of shoots—not an unusual occurrence on bushes which have been closely pruned for a number of years. After the red and white Currants, take the Gooseberries, and in the event of getting all bushes pruned at an early date, the dressing of lime and soot may be deferred till then, when after clearing weeds off the ground, the bush quarters will look tidy for the winter. Experience only can teach the operator how to prune the Gooseberry to the best advantage, each different variety requiring different treatment; but it is requisite in all of them that some of the old branches be cut out, so that the hand may be readily inserted in gathering the fruit in the interior of the bush. Upright growers, like Whitesmith, Champagne, &c., after pruning back to the best-placed young shoots, should have the remaining shoots spurred in to 1 inch in length. With Warrington and others of a more or less pendulous habit, pruning back to well-placed diverging shoots, and slightly shortening these to a bud on the upper side of the shoot, best maintains the balance of the bushes, and furnishes them with bearing shoots.

CUTTINGS OF GOOSEBERRIES AND CURRANTS should be made and put into the earth as early as possible, and any open border that may be vacant will suit them for the first year. Cuttings should be straight shoots well-ripened and firm, and as they should have a clean stem of not less than 6 inches in height

above the soil, the cuttings must be at least 12 inches, and will be better if 15 inches long, taken off near the base, but avoiding the actual base, as that part is full of buds. Having decided on the length of the cutting, leave four buds near the top of the cutting, to furnish shoots for the formation of the crown, all the rest being cut out with a sharp knife, any buds left underground result in suckers. The cuttings should have the upper part dipped in warm fresh lime-wash. In putting in cuttings, cut a trench with an upright face, and place them so that at least the upper 6 inches are above the ground-level.

THE GOOSEBERRY CATERPILLAR.—The dressing of lime and soot is a deterrent to the "caterpillar," but if the bushes were infested ever so little last spring, it is well to take other precautions; and if the bushes are planted sufficiently wide apart to admit of digging the soil deeply midway between the rows, it should be carefully shovelled away underneath the bushes where the chrysalis lies hidden, and thrown into the middle of the alleys and dug in deeply, the soil taken away from the bushes being made good from the alleys. The Gooseberry saw-fly winters not only in the soil, but in the fallen leaves, and these should be collected and burnt. Where bushes are planted too close together to admit of the above method being followed, the old soil taken from around the stems should be replaced with some from another quarter of the garden, and when that is removed, deeply trenched in somewhere else. As a further safeguard, place a handful of air-slaked lime and fresh soot, mixed together round each stem.

THE KITCHEN GARDEN.

By H. O. PRINSEP, *Gardener, Buxted Park, Uckfield.*

CABBAGES.—Owing to the favourable character of the weather, Cabbages in this district have grown fast, and if this kind of weather continues, the first batch will be very forward. Those, however, who took the precaution to sow late will have little need to regret having so done. It will be good practice to plant later-sown plants between those already planted, or make a new plantation, for should the winter be a severe one, the earliest plants will suffer. If however this cannot be done, the seedlings still remaining in the seed-bed should be pricked out at 6 inches apart for lifting in the spring, if they should be wanted.

SALSAFY.—Where this is still in the ground, no time should be lost in digging up a portion of the crop, storing the roots in a cool place out of the reach of frost.

SCORZONERA.—The same may be said of this root, for although it will withstand frost, it is well to have roots in store.

RHUBARB.—Roots may be put into the Mushroom-house or other moderately warm place every fortnight. Rhubarb may be grown under the stages of an intermediate house or any place where a sufficient steady warmth is obtainable, but it does not start readily into growth at this time of the year, therefore more time must be allowed for the various batches to produce stalks.

MUSHROOM-HOUSE.—Avoid the use of fire-heat as much as possible, but when it is necessary do not let it rise higher than 60°. The beds may now be made thicker, thus retaining their heat for a longer period than is necessary in warm weather.

HERBS.—See that means are at hand to protect Chervil, Basil, and similar herbs from frost. Parsley roots may be lifted, and transplanted to where protection can be afforded them.

THE ORCHID HOUSES.

By W. HOLMES, *Gardener, Pickering Lodge, Timperley.*

ODONTOGLOSSUM CRISPUM AND ITS VARIETIES.—Of the above we might include those natural hybrids, *O. Andersonianum* × *O. Ruckerianum* ×, and also *O. Hallii* × *O. triumphans*, *O. Pescatorei*, and *O. gloriosum*. Any of these varieties if potted or top-dressed at the time advised in a former Calendar will have become re-established, and the sphagnum moss in free growth; but should the latter grow too abundantly it should be thinned a little, or more moisture than would be good for the plants will be kept about the base of the pseudobulbs. The well-being of these plants is best maintained by allowing the compost to become dry occasionally,

and it is better practice to afford water often than to keep the materials always moist. If an *Odontoglossum* which has been repotted is not doing well, perhaps by reason of the compost becoming sour, turn it out and repot it. Those plants that were repotted in September may now be pushing up flower-spikes, and they will be benefited by being deprived of them, soon making another pseudobulb stronger and better able to carry a strong spike. I cannot say that I put this in practice in every case, and I do not advise others to do so, but I give it as pointing a way to making strong spikes. Plants that were merely surfaced will be showing flower-spikes, and these should be allowed to come to perfection, as the pots are filled with roots. Our plants are throwing up much stronger flower-spikes than usual, these being from twelve to twenty flower-buds on a spike. Snails do much harm among the flower-spikes of *Odontoglossums* at this season, and must be diligently hunted for about 7 p.m. or earlier. Some persons are satisfied by setting bran about for the snails to feed upon, but hunting for them is the better plan. Keep up a steady temperature of 50° at night, a moist atmosphere, and afford continuously fresh air, which will inure them to the severe weather at a later part of the season, and should early frost occur, much less moisture will be needed. The roof glass must be kept very clean, and especially if the house is near a smoky town the washings must be frequent.

PLEIONE LAGENARIA AND P. WALLICHIANA.—Plants about to finish flowering may be kept rather dry than moist for a week or two. *Calanthe Veitchii* and *C. vestita* will require a good deal of attention in watering whilst the flower spikes are rising, and the longer time the leaves can be retained the finer will be the flowers, and the longer the spike. Too much water should not be afforded, but just enough to keep the soil moist.

FRUITS UNDER GLASS.

By M. TEMPLE, *Gardener, Carron House, Falkirk, N.B.*

PINERY.—Plants from which the fruit is cut should be afforded water, in order that the suckers may grow to a good size before being taken off at the end of the year. Strong suckers may be readily grown into robust plants, but they always suffer by remaining on plants after healthy growth has ceased, and it is better to pull them off the old plants, and pot them firmly into well-drained 6 or 7-inch pots, putting a small quantity of pounded charcoal with the potting soil. They should be plunged into a bottom-heat of 75°, water being very carefully applied till roots form. A trifling amount of air may be let in by the upper lights or ventilators, and the pipes made warm enough to prevent moisture condensing on the woodwork and glass, but no more fire-heat should be used than is needed, and allowing the temperature to fall if the weather should become severe.

LATE VINES IN POTS.—It is not unusual for Vines in pots which have made fine canes, and showing signs of ripening by the bark becoming brown, to be placed against open walls and hedges; now I think that such treatment is not conducive to first-class fruiting. Let such Vines have a dry atmosphere with the lights opened more or less every day, and in the North some amount of fire-heat, affording just enough water at the roots to keep the roots in a healthy state. If the canes have not been stopped at the point at which they are to remain for fruiting, it should now be done, and the foliage well exposed to the sun till it begins to drop off. When buying Vines in pots for early fruiting, it is well to ascertain how they have been ripened off, if by a check from cold they are likely to be in a bad condition.

STRAWBERRIES.—As the ripening of the crowns is of great importance, and a sodden soil is not conducive to that end, the pots should be turned on their sides during heavy rains, and the plants stood wide apart at other times. Do not let them root into the gravel, coal-ashes, &c., on which the pots are standing, and if they are placed in glass structures at this season, there must be no coddling, but abundance of air afforded at all times when it does not freeze hard. Plants for early forcing should always have some kind of protection placed over them to throw off rain, and by inducing rest, by a rather drier treatment, they are better got in order for forcing gently in the beginning of the month of December, although little good results from forcing the plants before the end of that month. I have forced Black Prince into fruit to supply small gatherings at Christmas, but such efforts seemed

wasted labour. Plants which were planted early in the season in a good position, and which may be showing bloom, may be lifted, and brought on slowly under glass if fruit is required at the end of the year. It may here be stated that plants which were forced last season, if they have been kept in pots, can be easily fruited at the time indicated by placing them in a temperature of 50° to 60°.

TOMATOS.—Plants which may be fruiting in cool unheated houses may be relieved of all their fruits, when these are of fair size; complete ripening being brought about by putting them in a warm dry place. Young plants growing in warm houses should have as much air as can be safely afforded, and be freely exposed to the sun. Well-rooted cuttings or seedlings may be shifted into pots 2 inches wider than those in which they have rooted—not larger, or rank growth not favourably fruiting will be made; still, a starvation treatment is to be avoided.

THE FLOWER GARDEN.

By T. H. CRASP.

THE HERBACEOUS BORDER.—The weather being generally favourable for work out-of-doors, attention may be turned to the herbaceous border, the plants in which are much better for being divided and reduced in size every few years, and most of these plants enjoy a liberal dressing of manure, which cannot be very readily dug-in without a general overhauling of the plants, and such work may be done now rather than in the spring when there is so much to be done, moreover the plants are then better able to withstand frost and the drying winds of spring. In the first place, take up all the plants for a certain distance along the border and lay them in, so that frost cannot harm them, then dress the border liberally with decayed manure, and dig it deeply. Let it lie untouched till dry enough to tread upon, then level and tread it all over, raking it roughly. The roots should then be divided and sorted according to the height they attain, the colour of the flowers, and the variety. After planting, afford the border a mulching of partly-decayed leaves or stable litter to protect the plants from frost.

LAWNS.—These do not require much attention beyond sweeping and rolling, and a close mowing for the last time. Most lawns are benefited if at this season a slight dressing of some finely-sifted fertilising material be afforded. Do not allow tree-leaves to accumulate in corners of fences, or anywhere on the lawn, as much labour will be caused by the worms drawing them into the turf. Walks should be regularly rolled at this season once a week. In order to get the outdoor-work well in hand, Box-edgings may be planted; in fact, the work of laying may be more expeditiously done than in the spring, and the plants have a better chance of getting established. The pruning of many species of shrubs, which were not pruned after flowering, may be commenced, and all transplanting operations should be pushed on with in mild weather. Flower-beds may be cleared, and all planting of spring flowering plants and bulbs finished. The edges of the beds may be clipped, and beds that are to contain flowering plants should have a good dressing of decayed manure or leaf-soil dug in before planting them. Dahlias, Cannas, Gladiolus, Salvias, &c., should be dug up and stored away in a dry shed from which frost is excluded. Briar-stocks may now be collected and planted, first trimming them hard, and removing any rough shoulders or knots. They may be planted about 6 inches deep, 18 inches apart, with a 3-foot space between the rows.

FRUIT NOTE.

APPLE BALDWIN.—Trees of the above variety are seldom seen in this country, but calling at Orton Hall Gardens, near Peterborough, a few days since, I noticed a low standard Baldwin carrying a very heavy crop. Mr. Harding, the gardener, speaks very highly of its good-keeping, cropping, and generally useful properties. I have since heard that he gathered thirty-five stones of Apples from this tree, which was grafted by him only eleven years since on an old stump of a worthless variety. It has been grown without any shortening of the branches of late years, and has now a fine large head. The variety does not resent pruning, as two other trees at a short distance from it are kept in bush form, and these also bear heavy crops. *W. H. Divers, Ketton Hall Gardens, Stamford.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	Nov. 7	National Chrysanthemum Society, at the Royal Aquarium, Westminster (three days).
		Kingston and Surbiton Chrysanthemum (two days).
WEDNESDAY,	Nov. 8	Brighton and Sussex New Horticultural and Chrysanthemum.
		Southampton Chrysanthemum.
THURSDAY,	Nov. 9	Watford Chrysanthemum.
		Devizes Chrysanthemum.
FRIDAY,	Nov. 10	Bath Chrysanthemum (two days).
		Bournemouth and District Chrysanthemum (two days).
SATURDAY,	Nov. 11	Torquay Chrysanthemum.
		Croydon Chrysanthemum (2 days).
SUNDAY,	Nov. 12	Chichester and West Sussex Horticultural (two days).
		Tiverton Chrysanthemum.
MONDAY,	Nov. 13	Windsor, Eton, and District Horticultural and Chrysanthemum.

SALES.

MONDAY,	Nov. 6	Dutch Bulbs, at Protheroe & Morris' Rooms.
		Plants from Belgium, Roses, Greenhouse Plants, &c., at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 7	Dutch Bulbs, Lilliums, &c., at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	Nov. 8	Mr. T. S. Ware's Great Annual Sale of enormous quantities of Nursery Stock at the Hale Farm Nurseries, Tottenham, by Protheroe & Morris.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 9	Plants, Palms, Lilies, Narcissus, &c., at Protheroe & Morris' Rooms.
		Important Sale of Nursery Stock at The Nurseries, Toddington, Winchcomb, Glos., by Protheroe & Morris (two days).
FRIDAY,	Nov. 10	Roses, Plants, &c., at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 11	Orchids, at Protheroe & Morris' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—43°·9.

WE are now well into the great Chrysanthemum season, and in the course of another week will be held hundreds of exhibitions that this indispensable flower has called into existence. Our columns will be burdened with Chrysanthemum lore, and most gardeners, whether one meets them at home or abroad, will have but one main topic of conversation. It is marvellous the position of importance this flower has attained, and it cannot be explained by saying that it is merely the result of a fickle fashion, which may soon be transferred to another and altogether different kind of plant, although some of its success may no doubt be attributed to such a circumstance. The Chrysanthemum has, however, two very important and lasting points in its favour, which have been more responsible for its present position than any other reason. The first of these is the wonderful merit undoubtedly possessed by the plant itself, which could be easily illustrated by referring to its adaptability for decorative purposes, to its extreme floriferousness, or to the simple treatment that it requires when compared with many other plants which require shelter during the whole year. Nor would we forget the boon it is to the towns, for here is one of its chief recommendations; the displays that we have seen in our parks, nurseries, and in some private collections, almost in the centre, and certainly in some situations in London most inimical to plant-life, are truly wonderful.

Then the other great point in its favour is that it blooms when flowers of any kind are most appreciated. In the dreary month of November it creates a floral blaze such as we hardly see surpassed during any portion of the year. It is not so remarkable then, after all, that the Chrysanthemum should maintain the proud position to which it has attained.

At the present date, after seeing many of the best collections near London, and noting the interest and enthusiasm manifested by its patrons, it appears that the field over which it reigns is wider even than ever.

After such a remarkable summer as we have had, the question would naturally arise, "Has it been favourable or otherwise to the production of exhibition blooms?" The extreme hot and dry weather has been prejudicial in cases where the staff of labour has been rather under than over what it should have been, because the plants have suffered from too sparse attention in regard to watering, but where this has not been neglected, the season has apparently been favourable. It is likely that the show of the National Society and others to be held next week, will prove this to be one of the finest Chrysanthemum seasons ever experienced. The only complaint we have heard has been in reference to the incurred section, that in some cases the blooms are not so large or well-formed as usual, whilst in others where they are considered well up to average they are a little late, and will probably be just a little behind the great shows. However, this trouble will most likely heal itself as the days pass, and the lovers of this section may not be disappointed.

In regard to the different classes of flowers, it is obvious that the Japanese are still the most showy and the most popular. The incurred and perhaps stiffer-looking flowers are plainly dropping out of a great number of collections, and are hardly ever to be found in quantity, except where required for exhibition. The Anemone section seems rather neglected, and this is difficult of explanation, because the flowers are equally attractive, as are the Japanese, besides adding variety to the collection. Pompons are extremely popular with the general grower, and deservedly so, for their decorative qualities are unequalled.

Novelties are still produced in great quantity, and this year will see many very fine additions to the Japanese section particularly, and to the other sections in a minor degree. The American seedlings continue to give the most novelty, and a greater number of seedlings are raised by home-growers than was ever done before. Reference to many of the newer varieties will be made in another column. Improvement mostly occurs in colour and in refinement of bloom; but we must not forget that several of the American seedlings we have seen bid fair to rival the great Etoile de Lyon in size, but at the same time being very much better in form and finish.

The fruit crop and its results.

RECENT communications to be found in the "Correspondence" columns of this and other journals, as well as conversation with growers for market, point to the fact that a good many growers of fruit for the London market have found this to be a "minus" year, and try to saddle the blame on those who, in many instances, do not deserve it. Apples and Pears, of good, bad, or indifferent quality, have been put upon the metropolitan markets apparently without any consideration as to time place, or price; and because a good result for the grower has not been achieved, all the blame is

placed on the shoulders of the salesmen. It is no rare thing just now to find exposed on costermongers' barrows, at a penny a pound, fruit which a month hence could easily fetch, about treble the money. The salesman must part with his goods, but the grower would have done better by giving them to his pigs. By and by, the man who knows how to keep, and does keep, his fruit, will reap a good harvest—his "reckoning" will once more prove the value of common sense. Nor is it every grower who knows how to pack fruit for market; this work is often done in a disgraceful manner, making one cry "shame," at sight of fine samples, as it were, maltreated by the packer. Such growers and such packers should really be packed off out of the trade—they hurt everybody in it. Again, fruits from our Colonies and Possessions often come to hand in sorry plight; in the early part of the past season, as we noted at the time, many wrecked samples of Grapes were put upon the market at ruinous prices, but they were worth no more; and Apples and Pears, mostly the former, came to hand as if they had been baked. We do not think any enterprising barrow-man was tempted to take them at a gift, as in former days was the case with a consignment of Italian Cauliflowers. A show at the Imperial Institute in early season days showed some of the "reasons why" of faulty consignments, noted at the time in our columns. True, since then, many splendid samples have been placed on the market, which may have had considerable influence in making up the final reckoning. It is astonishing to note how very much the errors of China prevail in Peru; how the Press at the Antipodes try to teach growers for export how and what to grow, how to pack and carry. In time, possibly, our colonial friends will have picked up all the wisdom necessary; if it be any comfort to them, they have the knowledge that there are people in the "old country" still "going to school" at a heavy expense.

We have said that the colonial press does its duty in the matter of teaching, as does the press at home. In days to come, perhaps district and parish councils will find most profitable work in directing the gathering of all sorts of horticultural and agricultural produce, and finding a paying market for the same—not necessarily always in London. We may anticipate a very large increase in the number of allotments taken up and cultivated by the labouring classes—the number would certainly be greatly increased by the action of a body akin to the proposed district councils; and much of what is now grown and marketed at a losing figure might be so "placed" as to satisfy the grower, and act as an encouragement to those who desire to carry surplus labour from town to country. Surely, then, after-harvest reckonings will be more in favour of denizens of the home land than of those separated from us by a strip of sea who load our markets with every possible kind of food products.

PAPHINIA GRANDIS (fig. 93, p. 561).—The Paphinias form a pretty genus, of which but few species are at present in cultivation. In *P. grandis*, the largest and most beautifully coloured of the forms of Paphinia cristata (which is also known as *Lycaste cristata* and *Maxillaria cristata*), we have a species with large flowers, whose petals and sepals are of a creamy-white colour, with intense blackish-purple spots; the column of a pale yellow, and spotted with purple; the lip white and fringed. The plant from which our figure was taken was shown by Messrs. LINDEN, L'Horticulture Internationale, Parc Leopold, Brussels, at the meeting of the Royal

Horticultural Society on the 24th of last month. Paphinias do best in the East India-house in pans or baskets filled with sphagnum moss, peat, and charcoal.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner of the above society will take place at Anderton's Hotel, Fleet Street, E.C., on Thursday, November 30, at half-past six P.M. sharp. Sir

Windsor, in the rooms of the Horticultural Club, by kind permission of the members, on Saturday, October 28, MARTIN R. SMITH, Esq., President of the Society, in the chair. The President, Vice-Presidents, committee, and office-bearers, were re-elected. It was decided to hold the exhibition for 1894 under the auspices of the Royal Horticultural Society, on July 24, 1894. The following alterations were made

of the Society, and it was decided to offer prizes for the best seedlings raised from the seed so distributed in the year 1895. The statement made by the Treasurer showed that the Society was financially successful. The subscriptions as per list amounted to £154 9s. 6d. The amount received for special prizes was £18 17s. 6d.; prize-money distributed, £99 15s. 6d. The balance from last year was



FIG. 93.—PAPHINIA GRANDIS. (SEE P. 560.)

EDWIN SAUNDERS, President, will take the Chair. The Challenge Trophy, Holmes' Memorial Cups and Medals will be presented to the winners during the evening. Members are earnestly requested to make the dinner a success by an early application for tickets, and by disposing of the same to their friends. RICHARD DEAN, Hon. Secretary.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The annual general meeting of the above Society was held at the Hotel

in the schedule:—Two new classes were added of twelve blooms and six blooms respectively, with a growth from the plant to each bloom, and without dressing. It was also proposed, and unanimously adopted, that the class for yellow ground Picotees be judged on the same principle as the white ground varieties; that is, a pure yellow ground with a margin the same as the white ground class, fancies excluded. A distribution of seed has been made to the members applying for it, saved from choice fertilised flowers grown in the garden of the President

£65 10s. 5d.; and the balance at present in the hands of the treasurer is £118 5s. 4d.

ANNUAL MEETING OF THE AURICULA AND PRIMULA SOCIETY.—Held on Saturday, Oct. 28, at the Hotel Windsor, Mr. HENRY CANNELL, of Swanley, presiding. The President, Vice-presidents, committee, office-bearers, &c., were re-elected, the name of J. T. BENNETT-POË being added to the list of Vice-presidents. It was decided to hold the exhibition for 1894 under the auspices of the Royal

Horticultural Society as heretofore, and to offer the same schedule of prizes as last year. The subscriptions, according to the list, amounted to £63; prizes paid, £60 16s.; other expenses brought the expenditure up to £74 1s. 6d., leaving a deficit upon last year's working of £8 16s. 6d., due to the treasurer. If all the members would pay up their subscriptions, this deficiency would be materially reduced, and, with a very little effort on the part of the members, there might easily be a handsome surplus.

A CHRYSANTHEMUM SHOW AT KETTON HALL.—By the kind permission of Mr. and Mrs. Horwood, the gardens and hothouses at Ketton Hall, near Stamford, will be opened to the public on Thursdays, November 2, 9, and 16, at a charge of 6d., from 2 to 5 P.M., in aid of the Royal Gardeners Orphan Fund. The Chrysanthemums are now in flower, and more than 1000 large blooms in various stages of development are to be seen.

ORCHID CULTURE IN BELGIUM AND IN ENGLAND.—The *Journal des Orchidées* for October 15 contains an article by M. LUCIEN LINDEN, in which he compares the English and Belgian methods of growing Orchids. He says of us, that "Our neighbours are, as is well known, excellent growers of Orchids. The splendid specimens and the admirable show of bloom in the collections of the principal English amateurs afford sufficient proof of this. At the same time, I have been struck with certain differences from our methods of treatment, which I consider show the superiority of the Belgian method of cultivating Orchids. The chief difference seems to me to consist in the deficient supply of air and light, and to my mind this is of great importance. In the second place, the plants are usually too dry. Many Orchid-houses in England are half-span, consequently badly lighted and insufficiently ventilated, even those where *Odontoglossums* from the Cordilleras are grown, though these especially require free circulation of the air. The ventilators are too few, too small, and evidently are hardly ever opened. I have sometimes seen them formed of perforated zinc, through which hardly any air passes, and sometimes too little top air is afforded. Almost everywhere I noticed a most objectionable custom, that of covering the stages with a thick layer of coke or charcoal, instead of using open-work stages, which allow the air to circulate between the pots. I also observed an excessive temperature in many houses, especially in those devoted to *Odontoglossums* and *Masdevallias*. Many growers pay too little attention to the supply of light; their houses are darkened, frequently with a rather thick blind. Our lattice-work screens temper the light, and are much to be commended. English growers trust entirely to the resting-season to ripen their plants, and they attach so much importance to this period, that they keep their Orchids extremely dry even during their growth. In England there is not seen that vigorous growth which is shown in plants grown according to the Belgian methods. Orchids are less green, have fewer roots, and have much more slender floral stems. The Belgian cultivators water much more, and give a less long repose, but especially they give more air, and it is chiefly—as M. VAN IMSHOOT remarked before me to an English gardener—air which ripens our plants. M. CARUZAC has also recently drawn a comparison between the English and the Belgian gardener. The Belgian gardener is a more zealous worker, a most attentive observer of the thousand little matters of detail which the inexperienced would consider trifles, but which are really of great importance, he has more thought and interest, he varies his methods, has better taste, and he more readily adopts novelties, but he has not the patience, the trustworthiness (*solidité*), or the punctuality of the English gardener; the latter also knows the names of his plants better, has a better manner, is more particular in his dress and appearance; and is, in short, better educated."

THE GREAT YORKSHIRE GALA.—The annual balance-sheet for 1893 shows a steady increase of funds to the credit of the committee, there being a

reserve fund of £2000, with a further sum of £256 to their credit. The receipts at the gates for the three days amounted to £1850, and from other sources £524 10s. During this year, £250 was given to the York charities, £614 12s. paid in prizes and to judges, £115 12s. for bands, £340 for tents and other fittings, and over £300 in other amusements incidental to the exhibition.

THE GARDENERS' ORPHAN FUND.—A meeting of the committee took place at the Horticultural Club on the 27th ult., W. MARSHALL, Esq., in the chair. The minutes of the last meeting having been read, the secretary reported that the sub-committee appointed to act during the recess, had drawn a cheque for the quarterly allowances due to the children on the Fund, on October 1 last. The following special receipts were announced:—Mr. W. Elphinstone, The Gardens, Shipley Hall, Derby, opening the gardens during the summer months, £11 1s. 6d.; Mr. J. H. Vallance, local secretary, Bristol, legacy by a deceased lady, £3 3s.; Mrs. Bowerman, Hackwood Park, sale of flowers, £1 6s.; Mr. J. Plowman, Woodstock Gardens, Long Sutton, box, 10s.; Mr. G. Tubb, Minley Manor, Farnborough, box, £1 2s.; Miss Barron, Sutton Court Road, Turnham Green, box, £1 11s.; Mr. F. A. Burbury, Highbury, Birmingham, box, £1 16s.; Mr. J. B. Stevenson, Church Cottage, Bournemouth, box, 6s. 5d.; and Mr. C. Sutton, The Gardens, Chevening Park, Sevenoaks, 6s. 6d. The secretary reported the receipt of a cheque for £100 from Mr. N. Sherwood (Messrs. Hurst & Sons), as a jubilee celebration gift by the firm; and a hearty vote of thanks was passed to this generous supporter of the Fund. The chairman reported the death of Mr. Hugh Low, of Clapton, a member of the committee, and a resolution of condolence with Mrs. Low on the great loss she and the committee had sustained, was passed by acclamation. The proceedings closed with a vote of thanks to the chairman.

—What was correctly described in the programme as a grand concert was given at the Surbiton Assembly Rooms, on Wednesday evening of last week. There was a large attendance on the part of the public, and the programme so very admirably provided by Mr. W. FURZE of Teddington, was carried out in the most efficient way. During the evening a very handsome bouquet, most kindly sent for the purpose by the eminent florists of Forest Hill, Messrs. J. LAING & SONS, was by the Secretary, Mr. A. DEAN, presented to the Mayoress of Kingston, in recognition of the Mayor and Mayoress's kindness in giving their patronage to the concert. The large committee of gardeners of which Mr. OSBORN is chairman, and Mr. E. BENNETT vice-chairman, and Mr. FURZE is Treasurer, met on Saturday evening and found after paying all expenses that there was left the handsome sum of 21 guineas, to hand over to Mr. BARRON. The Duchess of ALBANY kindly sent a donation of 20s. to the Fund.

BRUSSELS BOTANIC GARDEN.—On the occasion of the recent visit of H.M. the King of the Belgians to the Brussels Botanic Garden, many very successful sculptural decorations were arranged by MM. CHARLES VANDER STAPPEN and CONSTANTIN MECIERIES. The statues, and many of the plants surrounding them, were symbolical, as well as merely ornamental; and, to add to the effect, the fountains, which had been re-arranged and much altered, were in the evening lighted by the electric light. The scheme was as well carried out as it was ingeniously and artistically conceived, and the result was an entire success.

A SECOND CROP OF PEAS IN SIX MONTHS.—A letter from a person residing at Beverley has been forwarded by Messrs. J. CARTER & Co., Seed Merchants, High Holborn, which contains the rather uncommon intelligence that the writer of the letter in question had gathered from plants, the seeds of which were sown in March, 1893, other seeds which were sown as soon as pulled, and these latter had produced plants from which excellent Peas were

gathered for the table during the last month. The variety was Carter's Lightning; and of the goodness of the Peas we can vouch, Messrs. CARTER having sent a sample to this office.

DEVON AND EXETER GARDENERS' ASSOCIATION.—At a meeting of this Association, held on the 25th ult., a paper, entitled, "Plant Names and their Associations," was read by Mr. ANDREW HOPE. In commencing, Mr. HOPE said that plants have histories and pedigrees that are interwoven with our daily life, our country's history, our customs, and our superstitions. Historic plants and national floral emblems were next described, and their traditional origins enumerated. After referring to symbolic plants, the origin of British plant names was considered, the lecturer declaring that many plants were now known by names the outcome of a graduated course of error and corruption. Local plant names, botanical names, Latin and Greek names, formed further interesting sections.

LEAVES DEVELOPED IN THE SUN AND IN THE SHADE.—Considerable differences are produced when leaves are developed in the shade instead of in the sun, other conditions, such as soil, moisture, &c., being the same. All the vital functions are carried on more energetically in those leaves which are produced in the sunlight. They transpire more abundantly than those produced in the shade, and contain relatively less water; but the circulation is more rapid, and they receive a larger quantity of nutritive substances. Besides these differences, leaves that are grown in the sun are thicker, and carry on a more active respiration, and since they contain a larger quantity of chlorophyll, their assimilation is also more active, and they fix a larger quantity of carbonaceous matter. *Rev. Gén. de Bot.*, iv., p. 481.

LIGHT AND FLOWERS.—The action of light on flowers has always been a fascinating study, and many experiments have been made by which plants have been grown under glass of various colours. Amongst the latest researches in this direction are those of M. C. DE CANDOLLE. He exposed specimens of *Tropæolum majus* and *Lobelia erinus* to the action of light, which had previously passed through a solution of chinchonine sulphate, and had thus been deprived of all rays except the ultra-violet rays. He found that these ultra-violet rays have the effect of greatly stimulating the formation of flowers, but that they are not essential to their development. Further particulars of these experiments may be found in the *Arch. Sci. Phys. et Nat.*, xxviii., p. 265.

SYNANTHY IN ORCHIDS.—Congenital union of two or more flowers is of common occurrence when growth is rapid, and when the buds are very closely packed and pressed upon in the young stage. When this happens, the two flowers become welded into one, some of the flower-segments being usually squeezed out of existence, so that though there may be two flowers concerned, the number of parts present is less than would be the case in two separate flowers. We owe to the kindness of Sir TREVOR LAWRENCE a specimen of *Cypripedium "conco-Laur x,"* in which there are three sepals, two upper, one lower; three petals, one median, two lateral; and two lips. The column also consists of two blended, and more or less distorted. The ovaries also show traces of fusion. A similar Composite flower of *Cattleya Bowringiana* shows traces of the union of three flowers, the whole forming a confused mass of segments, with three lips, and as many stamens.

REBUILDING OF CHERKLEY COURT, LEATHERHEAD.—Cherkley Court, Leatherhead, the magnificent residence of Mr. ABRAHAM DIXON, which was recently destroyed by fire, is now being rebuilt as quickly as circumstances will allow, says the *Builder*. Cherkley Court was, before the disastrous fire which broke out in consequence of the house being struck by lightning, one of the finest residences in the south of England, and commanded a varied

and extensive view over the Mickleham, Box Hill, and Ranmore common. The main part of the house was utterly destroyed by the fire, and almost the only part saved was the fine conservatories, which were practically uninjured. The rebuilding has been commenced, and is now being rapidly pushed forward. The work has been entrusted to Messrs. HOLLANDS & HANNEN, of London. The plans for the restoration of the house have been prepared by Mr. CHAMBERS, architect. A careful examination of the burnt-out building revealed the fact that some of the walls of the house would have to be taken down, though a great part of them were uninjured by the fire. It is hoped that the work will be completed by the end of May. A large staff of men is working day and night to repair damages, the electric light, with which the house was fitted, being used for the night work.

IMMENSE HEADS OF CAULIFLOWER.—There were recently on view at Mr. T. WARMESLEY'S, the City Seed Stores, Lichfield, some very fine specimens of the above, one extraordinary specimen measuring 60 inches in circumference, the curd being very close, and pure in colour. The plants were grown by a Lichfield market gardener, and the variety is Autumn Giant.

HORTICULTURAL LECTURES IN S. WALES.—On Thursday, October 26, at Reynoldstone Gower, S. Wales, Mr. W. MILNER, gardener at Penrice Castle, read a paper on "Hardy Fruit." This is the first meeting of the kind which has been held in the district, and it was largely attended. Mr. MILNER, who is the Secretary of the Association, has arranged to give a series of lectures on matters connected with gardening throughout the district during the winter. The next lecture will be one on "Cottage Gardening," by Mr. T. H. CRASP, of Clyne Valley Nurseries, Swansea.

PUBLICATIONS RECEIVED.—*Bulbs, Tuberos-rooted Plants, &c.* By C. L. ALLEN. (London: KEGAN PAUL, TRENCH, TRÜBNER & Co.)—*Proceedings of the Ninth Annual Convention of the Society of American Florists, St. Louis, August, 1893.*

PLANT PORTRAITS.

- CAMPANULA MACROSTYLIS, *Garten Flora*, October 15.
 CENTAUREA RUTHENICA, *Garden*, October 21.
 LIGUSTRUM IBOTA, *Garden and Forest*, October 11.
 OSTROWSKYA MAGNIFICA, *Revue Horticole*, October 16.
 PENTSTEMON CLEVELANDI, *Gardeners' Magazine*, October 21.
 TECOMA SMITHII X, *Gardeners' Magazine*, October 21; *Journal of Horticulture*, October 19.

CHRYSANTHEMUMS ABOUT LONDON.

FINSBURY PARK is the most northern of any of the parks we have visited; and there can be no hesitation in advising an early visit, whilst the Chrysanthemums are at their very best. This display, whether judged on the whole, or in regard to the individual plants, can be placed second to none. The plants are not arranged so closely as is usual, and instead of the sloping bank, so universally common, the groups are much less formal, and their height varies along the whole length of the house—an advance towards a more natural arrangement. The groups each side are faced with a good belt composed of the Pompon varieties, and where pots might have appeared ugly, some *Aucuba japonica* had been used as a screen. The colouring too, had been studied closely in the arrangement, and the best results to be obtained from the "much-mixing" method was to be seen; but we confess to prefer the "grouping" system, where a few plants of one colour, or of one

variety preferably are placed together, and then the groups arranged with as much care as to harmonize or contrast as is used now. A good span-roofed house has been built since last season, good in many respects, though it might have been better had the gardener been allowed to design his own requirements, as he should be, instead of the whole being settled by the Architect Department at Spring Gardens. Its dimensions are 95 feet long, by 30 feet wide; and, as far as might be judged on the spot, about 25 feet high, very much higher than necessary or convenient for a house in which to bloom Chrysanthemums. In this house are about 2600 plants, embracing about 300 varieties, which include twenty-four new ones that have been added since last season. The plants are very well grown, thick, with good foliage, and the foliage well retained to the base. It is quite impossible to mention all the varieties that are worthy of note, as most of the flowers are quite exceptional in size and quality. Among the newer ones we noticed at their best are George W. Childs, a very rich purple-crimson Japanese; Beauty of Exmouth, large and rather flat blooms, white, with curiously crimped florets; W. A. Manda, and others will be better a week later. Val d'Andorre is very well done, and Florence Davis also will be capital in a few days; Miss Anna Hartshorn, white, and Mons. Tarin, pinky Heliotrope, are both among those much admired. The old white Elaine was as well done as any of them, and it and Eynsford White are not the least attractive of this section. Col. W. B. Smith is not quite as good as it might be, but Edwin Molyneux, Cæsar Costa, a fine purple-crimson; Louis Böhmer, and Duchess of Devonshire, the latter a large white Japanese tinged with rose upon each floret, were all good. The Anemone section is chiefly represented by Delaware, white with yellow disc; and Mrs. Judge Benedict very similar in colour, the disc being also very large and full. Those of the incurved section will be more prominent when these notes are printed, at present they are not quite at their best, and amongst the excellent flowers of Japanese do not make themselves particularly evident. Mr. Melville and his foreman deserve much commendation for their efforts, which have met with so marked success. Finsbury Park is the name of the nearest station, and by means of a tram running from thence, the visitor can ride directly up to the Chrysanthemum-house.

WATERLOW PARK.

From the pleasant position in which this is situate, and the undulating character of the ground upon which the park has been formed, a visit may be made with pleasure and interest. It is easily reached, either by taking an omnibus to the Archway Tavern, Holloway, or by proceeding to Upper Holloway station on the Midland. A short walk up Highgate Hill from these places will soon reveal the entrance to the park, which is almost upon the top. Beside the attractions noticed above, a very nice display of Chrysanthemums has been prepared, and is now exhibited in three lean-to vineries, from which the fruit has been almost removed, though not entirely, and a small greenhouse. The superintendent (Mr. Curle) has not had quite the same conveniences for growing this collection as are enjoyed in some of the larger parks, and it would be unfair therefore to criticise the plants. Until the plants are placed out-of-doors in the spring, there appears to be no other place than under the Vines in which to keep them, and this is not by any means a suitable position. However, the spirit of emulation that is so manifestly noticeable among the growers of Chrysanthemums in the parks, has been quite sufficient in this case to induce the gardener to make the best of the advantages he has. There are some 2000 plants, and they are necessarily placed very closely together. Beauty of Exmouth, J. Shrimpton, and William Seward are among last year's acquisitions that have been secured, but these were not in the best form, and it was among the older varieties that were to be seen the largest and best blooms. Bouquet des Dames was one of these—the blooms were exceptionally good, large, and full. A

plant of Albéric Lunden also had three first-class blooms of capital colour. Alice Bird is a good decorative variety of golden-yellow, and Sunflower, that perfection of same colour, was also in fine condition; Avalanche, Vivand Morel, Edwin Molyneux, Lady Selborne, and Avalanche should also be included among the Japanese, quite worthy of notice. A very good variety of the Anemone section is Mons. Charles Lebosqz; the flower is of good size and form, colour orange-yellow. The incurved section was well represented, and perhaps we ought first to mention the two old varieties George Glenny and the golden variety of same, whilst Mr. Bunn and M. R. Bahuant were also to be seen giving good account of themselves.

CHRYSANTEMUMS AT DOWNSIDE, LEATHERHEAD.

It was a fortunate circumstance that Mr. W. Lee's charming place at Downside, once so famous for its grand collection of Orchids, should have come into the possession of Mr. A. Tate, who has great fondness for flowers, and prizes a garden highly. Hence we may now see there a splendid collection of Roses grown in great numbers, and on a big area of grass in front of the house, an area that even now is being constantly added to. These are specially Mr. Tate's flowers, but all the same he has great liking for Chrysanthemums, and in that respect he is well seconded by his able gardener, Mr. Mease, who has become one of our best growers and exhibitors; and, indeed, is almost one of the oldest, for was he not a great Liverpool grower ere many others of to-day had got out of their teens. Just now there is a very fine show of bloom in a large span-house, where to enable the flowers to be seen to full advantage because they stand up near the glass, a raised pathway is formed all round the house. Of course, Japanese varieties constitute the earliest and most attractive elements in the collection. Later, the incurved forms will be in fine condition. Last year Mr. Mease had at Wimbledon what was admittedly one of the finest lots of these seen all the season. He is not just now quite so expectant with regard to those incurved as last year, for the flowers are both rather lighter in material and later, but it seems impossible that some ten days hence there will be wanting very fine and perfect flowers. Of course, a little pushing on in heat may be tried, but Mr. Mease realises that this is always done at the expense of colour, refinement, and finish in the flowers.

Of incurved forms, M. A. Bahuant is in grand form, so also is Robert Cannell, John Doughty, Lord Alcester, Violet Tomlin, Baron Hirsch, Miss Coleman, The Empress, and Princess Jaculier; indeed, all the best incurveds grown are here in various stages of development. A very marked flower is Noel Pragnell, really a striped Empress of India; the flaking is thin, and not particularly visible at a little distance, but there it is on every petal, and it suffices to make the variety very distinct; the flake colour is apparently reddish-purple.

But the Japanese are in grand form, some flowers being truly wonderful, not merely in size, but in substance. This does not assume that they are superior to other flowers, but they are at least very fine. Not nearly so large as some of the new ones, but a singularly perfect and beautiful flower is the new Japanese incurved Robert Owen; this is flattish in form, the outline complete, the colour a very rich gold, free from shading, and it is, indeed, a truly striking and attractive variety. But of spreading forms, Beauty of Exmouth bids fair to make one of the flowers of the season; it is large, full, pure white, and fully justifies Mr. Godfrey in his contention last season as to its great excellence. Charles Rey has broad flattish flowers, not unlike Louis Böhmer, minus the hairs. G. E. Schwabe bears out its reputation of last season for bulk; W. H. Lincoln is very large, and of such a glorious yellow; Lord Brooke is of the Robert Owen form, much less striking, but still a perfect golden-bronzy flower; Vice-President Darquier, reddish-pink; and Vice-President Audiguier, reflexed pink, seem to be sports one from the other, the new golden-

bronze Vivand Morel; Charles Davis is well represented here, indeed, it is rather of a reddish-bronze. All the same, it can hardly make so striking a flower as does its grand type. That is, of course, in abundance and finish. The new crimson, W. H. Seward, promises to be the finest of its telling colour, and we should like to see these dark hues increased, for the bronzes are becoming too numerous. Excelsior is a fine reflexed form, the petals magenta, with white reverse. Colonel W. B. Smith, Stanborough Dibben, Sunflower, Eynsford White, Stanstead White, Albéric Lunden, E. Molyneux, with many others of older date, are all in fine condition. A very rich yellow reflexed is Edwin Beckett, but it will only make a front-row flower. One of the biggest new flowers is Mrs. Harman Payne, blooms 10 inches across, petals rosy-magenta, with white reverse. Eda Prass is another monster, colour pale pink or peach. On one plant that got accidentally broken down in May last, and new growths had to be taken, there is now at just over 3 feet in height a couple of giant flowers. It seems evident that even the Etoile d'Yon form is likely to be eclipsed for dimensions this season, but with much better quality. Mr. Mease's first show effort will be made at Kingston on the 7th, when he will try his best to retain the Challenge Vase, which he now holds, and for which a severe fight is looked for from the three competitors, Messrs. Tate, Bryant, and Collia-Browne. Mr. Mease has in a frame one of the finest lots of double Chinese Primroses, some sixty plants in large 32-pots, and carrying grandest heads of bloom I have seen. He has also a brilliant lot of zonal Pelargoniums in bloom, a big collection of winter and Malmaison Carnations, some fine Cliveias, and a big batch of seedlings, three years old, from a first-class stock, from which something good is looked for. *A. D.*

VICTORIA PARK.

One of the first of the London parks to offer to the public an annual display of Chrysanthemums, the show at Victoria is again worthy of praise. The plants are well grown, and many of them carry blooms which, if not exceptional, are quite up to the average both in colour and size. There are something like 2500 plants, including 300 varieties, and they are displayed in the large span-roofed house, which has been used for the same purpose for several years past. In grouping there has been no departure from the usual bank system, but in regard to the arrangement of the colours, much taste has been employed, and it was particularly noticeable that the general quality of the blooms, as well as the artistic disposition of the colours, was much appreciated by the visitors—always demonstrative of their enjoyment, and in language differing very much less in enthusiasm than in the degree of refinement manifested in its expression. In noticing those that were specially attractive a week ago, that fine cerise Japanese Gloire du Rocher is most fresh on the memory. It appeared here as well, if not better than we have seen it anywhere this season. Mrs. F. Jameson also was good, and Val d'Andorre on stiff sturdy plants, particularly so. The blooms of William Tricker, one of the finest of the Japanese, were deep, and well-coloured; and Edwin Molyneux was represented by blooms of the first order. Col. W. B. Smith, though of good colour, was not quite up to proper size; but Peter the Great and Edouard Audiguier were very good, as were also Jeanne d'Arc, Gloria Mundi, and Queen of England.

The incurved section was also up to exhibition form, and rather earlier than in some other of the parks. Lord Wolseley, White Beverley, Mr. Bunn, Prince Alfred, and Mrs. George Rundle, were the most prominent. Mons. R. Bahuant was quite at its best—almost past it, but the blooms had been very good. Mr. Gibson and his grower, Mr. Large, have every cause to be satisfied with the result of their efforts. The show is quite at its best, and visitors should proceed to Cambridge Heath station, on the Great Eastern Railway, from which it is only distant a quarter of a mile.

HOME CORRESPONDENCE.

A ROSE-COLOURED CALLA (RICHARDIA "DE WAAL," HORT. KRELAQE).—In his interesting notes on *Richardia Lutwychei*, Mr. N. E. Brown mentions several new Callas not yet introduced into cultivation or unknown to practical gardeners. "I know," says Mr. Brown, "one that has the margins of the spathe more or less tinted with rose. This, I have reason to believe, is just introduced into cultivation, but I have not seen an actual specimen of it, unless it should prove to be *R. Lehmanni*, which was sent to the Cambridge Botanic Gardens some years ago as a rosy variety of *R. æthiopica*, although under the English climate no rosy colour was developed—at least, in the only specimen I have seen" (*Gardeners' Chronicle*, 1893, i., p. 568). Last June our firm received from South Africa a *Richardia*, said to be quite new, and producing flowers of a rosy-red colour. This *Richardia*, which a few days ago produced its flower, proves to be quite distinct from all species of *Calla* hitherto introduced. The leaves are not sagittate, with basal lobes as in all other Callas, but lanceolate, $11\frac{1}{2}$ to $15\frac{1}{2}$ inches long, and 2 to $2\frac{1}{2}$ inches broad, bright pale green, without spots. The petioles are $7\frac{1}{2}$ to $11\frac{1}{2}$ inches long; the scape measures $15\frac{1}{2}$ inches; the spathe is $4\frac{1}{2}$ inches long, and of a much more elegant shape than in *R. albo-maculata*; the colour of the spathe is white, tinted



FIG. 94.—RICHARDIA LEHMANNI? SPATHE ROSE-COLOURED.

with soft rose on both sides, but especially outside. The bud shows a well-marked rose colour, so that one expects to see a rose flower; when expanded, the colour proves to be changed into white with a pale rosy tint. The spadix, with the male and female parts, are nearly of the same structure as in *R. albo-maculata*. It is quite evident that the plant described above represents an entirely new type of *Calla*. The species in question, which was first brought under our notice by Mr. De Waal, from South Africa, is not so showy, perhaps, as the *R. albo-maculata* and the common *Calla*, but the introduction of this new species proves that there may be shortly expected a revolution in garden Callas, as most probably it is not the only species of the type with lanceolate leaves and rosy coloured spathes. *Ernst H. Krelage (E. H. Krelage & Son), Haarlem, October 26, 1893.* [Pending the botanical examination of the flower, we deem it better to call this plant De Waal's *Richardia*, and not to give the Latin termination till the botanical history is cleared up. *Ed.*]

THE GARDENERS' ORPHAN FUND.—If I am rightly informed, it was reported at the last meeting of the committee that the card collection among the gardeners of the United Kingdom had, up to the present time, realised something under £30, probably hardly covering the cost of issuing the cards. In the face of the large number of gardeners in the kingdom, the result must be most disheartening to the committee on whose shoulders falls the burden of the work, and who have to take upon themselves heavy responsibilities. It is not

creditable to the craft that such a miserable result should flow from several thousands of applications. A very large number of the gardeners of the United Kingdom are married men with families, and any one of them may be stricken down to-morrow, leaving a wife burdened with a family of children. There is not a widowed mother who is to-day in receipt of 5s. weekly for one of her children who does not bless the labours of those by whom she is in receipt of this sum, and yet it does appear that there is a great lack of sympathy on the part of the gardening profession with this most deserving charity. *One of the Founders.*

LIQUIDAMBAR STYRACIFLUA.—The present season has been a capital one for observing this deciduous half-tree in its true character. The rich colouring which the leaves assume in the autumn has been developed this year to the utmost, and when seen at its best this tree shows itself to be one of the finest hardy deciduous subjects we possess. Soil that is heavy in character does not induce an extra free growth; light loam or a sandy soil, even if it be peaty, are generally more the kind of soil to its liking. *E. M.*

BATAVIAN ENDIVE.—Under the name of Endives Belges, this can be obtained as a vegetable, cooked like Seakale, at the best restaurants in London. It is even finer as a (bitter) vegetable than raw, and it can be preserved. *D.*

LATE PEAS AND ROSES.—On casually looking into the volume of the *Gardeners' Chronicle* for the year 1852, in a notice of a meeting of the Horticultural Society of London, held in the society's rooms, Regent Street, Oct. 16, several things were observed to have been shown, which points to that year being as warm, at least the autumn season, as this year. There were six dishes of Peas shown, five being English, and one foreign. The English consisted of Knight's Marrow, in every respect excellent. Mr. Evershed, market gardener at Godalming, showed an equally excellent Long Jonquil, a first-rate but little-known Pea. Other Peas were Early Warwick and Great Britain, a large-podded variety. Knight's Marrow was furnished by Mr. Culverwell, gardener then as now at Thorpe Perrow, Yorkshire. As showing the mildness of the weather, Mr. Francis, nurseryman, Hertford, showed blooms of the following Roses, Bourbon Queen, Jacques Laïtte, Mrs. Bosanquet, La Reine, Devoniensis, Géant des Batailles, Bougère, Belle Allemand, Rambuteau, Elise Sauvage, Dr. Marx, Marquis of Ailes, Saffranot, Comte de Paris, Souvenir de la Malmaison, Baron Prevost, Standard of Marengo, Marquis Bocella, Cloth of Gold, and Dupetit Thouars. Good Roses, all of them, but including some that have had to make room for their betters in the forty-one years that have elapsed since 1852. Of the Peas named above, Early Warwick alone remains in seedsmen's list, and that variety will soon be superseded by better ones. *Looking Backwards.*

HEAVY PEARS.—I have just taken the crop of Uvedale's St. Germain Pears from an old horizontally-trained tree on a south-west wall. The weight of six of the largest fruit individually and in the aggregate is worth recording, viz.:—No. 1 fruit, 2 lb. $3\frac{3}{4}$ oz.; No. 2 fruit, 1 lb. 12 oz.; No. 3 fruit, 1 lb. $11\frac{1}{2}$ oz.; No. 4 fruit, 1 lb. $7\frac{1}{2}$ oz.; No. 5 fruit, 1 lb. $3\frac{1}{2}$ oz.; No. 6 fruit, 1 lb. $2\frac{1}{2}$ oz.—Total, 9 lb. $8\frac{1}{2}$ oz. The tree had not borne any fruit for many years, and the present crop is not a large one, but the fruit is very fine and clean. Raspberries were picked here last week (both for tarts and dessert) wonderfully clean and good. Truly an extraordinary season. *J. Lawrie, The Gardens, Maristow.*

AUTUMNAL TINTED TREES.—The autumnal tints this year are strongly marked, and some charming shades of colour, and contrasts as well, are to be met with now in so many of our ornamental trees. I am particularly struck with the rich beauty of the foliage just now of a fine specimen of the deciduous Cypress (*Taxodium distichum*) on a lawn, with its rich brown-coloured foliage, a conspicuous object amongst other foliage in decay. Liquidambar styraciflua is very ornamental at this season, with its crimson foliage. There is great beauty in some of the Thorns at this time of the year, when the trees are loaded with fruits, and the foliage is dying, and Oaks, Elms, Limes, and Ash have striking tints, as have *Rhus cotinus*, *R. xtyphina*, *Spiræa arifolia*, *Zizyphus paliurus* (the Christ's Thorn), and the bright-wooded *Corpus* (*D. g. woods*). *W. D.*

GOLDEN QUEEN AND MRS. PEARSON GRAPES.—Owing to the long period of heat and sunshine which prevailed this year, fruit has been of an unusually high colour, and especially white Grapes; the berries of Golden Queen and Muscat of Alexandria acquiring an amber colour before the month of August expired, Mrs. Pearson taking on the same colour a little later. Golden Queen, when well-grown, is a beautiful Grape, and of fairly good quality. The finest bunches that I have seen of it were staged at the Edinburgh Show in September, 1885, by Mr. David Murray, gardener at Culzean Castle, Maybole, Ayrshire; and Mr. J. Hammond, gardener to Sir Wilfred Lawson, at Brayton, near Carlisle. The bunches shown by Mr. Murray, were long and solid. The oval-shaped berries of fine size and finely coloured. The Brayton specimens were not quite so large in bunch, but in every other respect they were the equals of the Culzean Grapes. The same autumn Mr. Murray kindly sent me a shoot of Golden Queen Grape, which I grafted on a young Vine of Muscat of Alexandria at the east-end of the Muscat-house, thereby effecting an improvement in the flavour of Golden Queen—an improvement which, in my opinion, is sure to follow in the produce of all Vines (not Muscats) worked on the Muscat of Alexandria. Golden Queen is a strong grower, a good bearer, and a free setter, doing well under the treatment bestowed upon Muscats, and requiring the berries to be thinned-out well. Sometimes the golden transparency which characterises all well-ripened bunches of this Grape become slightly clouded a week or two after the berries have acquired the much-desired colour, thereby detracting somewhat from the appearance of the bunches. This clouding of the berries, however, may be averted for a few weeks, if not altogether, by a warmish, well-ventilated air in the vinery. Good examples of Golden Queen find a ready sale in the shops, being asked for by customers in preference to Buckland's Sweetwater and Foster's Seedling. Mrs. Pearson, like Golden Queen, was raised by Mr. Pearson from Black Alicante, crossed with Ferdinand de Lesseps, and he obtained First-class Certificates for both varieties—Mrs. Pearson in 1873, and Golden Queen the following year. It is certainly the best flavoured late white Grape with which I am acquainted, partaking strongly of the flavour of Muscat of Alexandria. It is a free-growing variety, the bunch is well-shouldered and tapering, from 12 to 14 inches long, and from 6 to 8 inches in width at the shoulders. The berries are of a yellow colour, and measure nearly 3 inches in circumference; the skin being somewhat thick, the berries keep in good condition for a longer time than other white or amber-coloured Grapes. In point of flavour it is but slightly inferior to that of the Muscat of Alexandria. I intend to grow more of these two varieties by engrafting them on established Vines. *H. W. Ward, Longford Castle.*

A RECIPE FOR A WINTER DRESSING.—Vines and Peaches, Plums and Cherry trees, may be dressed with the following:—1 lb. of sulphur, 1 lb. of tobacco-powder, 1 lb. of soot, 2 lb. of clay or stiff loam, 1 lb. of paraffin-soap, and 3 oz. of nux-vomica powder, put into a pail, and well mixed together, then put boiling water with these sufficient to make it about the thickness of ordinary paint, covering it over for twenty-four hours. It can be used on the stems and shoots of Vines and fruit-trees against insects of all kinds, and as a preventive of mildew. *W. Smythe.*

NURSERY NOTES.

THE "OLD" NURSERIES, MAIDSTONE.

AFTER travelling some 400 miles to attend the Great Fruit Show in the Agricultural Hall at Islington on August 29, for which ample reward was had in viewing the magnificent and instructive display set before the public on that occasion by the Royal Horticultural Society, resolved to find a day before returning home to carry out a long-cherished wish to visit the Fruit Tree Nurseries of Messrs. George Bunyard & Co. at Maidstone. I wished to learn all I could about the treatment the trees received to produce such grand specimens of large, handsome, high-coloured, and perfectly-finished Apples and Pears.

Passing through the wide villa zone which skirts the metropolis on this side, the country assumes a more charming aspect, and in many of the pleasant

retreats that so thickly stud the Beckenham district of Kent, and for miles onwards, the inhabitants may quietly dream they are a thousand miles away from the busy stir of city life. The rural aspect of the country increases as Bickley and St. Mary Cray stations are passed without stopping; and on the way to Sevenoaks we can leisurely note the condition of the farm and garden crops, and observe with regret their parched and miserable condition, from the long and severe drought of the past summer. The meadows seemed as bare and brown as a turnpike road, and grain and root crops were of the most wretched description, the Potato fields being the only fair exception, but they were too few to go far to redeem the great loss the farmers must suffer by the failure of their other field crops. It was, however, a pleasing feature to notice how well the fruit trees in gardens and orchards were thriving and bearing splendid crops, in the midst of all the disasters to other crops around them, arising no doubt from the depth of their roots in the soil, which renders them much less liable to suffer from want of rain and a parching atmosphere. Leaving Sevenoaks, we soon begin to observe that the orchards in "the Garden of England" are receiving more care and attention from their owners than what was apparently customary in bygone times. Old orchards are being cleared of small and worthless varieties of fruit, and the best and most productive of new kinds are being planted to replace them. A considerable extent of fresh land has been recently planted with thrifty young fruit trees in the famed Hop country around Malling, and it was interesting to notice how well both orchards and Hop-gardens were thriving in the hands of skilful and competent men, and producing crops of the finest quality in the greatest abundance; while on the other side of the hedge, where *laissez faire* was apparently the watchword, the dilapidated and exhausted condition of the orchards, starved Hop-gardens, and all-round wretchedness, bespoke a want of intelligent enterprise to march with the times, which is certain to end in great loss and poverty to those concerned. As we approach Maidstone, orchards and fruit gardens, both renovated and new, seem to increase and flourish more and more, till we arrive in the rich valley of the Medway, which at the present day may be deemed the English fruit grower's paradise, since from one part or another of it, and especially from near Maidstone, have come the grandest samples of hardy fruits which have adorned the exhibition tables throughout the country for the last decade.

Here, then, in the very centre of this rich fruit country, Mr. George Bunyard, the sole partner in the business, has, by untiring enterprise and skill, raised up the immense fruit tree establishment which has made the name of "Bunyard of Maidstone" a household word. A careful student of Nature, and a most skilful pomologist, Mr. Bunyard takes the keenest interest in the cultivation and correct nomenclature of his stock of fruit trees, growing at Allington on over 100 acres of ground. This nursery lies about 2 miles north-west of Maidstone, and adjacent to Barming station on the L. C. & D. Railway, where visitors to the fruit tree nursery should alight, to save the long walk or drive from Maidstone. The fruit trees being the object of my visit, no time was lost in driving out to Allington, where I was accompanied by Mr. Bunyard over the whole of the vast collection of fruit trees. The site of the nursery is open and exposed, lying high above the valley of the Medway, and the north-easterly gales from the German Ocean are often severely felt in winter and early spring, so that the hardiness of everything grown here is thoroughly tested, and may be depended upon in any moderate climate. The soil is of a light loamy nature, freely mixed with gravel, and by no means appears to be specially adapted to successful fruit growing; but being of considerable depth, and highly amenable to good cultivation, the result of skilful management is really astonishing to those accustomed to deal with soils of a different staple and more body. Mr. Bunyard has a firm and well-founded belief in a

thorough cultivation of the soil, and due attention to every detail which tends to insure a healthy and vigorous growth, in all of which he is ably seconded by his foreman, Mr. Bush.

Starting for a tour of the fruit-tree quarters, I was immediately struck by the health and vigour of the stock, on which it is difficult to find any signs of disease or insect attack. Neither are weeds or filth of any kind allowed to encumber the ground, to the detriment of the crops, but everything is as clean, and in as well-kept order as in the best private garden in the country. The trees have all sufficient space allowed them in the rows to make vigorous growth, while between the rows the width is three feet or more, to allow air to pass freely, and for the convenience of getting at every plant to attend to its wants at the proper time. The wide space between the rows is deeply stirred and kept clean by pony or horse power, which economizes labour, and keeps the soil in the most perfect state of tilth, so much so, that in walking along between the rows the foot sinks deeply in the pulverized soil, and on repeated trials in various places, we easily drove our boot clean out of sight in the friable, mellow soil, in which everything appears to grow luxuriantly. To this thorough tillage and free circulation of air, more than to stimulating manures, Mr. Bunyard ascribes the remarkably sturdy vigour of his stock.

Large quarters of maiden and trained Peaches and Nectarines were seen, comprising hundreds of fine-trained trees of all the popular varieties, as well as quantities of new or less-known varieties, all growing in the most perfect condition. Apricots were equally healthy-looking, clean-grown, and well-trained; in prime condition for planters when the season came round. Plums and Cherries are grown in immense numbers, on all manner of stocks suitable for different soils and purposes, and all in vigorous health and perfectly clean.

Among Plums, the ever-popular Victoria is grown in greatest numbers, but Jefferson, Coe's Golden Drop, Pond's Early Prolific, Kirke's, and many other of the older kinds, are also extensively grown, as well as several varieties of Damsons, especially the Farleigh variety, which originated in the district. Nor are the newer Plums omitted, as every variety worth cultivating in Britain is more or less numerously represented, according to its merits and the demand for it. Large numbers are specially grown for orchard standards on 6-foot stems, among which the Kentish Diamond is a local favourite, from its vigorous habit and free-bearing qualities in the county of Kent. Cherries are a specialty in Kentish orchards, and the demands of growers are amply provided for in the large extent of stock of all suitable kinds, which are so well grown here. The fruit on both Plums and Cherries was nearly over at the time of my visit, but what was left showed the prolific nature of the young trees, and the high quality of the fruit. It is astonishing how fruitful the young trees are in this nursery, and the revenue from the fruit alone must be a considerable item in the annual returns from a large proportion of the ground occupied by the two and three-year old fruit trees, which form probably two-thirds of the whole stock, youth, vigour, and fertility being its chief characteristics.

It is, however, among the Pears and Apples, occupying scores of acres of land, that the precocious fruitfulness of the stock was most evident at the date of my visit. Quarter after quarter, with thousands of trees in vigorous health growing upon them, was passed in review, in which the splendid crop of the finest fruit was the most conspicuous feature. Among Pears, Pitmaston Duchess, Williams' Bon Chrétien (nearly past), Dr. Jules Guyot (larger and finer than Williams' Bon Chrétien, to which it bears considerable resemblance), Souvenir du Congrès, Doyenné du Comice, Beurré Clairgeau, Beurré Hardy, Beurré Diel, Beurré Bosc, Durondeau, Conference, Marie Louise, Louise Bonne de Jersey, and numerous other well-known varieties, were hanging on cordons, bushes, and pyramids, like strings of the largest Tripoli Onions, the size, colour

and quality being of the best. Among the newer Pears bearing fruit, Mr. Bunyard specially mentioned Dr. Jules Guyot, Marguerite Marrillat, Fondante de Thirriott, and Beurré Mortillet, as superior varieties that are likely to prove valuable additions to the choicest collections.

In the Apple quarters, which may truly be said to form the chief feature in the nursery, as they are spread over the entire length and breadth of it, the vigour and fertility of the young trees reached its climax. Whatever the cause, high culture, climate, soil, site, manure, or favourable season, or all combined, the quantity, size, and quality of the produce was a marvel of success. Numerous quarters of the choicest varieties, Cox's Orange Pippin, Ribston Pippin, Worcester Pearmain, King of the Pippins, The Queen, Lane's Prince Albert, Blenheim Pippin, Ecklinville, Gascoyne's Scarlet, Duchess of Oldenburg, Golden Spire, Cox's Pomona, Cardinal, Lady Sudeley (about over, but brilliantly coloured), Potts' Seedling, Wellington, Lord Suffield, Lord Grosvenor (more vigorous than the preceding and equally prolific), Bismarck, Cellini, Royal Jubilee (a handsome and promising variety), Warner's King, Winter Hawthornden, Stirling Castle, Frogmore Prolific, Baumann's Red Reinette, Queen Caroline, Mère de Clénage, Beauty of Kent, and a host of other excellent varieties too numerous to note, were heavily laden with splendid fruit, on trees of all shapes and sizes, from two to four years old, and many of the older bush trees were literally borne to the ground with the load they carried, although they had all been thinned to allow the fruit to attain its full size. Nor did the trees seem in the least distressed by the loads they were carrying, as they were all in robust health, and had made a free vigorous growth, well ripened, and thickly set with fruit-buds, giving promise of as great an abundance next season.

Mr. Bunyard mentioned that next to Worcester Pearmain, which at present is the Apple greatest in demand by planters, Golden Spire was being most asked for, it having proved a remarkable free-bearer everywhere, and a favourite market Apple.

A considerable space has been set aside in the highest part of the nursery, on which Mr. Bunyard is forming a permanent collection of all the best varieties of Apples, worked on all the different kinds of stocks, to be grown as bush trees, to fully test their durability and continued fertility. The collection was only begun to be formed about two years ago, but the success which it has already achieved, promises to add greater interest to it year by year as the trees develop their merits and peculiarities, and arrive at a state of full maturity. All the varieties already mentioned, and many others, are here seen on their trial, and the merits and demerits can be readily compared and noted by those anxious to acquire information. Such prolific varieties as Cox's Orange Pippin, here one of the most fertile and unrivalled in quality among dessert Apples; King of the Pippins, Worcester Pearmain, Lane's Prince Albert, Stirling Castle, Yellow Ingestrie, Golden Spire, Lord Suffield, Cellini, Red Reinette, Frogmore Prolific, Grenadier, and other free-bearing kinds, are already paying well for the ground they occupy, and they form a most interesting "object lesson" to the aspirant in hardy fruit culture. It is evident to the most ordinary capacity that well-directed skill, based on sound knowledge, has had much more to do with the excellence of the fruit grown and exhibited by Mr. Bunyard at the fruit shows in the country in recent years, than any natural surroundings or advantages of soil or climate, although these are undoubted factors in the successful cultivation of hardy fruit.

With such a soil and climate as prevail in the valley of the Medway, orchard-houses are at a discount, and Mr. Bunyard's finest fruits are the produce of skilful cultivation in the open air.

The few glass-houses in the Allington Nursery are devoted to the growth of new and rare kinds of fruit of a tender nature; and to a well-grown collection of the best Figs, Peaches, and Nectarines, part grown in pots, and the remainder planted out.

I cast a hurried glance over the wide breadths of

vigorous and clean stocks for the various kinds of fruit trees, and the lately-budded quarters, all done by "piece-work," in the neatest and most business-like manner, to the extent of how many "hundreds of thousands" few people can have any idea of, and scanned acre after acre of one-year-old trees, all growing at the regulation distance of 3 feet between the rows, clean and vigorous in growth, and of such a robust and well-furnished character, and so straight in the lines as to present the appearance on looking along the rows of so many neatly-kept hedges, from 4 to 5 feet in height. The skill and pomological knowledge of Mr. Bunyard were evident at every step, and I was not surprised when told that he personally inspects every fruit tree in every row in this extensive nursery twice a year at least, to detect "rogues," if any, and to make sure that every variety is in its best form, and true to name. The first inspection is made in the early summer, when the growth and foliage are fresh, and fully developed, and exhibit the natural characteristics by which so many of them are easily distinguished by the well-trained eye; and the second in the autumn, when the fruit has about reached its full-size and maturity, when every variety is carefully examined, and its merits or demerits as carefully noted for future use. *M.*

ECKFORD'S NEW PEAS.

I had heard so much about the great breadth of ground for Peas at Wem as to be somewhat sceptical as to the truth of the statement, but I took a journey to Wem some little time since, and found 5 acres devoted to the sweet and culinary Peas already sent out and to be sent out.

Of the culinary Peas, a variety named Wem will make a reputation, for it is in every way a very fine Pea, of moderate height, with a long well-filled pod, and a plentiful cropper. Critic is another first-class Pea, 5 feet in height, early, and most prolific. Aston Gem is a Pea of the very first quality, about 3 feet high, and a great cropper—a Pea that will make its way. Rex and Armorial are two other high-class Peas, and so also is Chieftain. Mr. Eckford has made Ne Plus Ultra and its progeny the pollen-bearing parents, with a view to secure square-ended pods of large size, and of Ne Plus Ultra quality, and so far as can be judged of a batch of seedlings under trial, and to go through further ones, very early Peas of Ne Plus Ultra quality were being secured. Thin sowing is adopted here, and in the Wem Peas a branching habit has been aimed at, together with obtaining pods in pairs instead of singly, and it was surprising to see the large numbers of full-sized pods on a single plant. Of varieties already sent out I specially noticed as first-class, Epicure, Censor, Superabundant, and Consummate.

It was on a hot day that I had a run through the Peas, and the great variety seen there was somewhat bewildering, for the character of each variety was well shown in the long rows and masses of colour, and with these, as with culinary Peas, thin sowing, or rather planting, is the rule. Foremost amongst new kinds to be introduced are Duchess of York, white, striped with pink; Duke of York, bright rosy-pink, the entire flower being suffused with a primrose tint; Meteor, bright orange, tinted pink, with a purple flush suffused over the flower; Eliza Eckford, blush, with a rosy-purple stripe, and pink margin; and The Belle, a very pretty variety. These are all acquisitions, the flowers of good size and improved form; and in these, and the newer varieties sent out lately, the flowers are more numerous on the stalks than on the old kinds. Of the more recently-introduced kinds, the following struck me as exceptionally good, viz., Stanley, Lady Penzance, Blushing Beauty, Peach Blossom, Venus, Emily Eckford, Ovid, Royal Robe, and Firefly; and of still older and better-known varieties, the following were very fine, viz., Mrs. Sankey, Apple Blossom, Orange Prince, Mrs. Eckford, Lemon Queen, Senator, Dorothy Tennant, Mr. Gladstone, Monarch, Cardinal, The Queen, and Imperial Blue. *Commercial.*

ORCHIDS AT MESSRS. JAS. VEITCH & SONS.

Clean, healthy, and well-rooted specimens of all the best Orchids are always to be found at the Royal Exotic Nursery, King's Road, Chelsea, and with the never-failing show of flowers in the Orchid-houses, some rare species or hybrids are always to be met with. The very warm and long summer was of great benefit to the Orchids, and strangely enough *Odontoglossums*, and more especially to *O. triumphans* and *O. crispum*, which Mr. Canham—who has had the cultivation of the Orchids under his care—says that during the twenty-three years he has had charge of them the plants have not made such progress in any like period as during the last six months.

In the Cattleya-house all the larger-growing species of Cattleyas and *Lælias* promise well for bloom; and at the present time a beautiful display is made by numerous selected fine varieties of *Cattleya labiata*, some of the dark forms of which have rich purplish labellums, the colour extending over the side-lobes; the light-coloured varieties are likewise very pretty. *Cattleya Bowringiana* does well here, and the forms now in bloom vary in hue from lilac to purplish-crimson. The possibilities of its usefulness to the cross-breeder were shown in the beautiful *Cattleya* × *chloris* raised and flowered by Messrs. Veitch, and illustrated in the *Gardeners' Chronicle*, October 28. The beautiful new *Lælio-Cattleya* × *Pisandra* (*Lælia crispa* × *C. Eldorado*), *L. c.* × *Cassiope* (*L. præstans* × *L. c.* × *exoniensis*), and the beautiful *Cattleya* × *Harrii* (*Leopoldi* × *Mendeli*), are also in bloom, the last-named proving to be one of the finest of garden hybrids yet raised; its delicately pink-veined sepals and petals and large carmine-crimson labellum, constituting a noble flower.

Other noteworthy plants in the large Cattleya-house were *Lælia Dormaniana* with many flowers, *Lælia* × *elegans*, *L. autumnalis*, and *Lycaste Skinneri alba*. A fine lot of the white varieties of *Lælia* aneeps will soon come into bloom. The Orchid rockery-house is bright as ever, the rock, clad as it is with *Ficus minima*, and planted with Ferns, being not only effective but having a beneficial effect on Orchids. At the present time there are many spikes of graceful forms of *Oncidium Forbesii*, *O. prætectum*, *O. varicosum*, *O. pulvinatum*, *O. cheiroporum*, *O. aurosum*, *O. tigrinum*, and other *Oncidiums*; indeed the show may be said to be of *Oncidiums*, though there are in bloom plants of *Lycaste Skinneri*, a *Cologyne barbata* with fifteen spikes, *Odontoglossum Lindenii*, *Cymbidium* (*Cyperorchis*) *elegans*, *C. Mastersii*, &c., arranged with them. Passing through the houses where are the *Vandas* and *Aérides*, the excellent condition of which is remarked, we come to a house in which a very handsome display of flowers is noted, chiefly of *Dendrobium Phalaenopsis* *Statterianum* and *D. P. Schroderianum*; and scattered amongst them were flowering plants of *D. Dearei*, *D. album* (aqueum), *D. bigibbum*, some very fine *D. superbiens*, *D. undulatum*, some grand ones of *D. formosum giganteum*, *Miltonia Roelzii*, *M. R. alba*, *M. Bluntii* var. *Lubbersiana*, and the most beautiful form of *Phalaenopsis Esmeralda* we have ever seen. The lower halves of the sepals are bright yellow, the rest of the segments lilac; the lip is purplish-crimson at the tip, the base white, and the side-lobes reddish-brown, altogether a novel and striking contrast of colours, and far removing this particular specimen from the imputation of insignificance under which most of this species suffer.

Among the *Cypripediums* in bloom we found *C. × T. B. Haywood*, always a fine flower; *C. × Ianthe*, a noble hybrid of *C. villosum*; *C. × Arthurianum pulchellum*, a far more beautiful flower than the old form; *C. × ceanothum superbum*, still a favourite; *C. × Charles Canham* and *C. × Mrs. Canham*, two of the most stately of hybrid *Cypripediums*; the pretty white *C. × Cleola*; and the still more charming wax-like *C. × Clonius* (*conchiferum* × ♀, *caudatum Wallisii* ♂), which obtained a First-class Certificate at the last meeting of the Royal Horticultural Society. With these were the usual forms of *C. insigne*, *C. × Swainianum*, *C. ×*

cardinale, and a number of others of the *C. × Sedeni* type; *C. × Ashburtoniæ majus*, *C. × macrochilum*, *C. Godefroyæ*, and a fine batch of *C. Spicerianum*, one of the varieties being a very fine and distinct form.

Among good examples of other things in flower were *Maxillaria grandiflora*, *Trichosma suavis*, with many spikes of its fragrant white and purple flowers; *Masdevallia bella*, *Aérides Lawrenceanum*, *Cologyne Massangeana*, *Oncidium ornithorhynchum*, and many plants of botanical interest.

FLORISTS' FLOWERS.

CHRYSANTHEMUM SPORTS.

WHETHER we shall ever know the reason why the *Chrysanthemum* sports, and be able to control them, is not the question which I purpose taking up in this paper. Much has been written on the subject, but I cannot see that we are very much nearer a solution than was the case twenty years ago. My object is to place in a concise manner the names of the principal varieties and their origin, so that readers of the *Gardeners' Chronicle* may see at a glance whence those varieties came.

From conversation with several enthusiastic cultivators of the *Chrysanthemum*, it is easy to learn, that in spite of all that has been written on the subject of the introduction of varieties, there still exists a considerable amount of ignorance of the facts and history of certain varieties. The only distinction which I know to be found in sports of one group of *Chrysanthemums* (with two exceptions) is in the colour of the flowers. The same habit of growth, and, I might also say, a similarity of bloom as those of the parent, exists in all sports. It is most difficult indeed to distinguish one variety from another by the stems or the leaves, when both belong to one group—in fact, I think it is impossible so to do; not, however, is it difficult to distinguish one group from another group, this being a very easy matter to anyone with only a slight knowledge of the *Chrysanthemum* under cultivation. The two exceptions, and they are notable ones, where there exists a difference in the formation of the flower from that of the parent, is in the case of *Mrs. Horril* from *George Glenn*, obtained some years ago. The latter variety is, as nearly everyone knows, a primrose sport from *Mrs. G. Rundle*. *Mrs. Horril* is a distinct reflexed flower sprung from an incurved flower. It is also remarkable that the colour is the same in both parent and sport. These are combinations of freaks certainly. *Mrs. Horril* is one of the best varieties in existence as a decorative *Chrysanthemum*. The other remarkable instance where the sort is unlike, is that of *John Bradner*, an incurved, which is the result of a sport from the reflexed variety. *Mrs. Forsythe*, which originated perhaps a dozen years ago, and has since been lost sight of; it was a variety never much in request, not being in any way a perfect flower. I mention these two instances to show the large range of variability that may exist in *Chrysanthemum* sports. The freak appears to be more prevalent in the incurved section than in any other, and perhaps it is fortunate that it is so, as this section receives so few additions by any other means. With the exception of the original varieties in each family, all the best flowers have originated as sports in the incurved section. Many varieties have been raised from seed, but with few exceptions, and these are recent; the seedlings are not equal to the sports—at least, not according to the English standard. It likewise seems strange that the oldest of the present cultivated varieties (*Nonpareil*) does not give us a sport, although this was introduced fifty-five years since.

Up to the present time I am not aware of any variety that has been raised from this one. Some varieties that we know of originated as seedlings, are now affording others by means of sporting. For instance, *Jeanne d'Arc*, which was sent out in 1881 by *Lacroix*, has sported once, giving us *Brookfield Gem*, a deep lilac flower, contrasting well with the

purple-tipped blush-white of the parent. Some families have increased in numbers rapidly, too much so in some cases; there being apparent a desire to increase them too fast by sending out varieties which are not sufficiently distinct to warrant their being given a separate name. Some persons may think that there is no harm in giving a variety a name, because it has some imaginary difference, but there is a good deal of harm done by the confusion it causes, and sometimes something more serious; and no flower which is not thoroughly distinct is worthy of a name.

The desire for novelty is so strong that any supposed variety is eagerly brought out, and often before it has been proved to possess distinctness. Although the Japanese varieties greatly outnumber those of the incurved flowers, they are mainly seedlings; there are fewer Japanese sports which possess that degree of perfection demanded at the present day, and insisted on in the case of the incurved. Among the latter, *Queen of England* is not only more productive of sports than any other, but it is also the most popular group. This variety was introduced by *J. Salter*, as far back as 1847, and nine years later it gave the sport *Alfred Salter*; and thirty-two years elapsed before this scion of *The Queen* sported in *Mr. R. Mudie*. By some growers this variety is considered to be superior to *John Doughty*, with which it is classed as being identical, but it does seem strange that the one should be from *Alfred Salter*, a sport of a sport, and the other from *The Queen* direct. This is but another instance of the peculiar manner in which these sports occur, and one was obtained in Scotland and the other in Kent, the former the first in point of seniority, but as it was not made widely known, it was lost for a year. *Golden Queen of England* was the next sport obtained from *The Queen*; this was in 1859. This variety has perhaps been the subject of many mistakes as to its origin. However, the type is still highly valued as furnishing a desirable colour.

During 1861, *Empress of India* was sent out; this pure white sport also came from *Queen of England*, and is highly prized as an exhibition variety. Sixteen years later saw the advent of a clear golden-yellow sport, *Golden Empress*, from the white *Queen of England*. Five years afterwards came the best of all, *Lord Alcester*, a grand variety, which originated from a plant belonging to a policeman in Somersetshire, where it had existed for two or three years before coming into commerce. As recently as 1891, *Mr. Robinson King*, a sport from *Golden Empress*, was brought into prominence. Another sport is in existence from the original, which has faint pink stripes in the pure white petals, but I fear it is not distinct enough for exhibition purposes.

The next in importance is the *Princess of Wales* group: notwithstanding the fact that the original was not introduced until 1864, no less than four sterling varieties have come from it in that time, viz., *Mrs. Heales* in 1867, the next year *Miss M. A. Haggas*—from *Mrs. Heales*, and *Violet Tomlin*—coming from the type variety. Several others have sported, but as they are not looked upon very favourably, I will not name them here, as it might introduce confusion, which is most undesirable. The group known as *Princess Teck* is worthily represented by six varieties: the original sent over by *Pethers* in 1868; then six years later we got *Hero of Stoke Newington*, *Mrs. Norman Davis* following in 1886, and *Lord Eversley* one year later; in the year 1886 *Lady Dorothy* and *Charles Gibson* came out, the latter a sport from *Mrs. Norman Davis*, and the white-flowered *Lady Dorothy* emanated from the *Hero of Stoke Newington*, *Lord Eversley* being a pure white counterpart of its parent, *Princess Teck*. *Jardin des Plantes* is still unrivalled in colour; it was brought out as long ago as 1859, and *Novelty*, a bronze form of it, came out eleven years afterwards, and in 1888 it sported, giving us *Alfred Lyne*. *Barbara*, one of the 1869 introductions, has recently provided us with an almost pure yellow form. *Beverley*, introduced by *Smith* in 1863, gave a golden form three years later, and

again sported to a bronze form, *H. Shoemith*. *Lady Slade*, one of the neatest, but now almost obsolete, came out in 1864, and no doubt was highly prized; twenty-three years later *Angelic* came as a sport from it. *Prince Alfred* was one of *Davis's* flowers of 1863, and, strange to say, it sported in two parts of the country almost twenty years later, since which time seedlings have been raised from the sports, the only English-raised seedling obtained direct that I am acquainted with. In 1861 *Lady Hardinge* came forward, and sporting in 1878, brought out *Mrs. W. Shipman*. *Princess Beatrice* was first seen as far back as 1868, which last year sported a bronze-coloured bloom, *G. Cockburn*. *Pethers* brought out *Empress Eugénie* in 1865, which in 1889 sported while being grown in New Zealand, resulting in the introduction next year of *Mrs. Mitchell*.

Much might be said regarding the Japanese families, but sported varieties of these do not seem so long-lived as the incurved, and as they are so readily obtained from seed, sports are not nearly so valuable as the latter. Very few of the present-day Japanese grown for exhibition are known to be the result of sporting, which is a proof that they are not numerous. Last year I saw a somewhat strange freak in blooms of *C. H. Simmons*, a sport from *La Triomphante*, which were distinctly striped two or three times, the whole length of the florets, with primrose, on the rosy lilac of the parent, was a novel combination.

Sporting is not confined to any one section. The reflexed have been added to in the same way; and so have the *Anemone* varieties, not forgetting *Pompon*, and *Pompon Anemone* kinds. All have displayed the same freak, but in a lesser degree than the incurved section, and, fortunately so, or it would have been extremely difficult to have found a place for all. *E. Molyneux*.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 24.—Present: Dr. Russell, F.R.S., in the chair; Mr. Blandford, Rev. W. Wilks, Professor Farmer, and Rev. G. Henslow, Hon. Sec.

Galls on Oak.—With reference to the galls exhibited at the last meeting, and recognised as those of *Cynips calycis*, Mr. Blandford observed that they are used for procuring tannic acid on the continent, as well as the more common form, on *Quercus infectoria*, which contain 50 per cent.

Daffodils and Mice.—Rev. W. Wilks exhibited several bulbs which had been attacked by *Merodon*; but subsequently the mice had eaten into the bulbs, apparently in order to extract the grub, as no perfect bulb was ever touched. Mr. Wilks intends, and suggests as a means of selection, to spread out bulbs supposed to be affected where mice can have access to them, as the sound bulbs will be left untouched.

Daffodil Decaying.—He also showed a bulb which had decayed up the middle, while the base of the stem was detached together with the roots. It was referred to Kew for examination.

Onions Diseased.—Some large flattish Onions were exhibited, which had become completely rotten in the middle at the base of the stem. Two-thirds of a crop were said to have been lost. They were also referred to Kew.

Injured Timber, Photograph.—Prof. Farmer showed photographs of sections of an ancient Elm, lately cut down at Oxford. They showed a separation, for three parts of a circle, deeply seated within the stem. As the subsequent annual rings were at first discontinuous over the middle point, but gradually closed over it, the interpretation seemed to be that the tree had been partially decorticated, the wound being subsequently completely concealed.

Proliferous Fern.—Mr. Veitch forwarded a plant of *Adiantum* (which appeared among *A. capillus-veneris*, but had broader pinnules), having minute fronds starting from the situation of the sori, apparently being aposporous, and developing new fronds in the place of sporangia. Mr. Veitch remarks that this is the first time that he has seen this occurrence on an *Adiantum*.

Diseased Pears.—With reference to the Pears sent to the last meeting, Mr. Massee reports that "the fungus is *Gloeosporium fructigenum*, Berk. There is no possibility of arresting the disease in the mature state of the fruit, but this can be done by using the proper remedy during the development of the fruit." The remedy suggested for the same fungus in Peaches was "two or three sprayings of potassic sulphide ($\frac{1}{2}$ ounce to a gallon of water)."

HAVANT CHRYSANTHEMUM.

OCTOBER 27, 28.—The tenth autumn exhibition of the above society was held in the Town Hall on Friday and Saturday last. Cut blooms of Chrysanthemums receive from the local growers the most encouragement, and a fine display was the result. The principal class was one for thirty-six blooms, half of which were to be incurved and half Japanese varieties. The 1st prize fell to Mr. Penfold, Sir F. FitzWygram's gardener, Leigh Park, Havant, who was just able to squeeze in; his blooms were, of course, good ones, the Japanese large, bright, and fresh-looking, and containing several novelties, but the incurveds were rather small. Mr. Agate, Havant, was 2nd.

In the class for eighteen, in nine varieties of Japanese and incurveds, Mr. Steptoe, gr. to G. Gale, Esq., Horndean, was 1st, with an even lot of blooms; Mr. J. Suter, gr. to J. Lascelles, Esq., Havant, was 2nd.

Incurved blooms in twelve varieties were best shown by Mr. Penfold; Mr. Agate 2nd. These two exhibitors maintained the same order in the competition for the best twelve Japanese, both staging blooms that were well-developed and leading varieties.

Anemone-flowered kinds were capitally exhibited by those veteran growers, Messrs. Penfold and Agate, as were reflexed varieties by Messrs. Penfold and Steptoe.

Pompon and single-flowered kinds are generally seen in good form at the Havant show, and Mr. Agate won with the former; and Mr. H. Brown, gr. to J. Taplin, Esq., with the latter, his collection being excellent.

Mr. Penfold showed both the premier incurved blooms, one of Madame Darrier and the Japanese variety, Colonel B. Smith.

Ladies had a class to themselves, for table decorations with Chrysanthemums, &c., and a very interesting feature it proved, the prizes for the best tables being awarded to Miss Newman and Mrs. A. Stubbs.

Several groups of Chrysanthemums were effectively arranged by Mr. Agate and Mr. Suter.

Table plants and Primulas were well shown, and the fruit was of good quality, if small in quantity, Mr. Penfold showing the best black and white Grapes; and Mr. Maniver, gr. to Lieut.-Col. Thistlethwaite, Drayton, Apples and Pears.

PORTSMOUTH CHRYSANTHEMUM.

OCTOBER 31, AND NOVEMBER 1, 2.—This was another fine exhibition to be added to those already held by the Portsmouth Chrysanthemum Society. The event took place in the Drill Hall, a commodious and suitable building. If the entries were rather fewer in number than usual, the quality of the flowers and plants was excellent for the season, which has not been everything that a grower could wish.

Cut blooms were the most part of the show, and the principal class was that for forty-eight, divided between the incurved and the Japanese varieties. Seven competed, Messrs. W. & G. Drover, The Nurseries, Fareham, taking the 1st place. It may be said of the flowers that the Japanese were fresh and good, but the incurveds were scarcely up to the mark; 2nd, Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Fareham, with good blooms.

For twenty-four distinct, to be equally divided between Japanese and incurved kinds, Mr. Inglefield, gr. to Sir J. Kelk, Bart., Tedworth, Marlborough, was an excellent 1st, having fine blooms of both kinds; Mr. H. J. Parrott, gr. to Mrs. Kinnaid Smith, Wood End, Chichester, being the winner of the 2nd place. There were six competitors in the class for twelve Japanese, distinct, and the blooms were in each stand of good quality; Mr. C. H. Holloway, gr. to F. W. C. Read, Esq., The Wakes, Selborne, was 1st with blooms that were fine, an easy victory; 2nd, Mr. Parrott.

Mr. Penfold, gr. to Sir F. FitzWygram, easily won the highest prize for twelve incurved, and for

twelve reflexed blooms; and Mr. Steptoe, gr. to G. Gale, Esq., Horndean, the 2nd one.

The competition in the Anemone class was well contested, and excellent stands were staged; 1st, Mr. Agate, Havant; 2nd, Mr. Hatch, gr. at Victoria Park.

Pompons made a good display. For twelve bunches, Mr. H. Lee, Moreland's Road, Gosport, was 1st, and Mr. Hatch 2nd, the last-named staging one of the most interesting stands of blooms in the show in the class for fringed flowers.

Single-flowered varieties are always well shown here, and for the best twelve bunches of three blooms each, with foliage attached, Mr. H. Brown, gr. to J. Taplin, Esq., Havant, was placed 1st.

For six blooms of any one Japanese variety, there were several competitors, and Mr. Holloway exhibited well-developed blooms of *E. Molyneux*, winning the 1st prize; and Mr. J. Hughes, gr. to W. Baring, Esq., Norman Court, Salisbury, was 2nd, with *Avalanche*.

Mrs. Singlefield, in incurveds, showed *Jeanne d'Arc*, and took the 1st place with it, and very excellent they were.

Messrs. Perkins & Son, Coventry, won first prize for a bouquet of Chrysanthemums. Mrs. Conway, Havant, was successful in the classes for the best decorated epergne, with Chrysanthemums, and with autumn foliage and berries, as well as for the best arranged table. In all classes considerable merit was displayed. Plants were successfully staged. The best group of Chrysanthemums only, was one shown by Mr. Hatch, which consisted of plants having fully developed blooms, and it was not too formal.

Mr. Rooke, gr. to Messrs. Brickwood & Co., Southsea, was the most successful in the class for a group of miscellaneous plants.

Specimens plants of Chrysanthemums were well staged by Mr. Penfold and Mr. G. Lambert, Bognor, the former winning for large-flowered varieties, and the latter for Pompons; in no case was the training too formal.

Plants for table decoration such as Primulas and Solanums were capitally represented.

Fruit of the hardy section has never been seen in Portsmouth in such quantity and of such good quality before.

Mr. H. J. Jones, Ryecroft Nursery, Hither Green, Lewisham, had eleven dozen blooms of Japanese Chrysanthemums, staged in threes of each kind, "not for competition," which made a good display.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

FROST IN NOVEMBER.—Can any fellow-reader inform me where I can find the record of Sir Robert Christison's observation that a frost in the first week of November is always or usually followed by a mild winter? Here, in Gloucestershire, we had 7° of frost on the night of the 30th. H. E.

EPILOBIUM LATIFOLIUM.—Can any reader of the *Gardeners' Chronicle* tell "E. B. B." whether *Epilobium latifolium* is in cultivation in England? At one time it was not uncommon, and Wheeler of Warminster always kept it in stock. As a low-growing creeping plant it was useful and pretty, but he has not seen it for many years.

MARKETS.

COVENT GARDEN, November 2.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

PRICES rule as last week.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ferns, small, per 100 4 0-6 0
Aspidistra, per doz. 15 0-30 0	Foliage plants, doz. 12 0-42 0
— specimen, each 7 6-21 0	Fuchsia, per doz. ... 4 0-8 0
Chrysanthemums, doz. 6 0-9 0	Hydrangea, per doz. 12 0-24 0
— large plants, each 1 6-2 0	Lilium Harrisii ... 18 0-24 0
Cyperus, per dozen 4 0-10 0	Marguerite, per doz. 8 0-12 0
Dracena, each ... 1 0-5 0	Mignonette, doz. pots 6 0-9 0
Erica, various, p. dz. 9 0-24 0	Palms, various, each 2 0-10 0
Evergreen Shrubs, in var., per dozen ... 6 0-24 0	— specimens, each 10 6-84 0
Ficus elastica, each 1 6-7 6	Pelargonium, scarlet, per dozen ... 3 0-6 0
Ferns, various, doz. 4 0-9 0	Solanums, per doz. ... 9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-5 0	Orchids:—
Aster, dozen bun. ... 3 0-6 0	Cattleya, 12 blms. 6 0-12 0
Bouvardias, per bun. 0 6-1 0	Odontoglossum
Carnations, per bun. 1 0-2 0	— crispum, 12 blms. 2 0-6 0
Chrysanthemums, 12 bunches ... 2 0-6 0	Pelargoniums, scarlet, p. 12 bun. 3 0-6 0
— doz. blooms ... 1 0-6 0	— 12 sprays ... 0 6-1 0
Eucharis, per dozen 3 0-6 0	Primula, dble, p. bun. 0 6-1 0
Gardenia, per dozen 2 0-4 0	Pyrethrum, 12 bun. 2 0-4 0
Heliotrope, 12 sprays 0 3 0-6 0	Roses, doz. bunches 6 0-12 0
Lilac (Fr.), per bun. 4 0-6 0	— Tea, per dozen 0 6-2 0
Lilium lancifolium, p. doz. blooms 2 0-3 0	— coloured, dozen 2 0-4 0
— Harrisii, p. doz. 6 0-9 0	— yellow (Maréchal), per doz. 2 0-6 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-1 6
Marguerite, 12 bun. 1 6-3 0	Tuberose, 12 blms. 0 4-0 6
Mignonette, 12 bun. 2 0-4 0	Violets, Parmé, p. bn. 2 0-2 6
	— Czar, per bun. 1 9-2 0
	— English, per doz. 1 6-2 0

ORCHID-BLOOM in variety.

CHRYSANTHEMUM-BLOOM very plentiful, price is low in consequence.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 0-6 0	Pine-apples, St. Michael, each ... 3 0-7 6
Cobs, per 100 lb. ... 32 6-...	
Grapes, per lb. ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 6-...	Lettuces, per doz. ... 1 6-2 0
Beet, red, per dozen 2 0-3 0	Mushrooms, punnet 1 6-2 0
Carrots, per bunch ... 0 4-0 6	Mustard and Cress, punnet ... 0 2-...
Cauliflowers, each ... 0 3-0 6	Parsley, per bunch ... 0 2-0 3
Celery, bundle ... 1 0-1 3	Shallots, per lb. ... 0 3-...
Cucumbers, each ... 0 6-1 0	Tomatoes, per lb. ... 1 0-...
Endive, per dozen ... 1 3-1 6	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 3-1 0	
Leeks ... 0 4-...	

POTATOS.

Arrivals are not quite so heavy, and a better demand for good samples. Prices about same as last quoted, except for ordinary kinds, which are a drug on the market. J. B. Thomas.

SEEDS.

LONDON: Nov. 1.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market idle. Clover seeds for the moment meet with scarcely any attention whatever. Orders still come to hand for Winter Tares; the supply seems very nearly exhausted. Seed Rye is firm. No change this week in either Mustard or Rape seed. Canary seed, with a greatly improved consumptive demand, hardens in value. Hemp seed, however, is cheaper. Peas and Haricots, owing to the colder weather, move off more freely.

FRUITS AND VEGETABLES.

BOROUGH: October 31.—Quotations:—Cabbages, 3s. to 6s.; Savoys, 4s. to 6s.; Cauliflowers, 5s. per tally; Turnips, 1s. 6d. to 2s.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; Apples, 2s. to 8s. per bushel.

SPITALFIELDS: October 31.—Quotations:—Cabbages, 3s. to 6s.; Savoys, 4s. to 6s.; Cauliflowers, 5s. per tally; Turnips, 1s. 6d. to 2s.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; Apples, 2s. to 8s. per bushel.

FARRINGTON: Nov. 2.—Quotations:—Sprouts, 1s. 6d. p r half-bushel; 6 peck cases, 6s. to 6s. 6d.; Carrots, 3s. 6d. per sack; Beans, 2s. per bushel; Cauliflowers, 1s. 6d. per dozen; Cabbages, 9d. to 1s. 0d.; Apples, cooking, 2s. 6d. to 3s. 6d. per bushel; do., Ribston's, 4s. 6d. per bushel; do., King Pippins, 4s. 6d. per bushel; Grapes, barrels, 10s. to 11s. 6d. per barrel; do., hot-house, 10d. per lb.

STRATFORD: Oct. 31.—There has been a good supply of all kinds of produce at the above market during the past week, and a brisk trade was done at the undermentioned prices:—Cabbages, 1s. 6d. to 3s. 6d. per tally; Savoys, 2s. to 5s. 6d. per tally; Cauliflowers, 6d. to 1s. 6d. per dozen; do., 2s. 6d. to 7s. 6d. per tally; Turnips, 1s. 3d. to 1s. 9d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 45s. to 52s. 6d. per ton; do., cattle-feeding, 27s. 6d. to 35s. per ton; Parsnips, 6d. to 1s. per score; Mangels, 22s. to 27s. per ton; Swedes, 25s. to 28s. per ton; Onions, English, 156s. to 160s. per ton; do. Dutch, 6s. to 6s. 6d. per bag; Apples, English, 2s. 3d. to 4s. 6d. per bushel; Brussels Sprouts, 1s. 3d. to 1s. 9d. per half-sieve; Celery, 9d. to 1s. 3d. per roll; Horseradish, 1s. 4d. to 1s. 8d. per bundle.

POTATOS.

BOROUGH AND SPITALFIELDS: October 31.—Quotations ranged between 40s. and 110s. per ton.

STRATFORD: Oct. 31.—Quotations:—Magnums, dark-land 40s. to 45s.; do., upland, 45s. to 60s.; Sutton's Abundance, 70s. to 75s.; Bruce, 50s. to 70s. per ton.

FARRINGTON: Nov. 2.—Quotations:—Sutton's Abundance, 70s. to 75s.; Main Crop, 70s. to 80s.; Bruce, 55s. to 60s.; Magnums, 45s. to 55s. per ton.

LONDON AVERAGES: Nov. 1.—Hebrons, 80s. to 100s.; Regents, 60s. to 80s.; Magnums, 40s. to 65s.; other kinds, 40s. to 60s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 155s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s. New Mixture, 115s. to 130s.; and Straw, 35s. to 58s. per load.

THE WEATHER.

[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending October 28.	ACCOMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
	Day-deg.	Day-deg.	Day-deg.	Day deg.	10ths Inch.	Ins.				
0	2 +	31	3	+ 558	— 76	18 +	202	41.9	11	24
1	3 +	37	3	+ 561	— 27	0 aver	157	21.6	33	33
2	2 +	44	0	+ 459	— 74	5 —	132	16.3	41	37
3	1 +	42	2	+ 547	— 60	4 —	134	16.0	31	44
4	3 +	45	0	+ 628	— 76	5 —	128	16.3	30	41
5	2 +	53	0	+ 621	— 61	4 —	129	16.7	32	45
6	3 +	46	0	+ 515	— 76	9 +	162	32.4	21	37
7	3 +	61	0	+ 769	— 101	3 —	148	24.9	22	36
8	2 +	57	0	+ 633	— 79	5 —	137	26.3	21	47
9	2 +	39	0	+ 579	— 109	3 +	173	27.6	17	32
10	1 +	52	0	+ 631	— 104	5 —	151	25.2	25	36
*	2 +	78	0	+ 887	— 52	7 —	145	22.2	32	56

The districts indicated by number in the first column are the following:—

- 0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending October 28, is furnished from the Meteorological Office:—

"The weather during this period was very wet in the extreme north and north-west, heavy rain falling almost daily; in the more southern and eastern districts, however, the rainfall was slight and infrequent, and several fine and dry intervals were experienced.

"The temperature continued above the mean in all districts, the excess ranging from 1° in 'England, E. and Ireland, S.,' to 2° or 3° elsewhere. The highest of the maxima were recorded, as a rule, either on the first or last day of the week, when the thermometer rose to 66° in 'England, N.W.,' to 61° in 'England, N.E. and the Channel Islands,' and to between 57° and 60° in all other districts, excepting 'Scotland, N.,' where the highest reading was 55°. The lowest of the minima occurred on the 27th, and ranged from 31° in 'England, N.W.,' and 32° in 'Scotland, N. and Ireland, S.,' to 39° in 'England, N.W.,' and to 41° in the 'Channel Islands.'

"The rainfall greatly exceeded the mean in 'Scotland, N. and W.,' and slightly in 'Ireland, N.,' in 'Scotland, E.' the fall was just equal to the normal, while in all the other districts there was a large deficit. Some of the falls experienced in the north and west of Scotland were unusually large; thus, on the 24th, as much as 3.38 inches was measured at Glencarron, 3.25 inches at Fort William, and 2.32 inches at Fort Augustus.

"The bright sunshine was more prevalent generally than it was during the preceding week; it exceeded the mean in most of the 'wheat producing' districts, and showed a deficit in nearly all the 'grazing districts.' The percentage of the possible amount of duration ranged from 41 in 'England, N.E.,' to 32 in 'Scotland, E.,' 'England, S.,' and the 'Channel Islands,' to 17 in 'Ireland, N.,' and to 11 in 'Scotland, N.'"

NOTICES TO CORRESPONDENTS.

BOOKS: *F. Von der Osten. The Illustrated Dictionary of Gardening*, by G. Nicholson, and others. (Published by Upcott Gill, 170, Strand, W.C.) *The Gardeners' Assistant*, by W. Thompson. (Published by Blackie & Sons, Edinburgh.) *Manual of Orchidaceous Plants*, still being issued. (J. H. Veitch, Royal Exotic Nursery, Chelsea, S.W. Sold at same place.) *Choice Stove and Greenhouse Flowering Plants*, 3rd edition, by B. S. Williams, Victoria and Paradise Nurseries, Holloway. (Sold and published by the same.) *The Orchid Growers' Manual*, 6th edition, by B. S. Williams, Holloway. (Sold and published by the same.) *Select Ferns and Lycopoda*, 2nd edition, by B. S. Williams, as above. *Thomson's Handy-book of the Flower Garden*, 4th edition. (Blackwood & Sons, Edinburgh and London.) *My Gardener*, by H. W. Ward. (Published by Eyre and Spottiswoode, East Harding Street, London, E.C.) *The Fruit Manual*, by Dr. R. Hogg, 5th edition. (Published and sold at 171, Fleet Street.) *How to Lay-out a Garden*, by E. Kemp. *Alpine Plants*, by David Wooster. (Published by G. Bell & Co., York Street, Covent Garden, W.C.) *Manual of Forestry*, by Dr. Schlich (Bradbury & Co.). *Vines and Vine Culture*, by A. F. Barron, and to be obtained from him at the Royal Horticultural Society's Garden, Chiswick). *A Manual of Conifers*, by H. J. Veitch, Royal Exotic Nursery, Chelsea, S.W.—*Herefordshire*. There are not, so far as we are aware, any books that treat of the dressing of farm and garden seeds. It is a business of itself, which must be learned in the usual way.

CELERY: *C. B.* The head of Celery, the heart of which was decayed, and the base surrounded by a crop of strong suckers, swarmed with insects in variety, and wire-worms and other worms. Most of them are such as abound in manure and heavily-manured ground, but, with the exception of wire-worms, we cannot say that they are injurious to Celery, although they might, with their burrowings and excrement, render the soil sour and more unhealthy than it is. Having grown Celery in the same trenches for three years would of itself account for the state of the soil, without taking into account the layer of dung 10 inches deep that was yearly put into the trenches, and the Clay's Manure, and the cow-shed drainage, &c. Good gardeners do not grow wholesome vegetables in this fashion. You should find a fresh place another year for your Celery, and be content with a 5-inch layer of manure, which should be covered with 4 or 5 inches of mould, shovelled down from the sides of the trench, not dug up from below. To get rid of the worms, insects, &c., you could try the effect of clear lime-water.

CHRYSAETHEMUMS: *A Constant Reader*. Six varieties for cut flowers:—*Elaine*, Madame C. Audignier, *Gloriosum*, Edwin Molyneux, amongst Japanese; Mrs. Rundle and Queen of England amongst incurved varieties. Six varieties to grow in pots:—*Val d'Andorre*, *Criterion*, *Thunberg*, *Baron de Prailly*, *Lord Alcester*, and *Jardin des Plantes*.

GARDENERS' CHRONICLE FOR SEVEN YEARS: *C. F.* You might perhaps obtain £3 for them, unbound; or, at another time, only the price of waste paper. It will be better if you advertise them.

DENDROBIUM NOBILE: *K. F. G.* The plant having completed its pseudobulbs or stems for the season, should be gradually brought to rest by removing it to a less warm house, and withholding water, also gradually. It may be rested in a dry state, in a temperature of 50° to 55°. If the plant gets no rest and you keep it in heat, it will flower very early and weakly, probably.

INSECTS: *Beetle*. The weevil on imported *Phalænopsis Schroderi* is *Baridius aterrimus*, C. Waterhouse, originally described from specimens sent from Singapore, where they were most destructive to *Phalænopsis* and other Orchids. The other insect is one of the "Diamond Beetles," and is known as *Entionus imperialis*. *R. McL.*

MARKET GARDENERS' ACT, 1893: *J. B.* Sold by Messrs. Eyre and Spottiswoode, Government Printers, London.

NAMES OF FRUITS: *J. Mc. F.* 1, rotten; 2, Duchesse d'Angoulême; 3, Comte de Lamy; 4, Beurré d'Aremberg; 5, Passe Colmar; 6, Josephine de Malines.—*J. F.* 1, Verulam; 2, Glou Morceau; 3, Court Pendu Plat; 4, King of the Pippins; 5, Rymer; 6, King of the Pippins.—*T. O.* 1, Berga-

motte d'Esperen; 2, Glou Morceau; 3, Cornish Gilliflower; 4, Sops in Wine.—*H. T. Reader*. 7, Dutch Mignonne; 8, Scarlet Nonpareil; 9, Early Nonpareil; 10, Alfriston (?); 11, Holland Pippin; 12, Bedfordshire Foundling.—*F. W. Vokes*. 8, Cellini; 9, Hawthornden; 10 and 12, Royal Somerset; 11, Cornish Gilliflower; 13, Golden Noble.—*O. Harvey*. 1, Beurré de Jonghe; 2, Glout Morceau; 3, Royal Somerset; 4, King of the Pippins; 5, Requette van Mons; 6, Five Crown Pippin (?).—*Rev. C. C.* The yellow Pear, Maréchal de la Cour; the green, Triomphe de Jodoigne, very large.—*J. R. G.* 1, Hanwell Souring; 2, Tibbet's Pearmain; 3, Golden Noble; 4, Dutch Mignonne; 6, Kentish Codlin; 5, not recognised.—*J. Wood*. 1, overripe; 2, Duchesse d'Angoulême; 3, Gloria Mundi; 4, Claygate Pearmain; 5, Blenheim Orange; 6, Rymer; 9, Norfolk Beefing.—*S. P.* 1, Marie Louise d'Uccle; 2, Broom Park; 3, Doyenné du Comice; 5, Marie Louise; 6, Ne plus Meuris; 7, Winter Nelis; 8, Duchesse d'Angoulême.—*J. W.* 1, 2, Emperor Alexander; 3, Court of Wick; 4, Duchesse d'Angoulême; 5, Bergamotte d'Esperen; 6, Josephine de Malines; 7, Napoléon.—*G. M., Wantage*. 1, Pear, Passe Colmar; 2, Beurré Rance; 3, Bishop's Thumb; 4, Soldat d'Esperen; 5, King of the Pippins Apple.—*S. R.* Pear very much rubbed and bruised, not recognised.—*N. C., Headingley*. Grape, Madresfield Court.

NAMES OF PLANTS: *E. W. P.* The hard brown seed, *Staphylea pinnata*. The other is insufficient for identification.—*Bridget*. Aster N. A. pulchellus.—*X. Y. Z.* Asters: 1, Tradescanti; 2, N. B. Flora; 3, N. A. roseus. 4, received in poor condition; probably *Chrysogonum heterophyllum*.—*Thyne & Paton*. Asters: 1, ericoides; 2, vimineus; 3, acris; 4, N. A. pulchellus; 5, N. B. Robert Parker; 6, N. A. roseus.—*T. H. Hill*. The pink flower is *Habrothamnus fascicularis*; the small unflowered shoot, *Diplacus glutinosus*; the other a species of *Bignonia*, but we cannot say which one without flowers.—*C. F. Osmanthus Aquifolium* var. *myrtifolius*.—*J. B. & Son*. *Reineckia carnea* variegata.—*Correspondent*. *Passiflora alata*.—*G. M. C.* 1, *Bulbophyllum imbricatum*; 2, *Maxillaria picta*; 3, *Saccolabium bellinum*.—*H. M.* 1, *Adiantum hispidulum*; 2, *Adiantum concinnum*; 3, *Adiantum decorum*; 4, a form of *Adiantum cuneatum*; 5, *Davallia bullata*; 6, *Davallia tenuifolia*; 7, *Pteris serrulata* major; 8, *Pteris cretica cristata*; 9, *Davallia platyphylla*; 10, *Pteris crenata*; 11, *Pteris adiantoides*.—*No Name*. 1, *Eolalia japonica*; 2, *Eryngium amethystinum*; 3, *Carex variegata*; 4, *Hedera Regneriana*; 5, *Hedera Helix argentea marginata*.—*W. S. A., Hawick*. 1, *Hedera Helix aurea*; 2, Probably the arborescent form of 3, which is known in gardens as *Hedera chrysocarpa*.—*T. S., Rochdale*. The specimens sent are all immature examples of *Crotons*, *Dracenas*, &c., which cannot be determined.—*C. F., Runcorn*. A form of *Adiantum capillus-veneris* magnificum.—*J. Johnson*. *Cypripedium Rothschildianum*.—*M. K. G.* 1, *Adiantum æthiopicum*; 2, *Adiantum elegans*; 3, *Erica melanthera*; 4, *Asplenium bifforme*; 5, *Adiantum capillus-veneris* magnificum; 6, *Pteris cretica* Mayii; 7, *Pteris cretica*.—*Rev. S. N. T.* Yes; your plant is commonly known as the Moon-flower. Its proper name is *Ipomœa Bona Nox*.—*E. Lazenby*. *Cassia corymbosa*.—*T. D.* 2, *Sansievera zeylanica*; 3, *Reineckia carnea* variegata; 4, *Eucharis* sps., send when in flower; 5, *Sparmannia africana*; *Begonia* cannot be named from leaves only.—*J. L.* *Passiflora alata*.

OLEANDER: *G. H.* Cuttings may be taken of mature leading shoots, and struck in warmth under a bell-glass, or they may be rooted in bottles half-filled with water and hung up in a warm place—the first is the better way. The tree may be kept in a partially-lighted cellar, if it be cool and dry, or under the greenhouse stage provided it can be kept dry. The plants require but little water during the winter, but they must not be allowed to become parched, and if the young shoots become shrivelled, the ball should receive a good watering. Start the plant into growth in April, and keep it in a well exposed part of the greenhouse till the middle of June, when it may be placed out-of-doors in the full sun. It must be well watered when in full growth, and fed either with a mulch of sheep-droppings, decayed pigeon-dung, or manure-water. The chief things to be observed are to get good long shoots, to well ripen these, to keep the plant out of the reach of the frost during the winter, and afford it but little water at that season. You should not have potted the plant at

this late date, but just when growth recommences. However, if the potting was very firmly done, no harm may arise, provided you carry out the above directions.

SHRUBS FOR AN AVENUE IN THE MIDLANDS: *J. B.* *Flowering Deciduous:* Lilac in many varieties, Philadelphus (Mock Orange), Coronarius microphyllus, &c.; the Quinces, two varieties; Siberian Crabs, many varieties; Pavia macrostachya, the Medlar, Hibiscus, Laburnums in variety, Colutea arborescens, Common and Spanish Broom, Viburnum opulus (Snowball Tree), V. lantana, V. macrocarpa, Pterocarya caucasica, Sea Buckthorn, Berberis communis, Hamamelis virginica, Halesia, Cornus mas (Cornelian Cherry), Cerasus padus (the bird Cherry), Amelanchier canadensis, Thorns of all kinds. The above are not expensive, and they are procurable in any good nursery. *Evergreens* might consist of the Colchic and round-leaved Laurels; Portugal Laurel, Hollies, green, gold, and silver varieties; Rhododendrons, ponticum and hybridum; Andromedas, Kalmias, Ledums, Menziesias, Ericas, Berberis Aquifolium, Garrya elliptica, Chinese Privet, Spurge Laurel, Arbutus Unedo, Phillyrea, Laurustinus, Juniperus tamariscifolia, J. prostrata, Retinospora in variety, Osmanthus ilicifolius, and many more.

STOCKS FOR THE MORELLO CHERRY: *P. S.* The Mahaleb having failed as a stock in your clayey soil, although a heavy soil suits that stock, you might try the Sweet Cherry stock instead. Is your land well drained? the appearance of the foliage pointing to a water-logged soil.

SWEET WILLIAMS AND FUNGUS DISEASE: *C. S.* It is the ordinary Puccinia arenaria, known at one time as Puccinia lychnidearum. There is no certain cure except by rooting up the infected plants and burning them. *M. C. C.*

TREE GUARD AGAINST STOCK, HARES, AND RABBITS.—Several correspondents having desired information regarding the protection of fruit trees in orchards, shrubberies, and other places not secured

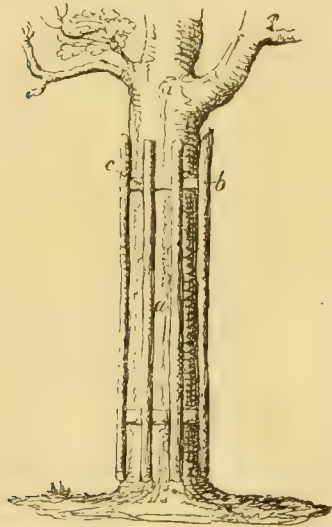


FIG. 95.—TREE GUARD.

a, the tree; b, the rods; c, the blocks between the rods.

against the entry of animals, we append a cut (fig. 95), of a neat and effective guard suitable for standard and half-standard trees. The rods used should be of dried Ash, Hazel, or Chestnut, with the bark left on. See also *Gard. Chron.* for Oct. 28, p. 539.

COMMUNICATIONS RECEIVED.—*H. Palmer*, with many thanks. —*C. C. Pichang*, with many thanks. —*R. B. Madagascar*. —*E. J. L. W. R. Bergen*. —*W. N. & Co.* —*W. H. E.* —*E. C. H. C. E. C. Bayswater*. —*H. G. S. R. L. Edinburgh*, next week. —*R. S. C. T. Porter*. —*S. B. T. O.* —*W. Scott*. —*T. A. N. E. W. W. R. A. Harris, Jamaica*. —*M. T. W. A. C. H. W. W. W. R. W. D. C. P. Dr. A. P. A. D.*

FRUITS RECEIVED.—*J. G. J. T. A. C. H. S. W. B. R. W.* —*W. S. A. W. P. C. E. M. J. S. Dianthus*.

SPECIMENS RECEIVED, WITH THANKS.—*Sir T. L. Charles Ayres, Cape Town*.

VIOLETS.—*Marie Louise, Comte Brazza*, Double Neapolitan, Grand Clumps ready, Winter-blooming, 12s. per dozen; *Czar*, 6s. per dozen. —*"LOADSTONE"* and *HELEN JULIET*, School of Gardening, Hemel Hempstead, Herts.

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Tasmania Horticultural Society, Hobart Town. May 4, 1893.

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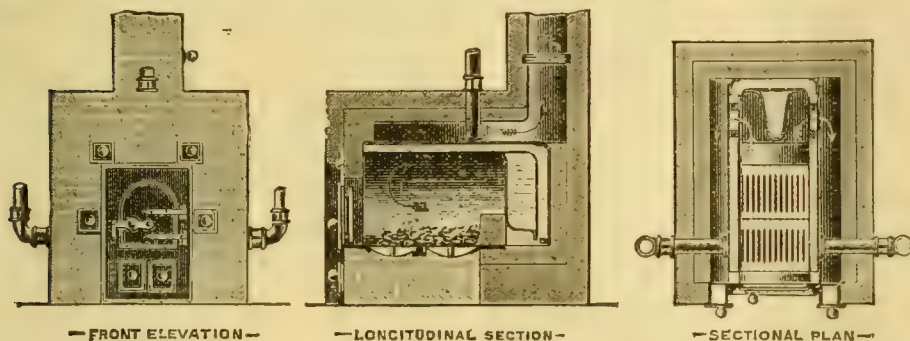
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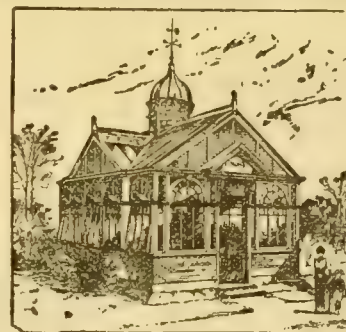


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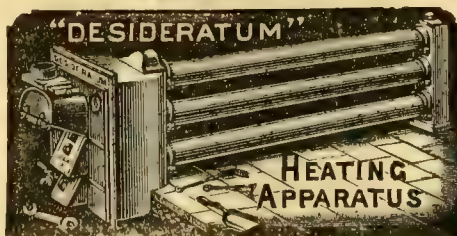
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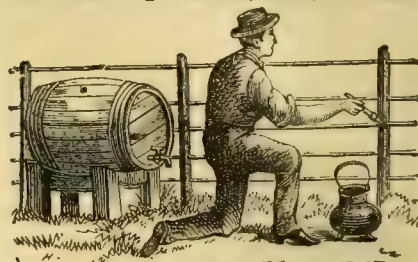
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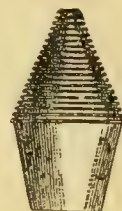


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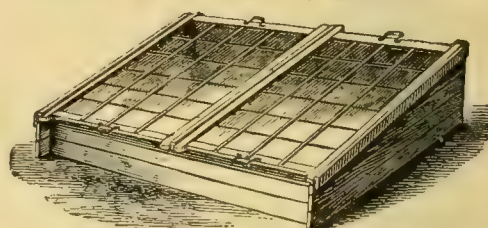
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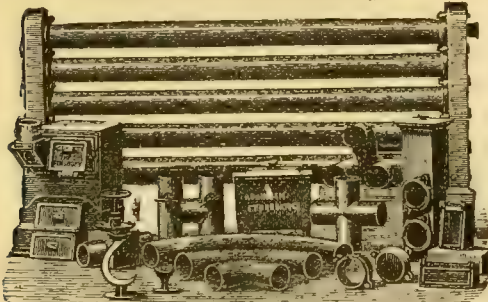
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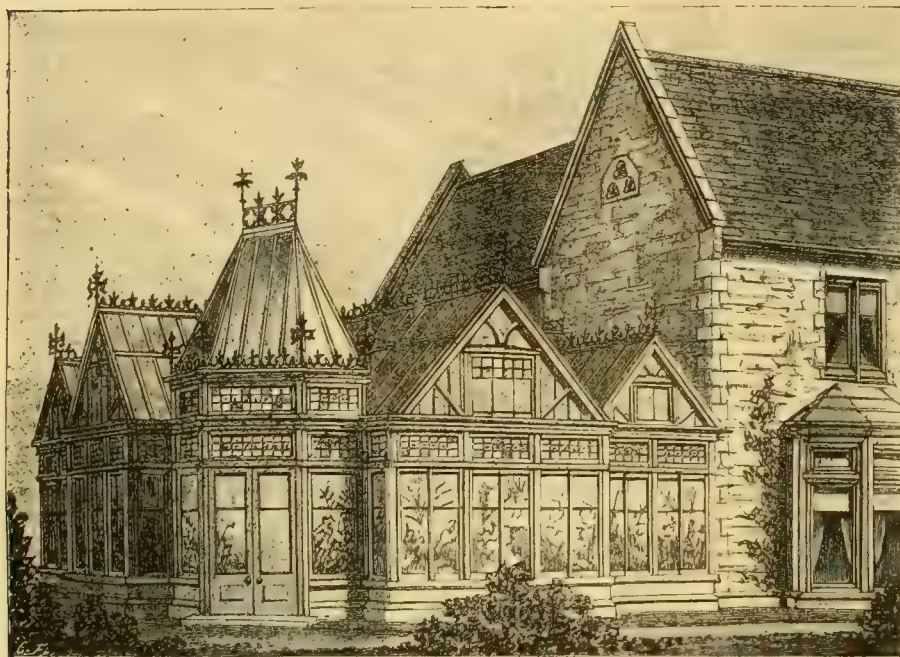
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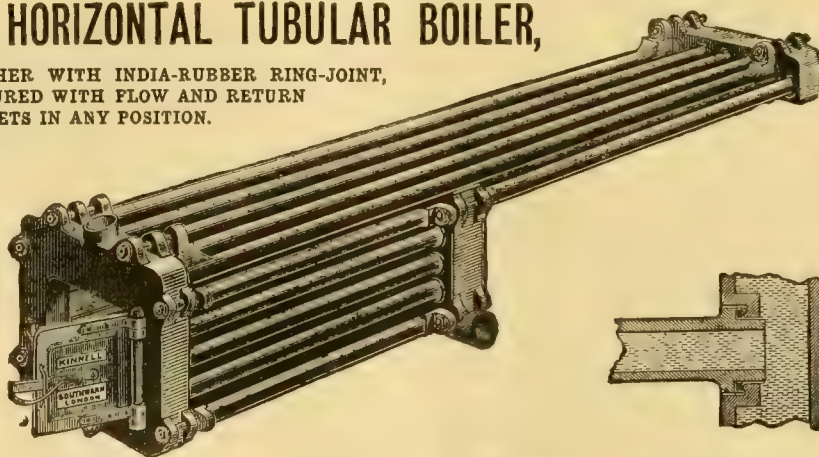
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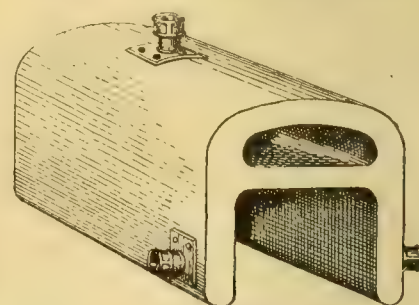
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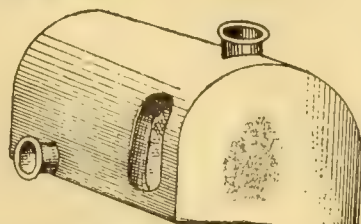


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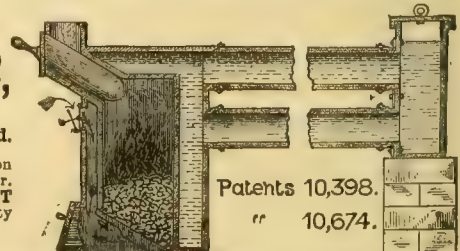
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No. 359.—VOL. XIV. {THIRD SERIES.}

SATURDAY, NOVEMBER 11, 1893.

{PRICE 3d. POST-FREE, 3½d.}

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ADVERTISERS will greatly assist our efforts to get to Press earlier, by forwarding their favours as EARLY IN THE WEEK as possible.

H. CANNELL AND SONS' CARNATIONS and NEW CHRYSANTHEMUMS.—Special CATALOGUE of the above is now ready, and sent post free. It will be found most complete with such valuable information, that it is absolutely necessary all lovers of these two families should possess it at once.

SWANLEY, KENT.

ORCHIDS.—New, Rare, Cheap.—Imported and Established. CATALOGUE just published, post-free on application. FRED. HORSMAN AND CO., Colchester.

SUTTON'S PARROT TULIPS are of immense size, and gorgeous colours.

SUTTON'S PARROT TULIPS are invaluable for the mixed border.

SUTTON'S PARROT TULIPS are some of the most lovely and interesting flowers for table decoration.

SUTTON'S PARROT TULIPS, Mixed, per dozen, 9d. The best named sorts, each separate, per dozen, 1s. and 1s. 6d.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.

ORCHIDS.—Many rare and choice Cattleyas, Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST. W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N.

Grape Vines—Grape Vines—Grape Vines.

B. S. WILLIAMS AND SON have some extra strong Fruiting and strong Planting Canes still on hand. Full particulars as to Prices and Varieties on application.

Victoria and Paradise Nurseries, Upper Holloway, London, N.

MILLER'S BERLIN CROWNS LILY OF THE VALLEY, large, plump, and solid, force splendidly, 1s. per dozen, 5s. 6d. per 100, 52s. 6d. per 1000; Liliun Auratum, sound, heavy bulbs, 5s. 6d., 7s. 6d., and 10s. 6d. per dozen. Cash orders 10s., upwards free.

F. MILLER AND CO., 267, Fulham Road, London, S.W.

FRUITING GRAPE VINES IN POTS.—A very fine stock of Hamburgs, Muscats, and all other leading varieties in strong, short-jointed, and well-ripened Canes, in excellent condition for Forcing and General Pot Culture, 6s. to 10s. 6d. each; also Planting Canes, 2s. 6d. each and upwards.

WM. PAUL AND SON, Waltham Cross, Herts.

Important to Mushroom Growers.

CUTHBERT'S SPECIALITÉ MUSHROOM SPAWN. Always alike; most productive. Hundreds of testimonials. Per bushel, 5s. R. AND G. CUTHBERT, Seed, Bulb, and Plant Merchant, Southgate, N. Established 1797.

CARNATIONS.—Souvenir de la Malmaison, Rothschild's variety, deep pink, strong plants, 50s. per 100, 7s. per dozen; Germania, Mrs. R. Hole, Mrs. F. Watts, 30s. per 100, 4s. per dozen.

JAMES GREEN, Reliance Nurseries, March.

WANTED, two dozen strong CUCUMBER PLANTS, for Winter Forcing. State price to—A. FLINK, Thundersley House, Thundersley, Essex.

WANTED, a few thousand good, stout, well-rooted Common Ash; also Knob Ash and other ROOTED STICKS suitable for Walking Sticks.—Address, with lowest cash price, to S. MAYER, 6, Coronation Street, Leeds.

WANTED, 2 Standard POMEGRANATES, 4 to 5 feet stems, with heads about 3 feet through. Also Standard ORANGES and LEMONS, on stems, different heights, in pans.—Full particulars will oblige to—WM. CUTBUSH AND SON, Highgate Nurseries, London, N.

WANTED, 5000 SEEDLING BRIARS, strong. Sample and price to—G. HODGSON, Hemsworth Nursery, Wakefield.

WANTED, COMMON JUNIPER, transplanted, 9 to 12 inches or so high; BLACK THORN, transplanted; also 100 COPPER AUSTRIAN BRIAR, dwarf. Quote size and price. J. BACKHOUSE AND SON, York.

WANTED, large ALLAMANDA HENDERSONII. Also a large BOUGAINVILLEA GLABRA. Would exchange double their worth, including Croton, Phoenix, Rhipis, and Pancratium.—Particulars to G. H. SMITH, Myton Grange Gardens, near Warwick.

Special Trade Offer.

WILLIAM ICETON has a magnificent Stock of the leading kinds of PALMS, ARAUCARIAS, and FICUS, in small pots, to offer cheap. Arca Lutescens, Cocos Wedd., Corypha Aus., Phoenix rup., Latania borb., Kentias Fos. and Bell., Araucaria excelsa, Ficus elastica, Dracenas Lindenii and Doucetti. Putney Park Lane, Putney, S.W.

ORCHIDS.—New and rare species a special feature. Catalogue forwarded post free on application. SEEGER AND TROPP, Ltd., Orchid Nursery, East Dulwich, London, S.E.

SPANISH CHESTNUTS FOR SEED.—Fifty bushels for Sale, at 3s. per bushel, on rail. Also well-grown LARCH PLANTS, at 30s. per 1000, on rail. Mr. TALLANT, Cowdray Estate Office, Midhurst.

CHRYSANTHEMUMS.—Our new LIST is now ready. It contains all the most recent introductions, and they are offered at very moderate prices. Copies free on application.—DOBBIE AND CO., Florists, Rothessay.

CARNATIONS.—Germania, 4s.; Mrs. R. Hole, 3s. 6d.; Mrs. Muir, 3s.; Old Clove, 2s. 6d.; Souvenir de la Malmaison, 4s.; Pink do., Rothschild variety, 7s. 6d. per dozen, well-rooted Layers. Cash with Order. D. ANDERSON, Teddington Nursery, S.W.

CHRYSANTHEMUMS.—Strong cuttings, now ready, of Beauty of Exmouth, Charles Davis, W. Seward, Eda Prass, J. Shrimpton, C. Blick, Lord Brooke, Col. W. B. Smith, White Louis Bohmer, and other best sorts. The best old sorts from 1s. 6d. per doz., 10s. per 100. Catalogue one stamp, of W. ETHERINGTON, Swanscombe, Kent.

CHOICE CARNATIONS.—Grand Layers. Reynolds Hole, Raby, Mrs. Frank Watts, Germania, and Gloire de Nancy, 5s. 6d. per doz.; Old Clove, 3s. per doz., free. COLEMAN, Saffron Walden.

RASPBERRY CANES.—Baumforth's Seedling, 9s. per 100, 70s. per 1000; Norwich Wonder and Fastolf, 4s. 6d. per 100, 35s. per 1000. Strong Dutch RED CURRANTS, 2s. 6d. per dozen, 8s. per 100. Free on Rail. R. H. BATH, Osborne Farm, Wisbech.

LANE'S PRINCE ALBERT APPLE. A quantity of Maidens for Sale. Apply to H. T. POTTER, Dunstable.

To the Trade.

IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order.

E. D. SHUTTLEWORTH AND CO., LTD.,

Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our specialty—really good stuff grown for the Trade.

GISHURST COMPOUND, used since 1859 for Red Spider, Mildew, Thrips, Greenfly, and other blight; 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake, for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

J. WEEKS & Co., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings. Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom. London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice **HYACINTHS, TULIPS, CROCUS, NARCISSUS**, and other **BULBS**, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Wednesday Next.

Choice named Standard and Dwarf **ROSES**, Hardy, Ornamental, Flowering **TREES, SHRUBS, &c.**, **BORDER PLANTS, LILiums, 3000 SPIRÆAS, 50,000 LILY OF THE VALLEY** Crowns and Clumps, **GLADIOLI, &c.**

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY NEXT, November 15.**

On view morning of Sale, and Catalogues had.

Thursday Next.

VALUABLE IMPORTATION OF **ORCHIDS** from **BRAZIL**, and a **COLLECTION** in **FLOWER.**

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **THURSDAY NEXT, November 16**, a valuable importation of **ORCHIDS** from **Brazil**, including a New **Lælia**. Also a collection of **ESTABLISHED ORCHIDS**, comprising all the best leading varieties, and many in spike, bud, and flower.

On view morning of Sale, and Catalogues had.

N.B.—All these plants are in fine condition, and well worthy of amateurs and the trade.

Uxbridge.—Expiration of Lease.

Important **TWO DAYS' CLEARANCE SALE** of about 4 Acres of beautifully grown **NURSERY STOCK**, by order of Mr. Charles Turner, in consequence of the Lease of this portion of the Land being about to Expire.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Uxbridge, close to the Uxbridge Railway Station, on **MONDAY and TUESDAY NEXT, Nov. 13 and 14**, at half-past 12 o'clock precisely each day, without reserve, 4 acres of splendidly grown and well-rooted **NURSERY STOCK**, in capital condition, for removal, comprising 3000 Green and Variegated **Aucubas**, 1 to 3½ feet; 100 Irish **Yews**, 3 to 5 feet; 100 Variegated **Hollies**, 8000 Green **Hollies**, 1 to 2 feet; 200 English **Yews**, 3 to 6 feet; 350 Austrian **Pines**, 4 to 6 feet; 3500 **Laurels**, of sorts, 2 to 3 feet, consisting of **Caucasica, rotundifolia, and latifolia**; 500 **Portugal Laurels**, 2 to 4 feet; 600 Green and Variegated **Box**, 3 to 5 feet; 1100 **Thuia**s and **Cupressus**, 4 to 7 feet; **Mountain Ash**, **Poplars**, and other **Standard Trees**; 5000 **Limes**, 5 to 14 feet, extra good and clean, particularly adapted for street and avenue planting; and other stock.

May be viewed any day prior to the Sale. Catalogues may be had on the premises, at the Royal Nurseries, Slough, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Lea Bridge Road Nurseries, Leyton, E.

Close to Hoe Street and Lea Bridge Stations, G. E. R. Great Unreserved Four Days' SALE of Superior **NURSERY STOCK**, the land having been sold for building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises as above, on **TUESDAY NEXT, November 14**, and **THREE FOLLOWING DAYS**, at 12 o'clock precisely each day, by order of Mr. John Fraser (who is transferring the business to South Woodford), a large quantity of unusually well-grown

NURSERY STOCK,

all carefully prepared for removal, including 2500 **Hollies**, 1½ to 2 feet, and 5 to 6 feet; 3000 **Laurels** of sorts; a considerable number of Specimen **Border Shrubs, Azaleas, Lilacs**, and other hardy flowering **Shrubs**; 1000 **Birch**, 1000 **Mountain Ash**, 5000 **fine London Planes**, 10 to 14 feet; 1000 **Purple Beech**; 2000 **Limes**, 10 to 12 feet; 4000 **Variegated** and other **Ivies**; 1000 **Clematis Jackmannii**, and others; 1000 **Ampelopsis Veitchii**, 500 **Passiflora**, **Constance Elliott**; a quantity of fine **Standard and Dwarf Roses**; 10,000 **Fruit Trees**, comprising 1000 **Standard and Pyramid Apples**, 5000 **Standard and Pyramid Pears**, 2000 **Plums and Cherries**, 5000 **Maiden and Dwarf-trained Peaches**, **Nectarines**, **Apricots**, and **Plums**; 2000 **Clove** and other **Carnations**, in pots; strong fruiting and planting **Canes of Vines**; 1000 **Cyclamen**; 2000 **Bouvardia**s, full of flower-buds; 3000 **Genista fragrans**, splendid plants; 1000 **Solanums**, full of berries; 500 **Lapageria rosea**, and other greenhouse **Climbers**; and other useful **Stock**.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—Purchasers can arrange with Mr. Fraser to have their lots lifted and forwarded at the cost of labour incurred and material used.

Tuesday Next, November 14.

SPECIAL SALE OF HARDY PLANTS and BULBS, including 50,000 **Chinodoxa**, **Galanthus**, and others; thousands of choice **Lilies**, including **Henry**, and other first-class varieties; 1000 **Spiræa japonica multiflora** and **Sc. astilboides**; a grand collection of **Iris**, including **Her Majesty** (new), **Princess Alice** (new), and numbers of **Germanica**, **sibirica**, and other species; **Carnations** and **Picotees**, including the best new varieties, and the finest of the older kinds; thousands of **Berlin crowns**, and clumps of **Lily of the Valley**, **Narcissus**, and other **Bulbs**.

MESSRS. PROTHEROE AND MORRIS will sell the above by AUCTION at their Central Sale Rooms, 7 and 68, Cheapside, London, E.C., on **TUESDAY NEXT, November 14**, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Clapham Park, S.W.

CLEARANCE SALE of well-grown **STOVE** and **GREENHOUSE PLANTS and FERNS**, also **SIX PIGS**, by order of Sir George Lamson, who is leaving the neighbourhood.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Oakfield, Paynders Road, Clapham Park, S.W., a few minutes' walk from Clapham Road Station, on **THURSDAY NEXT, November 16**, at 1 o'clock, without reserve, the whole of the well-grown **STOVE and GREENHOUSE PLANTS**, including **Lapagerias, Aspidistras, Stephanotis, Begonias, Eucharis, PALMS**, in variety; **AZALEAS and CAMELLIAS**, 230 **MAIDENHAIR FERNS**, including several fine plants in large pots; 120 **CHRYSANTHEMUMS**, specimen **ORANGE TREE**, 10 feet, and **LEMON TREE**, 13 feet; a few **ORCHIDS**, capital **SOW IN PROFIT** and **FIVE YOUNG PIGS**.

May be viewed the day prior and morning of Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The excellent **DETACHED RESIDENCE**, standing in its own extensive grounds is **FOR SALE**, by private treaty. Particulars may be obtained of the Auctioneers.

Stevenage, Herts.

About five minutes walk from the Railway Station.

UNRESERVED SALE of the well-grown collection of **ESTABLISHED ORCHIDS**, by order of J. Bailey Denton, Esq., who is giving up their cultivation in consequence of ill-health.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the premises, Orchard Court, Stevenage, on **WEDNESDAY NEXT, November 15**, at 1 o'clock, the whole of the well-grown **ESTABLISHED ORCHIDS**, comprising **Odontoglossum Alexandrarum**, good plants, many of them unflowered, **Cattleyas** and **Cypripediums**, a fine variety of **Cattleya Labanacana**, with twenty-two **Bulbs**, **Odontoglossums**, **Oncidiums**, **Dendrobiums**, **Epidendrum Godseffianum**, splendid plant; **Lælia grandis tenebrosa**, elegans, aneeps, alba, and others. **Cymbidium Lowianum**, fine variety, and many other **Orchids**.

May be viewed two days prior to the sale. Catalogues may be had of the Head Gardener on the premises, and of the Auctioneers and Valuers, 67 & 68, Cheapside, London, E.C.

Cliffe, near Rochester.

IMPORTANT CLEARANCE SALE.

To **FRUIT GROWERS, MARKET GARDENERS, and OTHERS.**

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester, on **MONDAY, November 20**, at half-past 11 o'clock, by order of Mr. W. Horne, 5000 **Standard and Half-standard CHERRIES**; **PLUMS, APPLES, and PEARS**; 2000 of the new first early **Dessert Apple**, **Beauty of Bath**; 500 strong **Maiden** and 2-yr. trees of the new **Kitchen Apple**, **Bismarck**; 2000 2-yr. **COB NUTS**, 25,000 **Baldwin BLACK CURRANTS**, 2500 **RED CURRANTS**, 3,000 **Bbs. Lade** and **Whinham GOOSEBERRIES**, 15,000 **Sir John Falstaff RASPBERRIES**, 25,000 2 and 4-yr. **Connover's Colossal ASPARAGUS**, 80,000 **Ruskin**, **Paxton**, and **Laxton's NOBLE STRAWBERRIES**, 200,000 **CABBAGE PLANTS**, 30,000 **HOP-SETS, &c.**

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—Mr. Horne will lift and put on Rail all lots (after the Sale) free of expense.

Bagshot.

HIGHLY IMPORTANT UNRESERVED SALE of beautifully-grown and well-rooted **NURSERY STOCK**, which has been carefully prepared for removal, and specially selected for this Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, within ten minutes' walk of the Bagshot Station, on **TUESDAY, November 21, 1893**, and **TWO FOLLOWING DAYS**, at 12 o'clock precisely each day, without reserve, several acres of **NURSERY STOCK**, grown to the greatest perfection, and exceedingly well rooted, comprising a variety of **Conifers**, splendid specimens, particularly adapted for effective planting; very fine Specimen **Gold and Silver Variegated Hollies**, 4 to 6 feet; 1000 Green **Hollies**, 3 to 5 feet; **Aucubas**, **Laurels**, very fine English **Yews**, 2½ to 3 feet, and 5 to 7 feet; Irish **Yews**, 3 to 4 feet; 2000 named **Rhododendrons**, 2 to 2½ feet, bushy plants of the best and newest kinds; **Ponticum Rhododendrons** in quantity, finely-rooted and bushy, and will move well; 1000 **Spruce Firs**, 2½ to 4 feet; and a quantity of larger specimens, 4 to 8 feet, specially adapted for **Christmas Trees**; 2000 **Standard Ornamental Trees**, 8 to 12 feet, including **Purple Beech**, 10 to 12 feet; 500 **Limes**, 10 to 12 feet; 500 **Horse Chestnuts**, 6 to 8 feet; 500 **Scarlet Oaks**, 6 to 8 feet; 1000 **Black Italian Poplars**, 8 to 12 feet. Thousands of flowering **Shrubs**, large quantities of small **Conifers** for potting and boxing, and other **Stock**.

The **Stock** may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Bagshot Station, being situate on the property, facilities are presented for the conveyance of purchases, and Messrs. John Waterer & Sons, Limited, will undertake to lift and despatch any goods bought at the Sale, simply charging for time and labour occupied. Purchasers can remove their lots at any time up to December 31, 1893.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.

5000 LOTS SOLD WEEKLY.

MESSRS. PROTHEROE & MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class **HYACINTHS, TULIPS, CROCUS, NARCISSUS** and other **BULBS** from Holland; also **ROMAN HYACINTHS, LILium CANDIDUM** and other **bulbs** for early forcing, allotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

Sunbury, Middlesex.—In Bankruptcy. Re J. Gough.

By order of R. J. Ward, Esq., Trustee.

CLEARANCE SALE absolutely without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Osborn Nursery, Sunbury (1 mile from Sunbury Station), on **FRIDAY, November 24**, at 12 o'clock precisely, the whole of the **NURSERY STOCK**, comprising **Forest Trees, Shrubs and Conifers**, in variety; 1000 **Dwarf Roses**, 2 00 **Standard and Bush Fruit Trees**, **Capital HORSE, HARNESS, Two Florist's MARKET VANS, Three CARTS, FIELD ROLLER, PLOUGH, CHAFF-CUTTING MACHINE, and SUNDRIES.**

Catalogues had on the Premises, of Messrs. **WARD AND WILLING**, Chartered Accountants, **Bloomsbury Mansions**, Hart Street, W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday Next.

500 **LILium SPECIOSUM RUBRUM**, 50 lots of **GREENHOUSE FERNS, ROSES** in pots, and other **PLANTS, HARDY HERBACEOUS PLANTS**, named **NARCISSUS, CARNATIONS**, and a variety of **HARDY BULBS.**

MESSRS. PROTHEROE AND MORRIS will SELL as above at their Rooms on **MONDAY NEXT, November 13**, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.

GREAT SALE OF LILIES from JAPAN,

COMPRISING:—

10,000	LILium AURATUM
1,580	" ELEGANS, best red
3,780	" SPECIOSUM RUBRUM
1,280	" " ALBUM
1,530	" KRAMERI
2,930	" LONGIFLORUM
1,080	" MELPOMENE
160	" MACRANTHEUM

Being the contents of 240 Cases received direct from Japan; a consignment of Plants from Belgium, consisting of **AZALEA MOLLEIS, PALMS, LAURUSTINUS, and RHODODENDRONS**; 1000 **GLOXINIAS** and **BEGONIAS**, 72 **NEW CARNATIONS**, **HORACE**; 300 **Border PINKS** and **CARNATIONS**, 500 strong clumps of **SEAKALE**, fit for Forcing; **Dwarf ROSES**, choice **GREENHOUSE PLANTS**, hardy **BORDER PLANTS** and **BULBS, &c.**

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Rooms, 67 and 68, Cheapside, London, E.C., on **THURSDAY NEXT, November 16**, at 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.

ESTABLISHED and IMPORTED ORCHIDS,

From Various Sources.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Rooms.

Great Doods, Reigate, Surrey.

To **ROSE GROWERS, HORTICULTURISTS, and Others.**

MESSRS. JOHN LEES and BURCHELL are instructed by Mrs. Waterlow to SELL by AUCTION, on the Premises, on **THURSDAY, November 16**, at 11 o'clock precisely, the important **Stock** of about 3000 **EXHIBITION ROSE TREES**, established by the late A. J. Waterlow, Esq., for many years one of the most successful exhibitors of **Roses** at the Crystal Palace and other Shows. Also **STOVE and GREENHOUSE PLANTS**, including 200 **Camellias**, 24 **Azaleas**, 200 **Specimen Maidenhair**, **Farleyense**, and other **Ferns, Palms, Cytisus, Coronillas, Sempervivums, Variegated Hydrangeas, Gloxinias, Poinsettias, Dracenas, Dendrobiums, Coleus, Calanthes, Cypripediums, Chamepasc, &c.**; 500 **Strawberry Plants**, very choice sorts; 2 fine **Orange Trees**, 24 **Pot Vines**, **Fruiting Canes**, five dozen **Fruiting and Succession Pines**, **Box, Aucuba**, **Flowering and other Shrubs, Ornamental Trees, &c.**

May be viewed the day preceding the Sale. Catalogues may be obtained of Mr. J. BROWN, Head Gardener, Great Doods, Reigate; and of Messrs. **JOHN LEES and BURCHELL**, Auctioneers and Land Agents, 17, Wool Exchange, Coleman Street, E.C., and Reigate, Surrey.

To **Gentlemen, Nurserymen, Gardeners, and Amateur ROSE GROWERS.**

CHIGWELL ROW.—PUDDING LANE NURSERY.

SALE of 10,000 of the CHOICEST ROSE TREES,

including **Captain Hayward**, **Climbing Souvenir de la Malmaison** (Bourbon), **Catherine Mermet**, **Her Majesty**, **Lady Mary Fitzwilliam**, **Madame Lambert**, **Mrs. John Laing**, **Niphetos**, **Princess Beatrice**, **Perle des Jardins**, **The Bride**, **Viscountess Folkestone**, **William A. Richardson**, and others.

Also a quantity of

STANDARD and PYRAMID PEAR TREES.

Quantity of **Flower-pots**, several **Propagating Lights**, **Sow and Figs**, **Cow in Calve**, nearly new **Tradesman's Cart**, two useful **Tradesman's Horses**, **Set of Harness**, **Chaff-cutter**, **Wheelbarrow**, quantity of **Tools**, 70 **Head of choice Poultry**, including **Minorcas** and others; **Portable Stable** on **Plates**, and sundry other effects.

MESSRS. C. FULLER AND SON have received instructions from Messrs. **Bennett Bros.**, who are leaving the neighbourhood, to SELL by AUCTION, on the Premises as above, at 12 o'clock precisely, on **SATURDAY, November 18, 1893.**

On view day previous and morning of Sale. Catalogues can be had on the Premises; at The Maypole, Chigwell Row; and at the Auctioneer's Offices, **Buckhurst Hill** and **Loughton.**

Thursday Next.

MESSRS. JAMES and BAXTER will SELL by AUCTION, without Reserve, at their Rooms, 12, Bull Ring, Birmingham, on **THURSDAY NEXT, November 16**, at 12 o'clock, the **COLLECTION** of **ORCHIDS** formed by C. P. Selly Bigge, Esq., **Bourton**, **Much Wenlock**, who is giving up their cultivation; also a **COLLECTION** of **SPOREIN PALMS, FERNS, STOVE and GREENHOUSE PLANTS**, from **Private Gardens** in **Warwickshire.**

Catalogues post-free. Commissions carefully executed, and Goods despatched.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold SALES at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—
EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.
EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other Bulbs.
EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.
EVERY THURSDAY, at 11.30 A.M.—Azaleas, Camellias, Palms, Dracenas, and other Plants from Belgium; Roses, General Nursery Stock, Carnations, Dutch and French Bulbs.
EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.
EVERY THIRD THURSDAY, at 12 o'clock.—Established and Imported Orchids.

All Catalogues post free.

Messrs. JAMES AND BAXTER conduct Sales and Valuations of Nursery Stock, Live and Dead Farming Stock, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

WANTED TO RENT, SMALL NURSERY, from 1 to 3 acres, with Glass, near good market. Midlands preferred.—Full particulars to A. R. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FRUITERERS' and GREENGROCERS' BUSINESS to be DISPOSED OF, at a great sacrifice, through ill-health, in a flourishing Seaside Town, South Coast. The low sum of £75, or first offer, will be accepted for a quick sale. For particulars apply to—
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TO BE LET, on Lease, the MOAT NURSERY, with thirty-five Greenhouses, and Cottage; area 5 acres. Very small Stock. Moderate rent will be taken from approved tenant. Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

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SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for LIST, free.
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CŒLOGYNE CRISTATA, Chatsworth. Tremtham, and maxima varieties, well grown, with bloom-spikes, and cheap.
 TRUSTEES, late J. Stevenson, Timperley, Cheshire.

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 ALBERT BATH, Vine Court, Sevenoaks, Kent.

ARUMS READY FOR FLOWERING. In 48's, 32's, and 24-pots.
 By the dozen or 100. For price apply to—
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DOUBLE WHITE PRIMULAS.—Three hundred good strong plants in 48's for disposal, through want of room.
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ASPARAGUS of fine quality.—For Forcing: 5-yr. old, splendid roots, 12s. 6d. per 100; 6-yr. old, extra fine selected, 15s. per 100. For planting: 3-yr. old, 25s. per 100; ditto selected, 35s. per 100. All quotations are free on rail, and for cash with order. My Asparagus always makes the very top price at Covent Garden.
 J. J. CLARK, Market Gardener, Goldstone, Brighton.

BARR'S WINTER & SPRING FLOWERS. On application, the following CATALOGUES sent free:—
 Catalogue of Bulbs, Winter, Spring, and Summer-Flowering.
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 Collections of RULIS, 12s. 6d., 21s., 42s., and 63s.
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 BARR AND SON, King Street, Covent Garden, London.

JUBILEE, BISMARCK, and other fine APPLES; PEACHES and NECTARINES, fine standard, trained, and dwarf maiden trees; GRAPE VINES, for fruiting at once; WHITE ROSE, S. DE S. A. PRINCE, a few dozen large trees, prepared for forcing. Wholesale and retail.
 WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

EXHIBITIONS.

SOUTH SHIELDS and NORTHERN COUNTIES CHRYSANTHEMUM SOCIETY. This Exhibition will be held on WEDNESDAY and THURSDAY, November 15 and 16, in the ROYAL ASSEMBLY HALL, SOUTH SHIELDS.

The Society offer £150 in Prize Money, including £12 for 24 Incurred Blooms, and the same for 24 Japanese. Schedules now ready. Apply to—

BERNARD COWAN, F.R.H.S., Hon. Secretary.
 Harton, South Shields.

SCOTTISH HORTICULTURAL ASSOCIATION.

GRAND CHRYSANTHEMUM SHOW, to be Held in WAVERLEY MARKET, November 16, 17, and 18. NEARLY FIVE HUNDRED POUNDS IN PRIZES. Schedules and all information from the Secretary—17, South Frederick St., Edinburgh. ROBERT LAIRD.

SHEFFIELD CHRYSANTHEMUM SOCIETY.

GRAND ANNUAL SHOW, CORN EXCHANGE, SHEFFIELD, FRIDAY and SATURDAY, November 17 and 18, 1893.

£200 IN PRIZES. Schedules free on application to the Secretary—177, Cemetery Road, Sheffield. WM. HOUSLEY.

Corn Exchange, Newbury. CHRYSANTHEMUM SHOW, WEDNESDAY, NOVEMBER 22.

Last Day for Entries, November 13. Schedules and all particulars to be obtained of—
 Sept. 11, 1893. H. S. HANINGTON, Hon. Sec.

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

The SHOWS for 1894 will be held on April 4 and 5, July 11 and 12, and September 12 and 13.

CHARLES STEWART, Hon. Sec.

GRAND FLORAL FÊTE, YORK, JUNE 13, 14, and 15, 1894.

PRIZES, £350. Schedules ready in January. 13, New Street, York. CHAS. W. SIMMONS, Secretary.

DOUBLE WHITE NARCISSUS.—Splendid strain, 17s. 6d. per 1000, on rail. Sample 50 free by post for 1s. 9d.; 100 for 3s. Cash in all cases with order.
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MR. COOPER, Western Elms, Reading (late of Calcot Gardens), is the largest grower of Prize Cob Filberts in the Kingdom; 20,000 fine young Trees now ready for Sale. Pamphlets and Price Lists on Application.

NEW AND MAGNIFICENT CYPRIPEDIUM CHARLESWORTHII

(ROLFE, N. SP.)

Exhibited and unanimously awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, and pronounced by every one to be the most beautiful and charming Cypripedium introduced, causing quite a sensation at the Drill Hall, on Tuesday, September 26, 1893.

The special feature of this novelty is the dorsal sepal, which is quite distinct in appearance and colour to any other known Cypripedium, which will render it exceptionally valuable to the hybridist.

The *Gardeners' Chronicle* says:—"There was a more than usually interesting show of Orchids, but by far the most novel and beautiful exhibit was a plant of Cypripedium Charlesworthii, Rolfe, n. sp., First-class Certificate, an entirely new species, imported by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and exhibited by them for the first time, the exhibit coming in for a great amount of attention and admiration. The plant in growth somewhat resembles C. Spicerianum, and the flowers, which are borne on scapes about 3 inches in height, are unlike any other known species. The beautiful flat, upper sepal is 2½ inches wide, broadly orbicular, white, tinged, and veined over its surface with light rosy-purple; the apex alone showing a white marbling. The lower sepals are about 1 inch broad, greenish-white. The petals, which resemble those of C. insigne, are plain-edged, over 1½ inch long, yellowish, tinged with brown; the lip also somewhat resembles that of the Sylhet form of C. insigne, and is similar in colour to the petals. The staminode is very singular, resembling pure white porcelain, the protuberance in the centre being conical in form, and not a single spur, as in C. insigne. It is an extraordinary and beautiful species."

The *Garden* says:—"A First-class Certificate awarded to Cypripedium Charlesworthii, Rolfe, a distinct and decidedly novel species, which cannot

In offering this great novelty, we beg to state that we are the sole importers of this plant. We shall be very pleased to quote size, price, and full particulars. Inspection cordially invited.

CHARLESWORTH, SHUTTLEWORTH & CO., Wilmer Road, HEATON, BRADFORD

be compared with any that we can call to mind. The plant is of dwarf habit, the flowers each having a remarkably fine dorsal sepal, extra large, measuring about 2½ inches each way; the colour a pale pink, suffused with purple, and having a lighter network towards the extremities; the petals are shaded with greenish-brown, so also is the pouch, which is rather small. A greater novelty amongst the species of the Slipper family has not been seen for a long time. From Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford."

The *Journal of Horticulture* says:—"A very remarkable introduction from the East Indies; it is a distinct and beautiful species, very dwarf, with long narrow leaves. The flower stem is only 3 to 4 inches long; the lip is short, green, heavily suffused with bronzy-brown, and the dorsal sepal is very noteworthy—it is broad and rounded, and the colouring is a beautiful soft rose, delicately veined; the staminode is pure white. A feature of the leafage are the rows of dots on the reverse side. The species is a great acquisition (First-class Certificate)."

The *Gardening World* says:—"An interesting collection of Orchids was exhibited by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, including a handsome new species, named Cypripedium Charlesworthii, from the East Indies."

CHRYSANTHEMUM CUTTINGS, Early and Late Varieties. Price per 100 or 1000 to SHIPPEYFIELD, Florist, Hampton Hill, Middlesex.

LOBELIA cardinalis, Queen Victoria, good plants, 10s. per 100, 1s. 6d. per dozen; or exchange for Carnations.

GARDENER, Eden Hall, Langwathby, R.S.O.

SEAKALE, for Forcing, superior selected, Crowns, 80s. per 1000; under 500, 9s. per 100. Cash with order.—**ALFRED ATTWOOD**, Grower, removed to 24, Lubeck Street, Battersea, S.W.

FOR SALE, cheap, 30 nearly new **IRON TREE GUARDS**, suitable for Parks.

Apply, GARDENER, Down End, Fareham, Hants.

FOR SALE, Standard **DAMSON TREES**, well grown, well rooted, 6 feet stems, fine trees. 700 at £8 per 100. Inspection invited.

Apply to C. WALKER, Rudgwick, Sussex.

OAKS (English), **BEECH**, and **LIMES**, Standards, all sizes, from 6 to 12 and 14 feet, clean and good. **PRIVET**, Oval, all sizes up to 3 feet; **EVERGREEN**, 1 to 3½ feet. **ASH**, 3 to 6 feet.

B. R. DAVIS, Yeovil Nurseries, Somerset.

WINTER-FLOWERING CARNATIONS, well-rooted cuttings, potted now will make extra large plants next season. Miss Jolliffe Improved (best flesh-pink), La Neige (best white), 4s. per dozen, 15s. per 100; Winter Cheer, finest scarlet, 4s. 6d. per dozen, 18s. per 100; Madame A. Warocque (scarlet), Malmaison, 9d. each, 7s. 6d. per dozen. Cash with order.

CRANE AND CLARK, The Nurseries, March, Cambs.

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RAPESEED and **AGRICULTURAL WHITE MUSTARD**. **H. AND F. SHARPE** have to offer fine samples of **RAPESEED** and **WHITE MUSTARD**, suitable for Field Culture. Special quotations and samples on application.

SEED GROWING ESTABLISHMENT, WISBECH.

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PLANTS.—Trade Ferns, in 2½ inch pots, Stove and Greenhouse, 30 best selling sorts, 12s. per 100; Stores, 6s. per 100; large ditto, in 48's, 10 best selling sorts, 6s. per dozen. **Adiantum cuneatum**, in 48's, for cutting (value in fronds), 6s. and 8s. per dozen; ditto, for making large plants quickly (bushy), 16s. and 20s. per 100. **Aralias**, **Grevilleas**, **Solanums**, **Cyperus**, in 48's, 6s. per dozen. **Ficus**, **Palms**, **Dracenas**, **Erica hyemalis**, and **E. gracilis**, 1s. each. Best (Trade) Value, packed free, Cash with Order.—**J. SMITH**, London Fern Nurseries, Loughborough Junction, London, S.W.

EUCHARIS AMAZONICA, extra fine Bulbs, 9s. per dozen.

CYCLAMEN PERSICUM MAGNIFICUM, in large 60's, 4s. per dozen.

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HOT-WATER BOILERS,

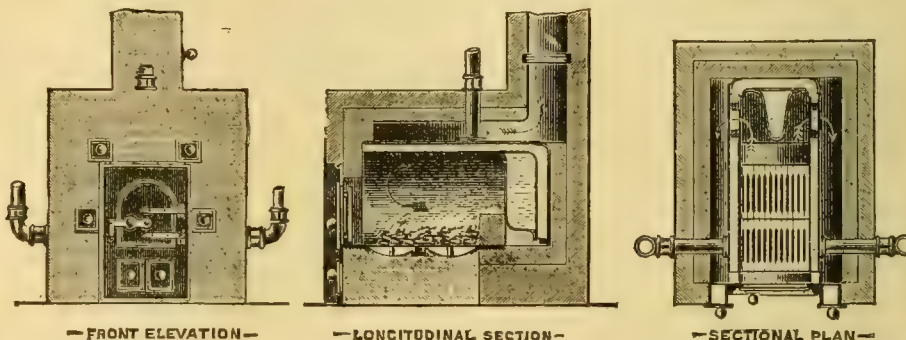
Others with TUBES, SHELVES, & HOLLOW or ORDINARY CAST-IRON GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

MUNICIPAL PATTERN BOILER, THE BEST EXTANT.



The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

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	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep	Calculated to heat 4-in. piping as follows:—	1000 ft. 1280 2200 4000 7000	Price £15 0 0 " 21 0 0 " 32 0 0 " 60 0 0 " 85 0 0
M B 1	4 0 " by 2 0 " by 2 0 "			
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Every description of GREENHOUSES, LIGHTS, &c.

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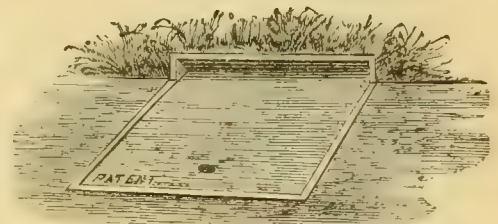
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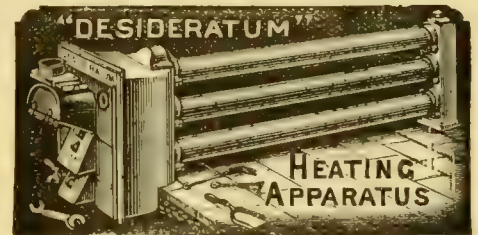
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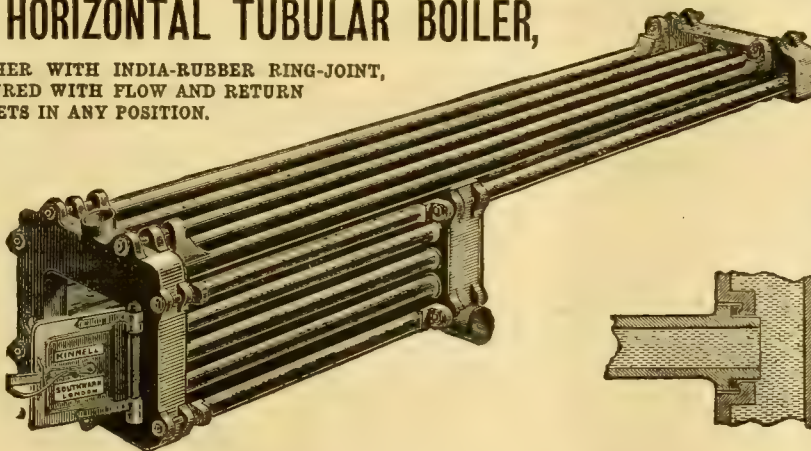
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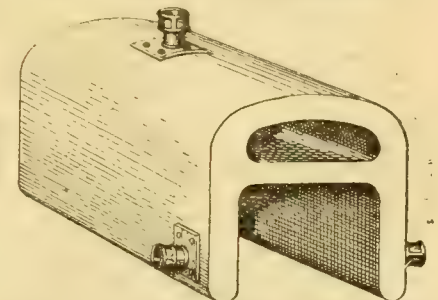
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This Boiler has special advantages over any other of this type manufactured; the configuration of the centre casting divides the top connecting-pipe into two sections, gives increased waterway, and is removable without taking off back casting. No other Boiler has this a vantage.

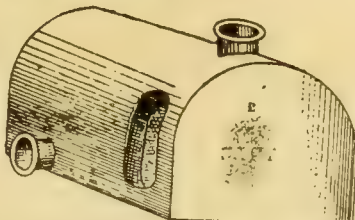


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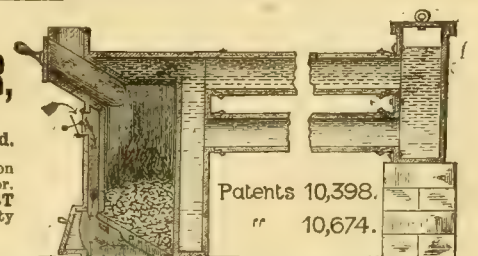
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- ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
 " WIERI LACINIATUM, 10 to 14 feet, girth 3 to 5 inch.
 " NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
 " REITENBACHI, 12 to 14 feet, girth 4 to 5 inches.
 " SCHWEDLERI, 12 to 18 feet, girth 4 to 8 inches.
 " WORLEYI, 12 to 14 feet, girth 3 to 6 inches.
 BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
 BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
 CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 6 to 7 inches.
 CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
 " Double White, 14 to 16 feet, girth 6 to 8 inches.
 " Scarlet, 12 to 18 feet, girth 4 to 10 inches.
 " Brioti, 10 to 14 feet.
 ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
 " Guernsey, 16 to 18 feet, girth 7 to 9 inches.
 LINES, 12, 16, and 20 feet, girth 3 to 10 inches.
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 LIQUIDAMBAR, 6 to 10 feet.
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- BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
 " Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
 BIRCH, Young's Weeping, Pyramids and Standards, 8 to 12 feet.
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 ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
 LARCH, Weeping, Pyramids, 8 to 10 feet.
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SPECIALITY—
 FOLIAGE PLANTS
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 LARGE PALMS.
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600 ACRES.

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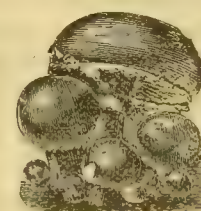
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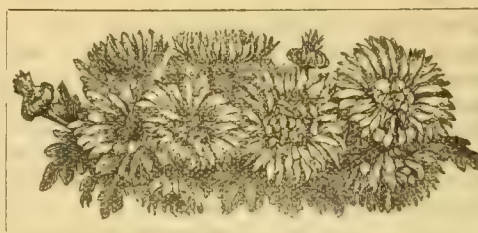
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 11, 1893.

ROSES IN 1893.

WHATEVER may have been the character of the past season, there are some few things which have come out tolerably clearly; in the first place a good deal has been said about the deterioration of Roses, but the past season has brought out very distinctly that some of our oldest Roses are as good as ever they were. I think it is very possible that the idea has arisen from the fact that a grower has received some plants which are not equal in strength and freedom of flowering, and I do not see how it can be otherwise. An amateur can easily select the buds which he uses, but not so the nurseryman; he has an immense stock to propagate, and his Rose man cannot stay to examine each shoot that he cuts. He leaves out, no doubt, what he considers weakly ones, but he cannot afford the time or care to select them as the amateur does; the consequence is, that many buds are used which a private grower would reject, and from these come the plants that lead the amateur to believe that Roses generally deteriorate. I have combated the same notion as to the Gladiolus, and am persuaded that my contention with regard to that flower is correct. The past season has shown us some of our oldest flowers in grandest form. Let us take a few of these:—Beauty of Waltham, which was sent out from Waltham Cross upwards of thirty years ago, was shown as well as it has ever been; General Jacqueminot, which came out ten years before that, is as bright and clear as ever; Horace Vernet, one of the late M. Guillot's Roses, more than a quarter of a century in cultivation, attracted the attention and drew forth the eulogiums of all who saw it; the bloom for which the Messrs. Harkness & Sons carried off the Silver Medal at the Crystal Palace (the best hybrid in the nurserymen's class) was a marvel of beauty, of colour, form, and size. I do not say it was the best Horace Vernet ever shown; there rise up before me in memory the many gorgeous blooms which I have seen, but I can say this, that I have seen few that could surpass this perfect flower. Then, again, Prince Arthur, a very near relative of Gen. Jacqueminot, sent out by Mr. B. R. Cant, fully maintained its reputation. It is remarkable that three out of every four Roses which I have mentioned, are dark flowers, which we did not expect would have been so good in such a season as the past.

Then, again, I think that 1893 has shown us in an increased degree the value of Tea Roses; truly, like all Roses, their first blooming season was comparatively brief, but when July rains came, they made a grand start for growth, and during the months of September and October quantities of good—and even exhibition—blooms could be gathered; and although the closing days of the month have come with a sharp touch

of frost, they are still making a great effort to bloom. Even now, on November 1, there is a prospect of bloom should the weather continue fine. No doubt they have rejoiced in the bright sunshine, and have well repaid any care bestowed upon them; and after such a splendid October as we have had, we may hope they will be found in good condition for another year.

Again, I have been struck by the remarkable recuperative power of the plants of Roses generally. My small collection consists exclusively of dwarfs, and when I looked on my beds in July, and saw very little sign of those strong shoots upon which we depend for the next year's bloom, I began to think with many of my fellow rosarians, that pruning would be a comparatively short work. In this, however, I was mistaken; some, it is true, have not made strong growths, but, on the other hand, shoots of from 5 to 7 feet long are to be found, and this notwithstanding that all my plants were lifted last autumn, and so a check was given to them. Truly, wherever dwarf plants are used, one need never despair after the severest winter or driest summer, of seeing vigorous and healthy shoots. It has not been a favourable season for the purely garden Roses; there are always June Roses, and consequently this season were soon gone; the beautiful single Roses especially, always short-lived, were more so than usual in 1893. It is true that Lord Penzance did exhibit some of his most interesting hybrids, but not at all in the same manner as in the previous year; enough, however, was seen of them to show that in the year to come they will be to all who can afford them space a source of much pleasure. Some of the best of his varieties have passed into the hands of Messrs. Keynes, Williams & Co., and will be sent out next year. These garden Roses are coming more and more into favour, though I do not think they are ever likely to oust the many grand exhibition varieties in growth. Any of these two are of a climbing character, and consequently require more room than many amateurs are able to give to them; but all will at any rate try to find a place for Mr. Turner's Crimson Rambler. The season so utterly exceptional was sure to produce some curious results in the way of prize-taking; there have been seasons when a strong amateur has "made a rush" at the beginning of the season and continued it until the end, but it has not been so this year; it was not one favourable to amateurs, and consequently they can give no such record. It was otherwise with the professional grower; before a show was held, all who talked over the subject said "This will be a year for the Yorkshire men," but I do not think that anyone anticipated such a record as that of Messrs. Harkness & Sons of Bedale. They commenced showing on June 24 at Reigate, and ended their season on September 1 at Haydon Bridge; during that time they had exhibited at every principal Rose show in the kingdom, including two National Rose Society's shows, Bath, Gloucester, Hereford, Manchester, Woodbridge, Earl's Court, and Chiswick, and carried off every 1st prize for 72's that was offered, both of the Challenge Cups of the National Rose Society, the Chiswick, Woodbridge, and two other cups, one gold medal, and eight silver. This is a record which no firm has ever equalled, and which the Yorkshire one will certainly never exceed. I should like also to mention the success obtained by Mr. Mount of Canterbury, not because it at all equals that of the firm already alluded to, but because it shows what pluck and energy can do in a season so unfavourable to a southern grower. If these prizes were mainly gained in a class in which the northern firms were deficient, namely Teas and Noisettes, commencing on May 9 with 48's, and ending July 17 with Halifax, he went north, south, and west, exhibiting in good form at all the principal shows, and securing a large number of 1st and 2nd prizes, and, indeed, I recollect seeing a very good stand of his at the Agricultural Hall on August 26.

In one respect the season has been favourable to the various Rose societies in the kingdom, in that

the exhibitions were almost uniformly held in brilliant weather, the one exception being, I believe, the day on which the National Rose Society held its northern show at Worksop; and yet with all I am afraid that many of them are in a very shaky condition, some of them being in a moribund state, even if they have not already passed into non-existence. As these die out, however, ever and anon some fresh ones occupy the vacated posts; they, too, will flourish for awhile, and then, when changes take place in the personnel of the officials or exhibitors, they, too, will succumb—still, I hope that the interest, to which all parts of the kingdom bear witness, will help to maintain the Rose in the proud position it has already reached, and that the day may be far distant when the Rose ceases to be in all respects the Queen of Flowers. *Wild Rose, November 1.*

NEW OR NOTEWORTHY PLANTS.

LÆLIO-CATTLEYA × ALBANENSIS,

Rolfe, nat. hyb.

ANOTHER very interesting natural hybrid has appeared among importations from Bahia, this time in the establishment of Messrs. F. Sander & Co., of St. Albans. The two previously known ones are *Cattleya* × *Whitei*, derived from *C. Schilleriana* and *C. Warneri*, with which it was found growing in company, and *Lælio-Cattleya* × *Gottoiana*, derived from *Lælia tenebrosa* and *Cattleya Warneri*, which appeared in an importation of the former. The present one is also a *Lælio-Cattleya*, as is evident from its very unequal pollinia; and *Cattleya Warneri* again suggests itself as the only possible *Cattleya* parent. The second parent was evidently *Lælia grandis*, which grows in the same district. The hybrid has longer pseudobulbs than *Cattleya Warneri*, which it otherwise much resembles in habit. The flowers are nearly 5 inches in diameter, the sepals and petals light rosy-mauve, the front lobe of the lip rosy-crimson, and the disc purple-crimson, with some similar radiating veins extending towards the rosy-lilac margin. The sepals are linear-lanceolate, 2½ inches long, and ¾ inch broad, with revolute margins; the petals rhomboid, very undulate, and 1½ inch broad, and the lip entire, cribo-undulate, and 2½ inches long. The smaller flowers and very undulate petals show the influence of *Lælia grandis*, while the colour approaches that of *Cattleya Warneri*. The plant is evidently intermediate between the two species named, which grow in the same country, and thus the origin of the hybrid is pretty evident. It is a very interesting and handsome plant, whose appearance throws considerable light on the habitat of *Cattleya Warneri*, which hitherto has not been clearly defined. *R. A. Rolfe.*

FURCRAEA ALBISPINA, Hort. Palermo.*

This plant is now flowering for the first time at Kew, with the other *Furcraea* and *Agaves* in the Cactus-house. It was received under the above name not long ago from the Botanic Garden of Palermo, but I cannot find that the name has ever been published. It is one of the dwarf kinds, allied to *F. depauperata* and *undulata*, and it is not likely that it would be of any use for fibre purposes. We do not know its native country, but doubtless it is Central America.

Leaves fifteen to twenty, in a sessile rosette, 1 to 1½ foot long, 2 inches broad at the middle, moderately firm, dull green, smooth on the face, scabrous on the back; marginal prickles small, deltoid, greenish-white. Peduncle, exclusive of the panicle, 5 feet long. Panicle rhomboid, the longest central branches not more than 6 to 8 inches long; flowers all solitary, pendulous. Ovary glabrous, nearly 1 inch long. Perianth-segments oblong-

* *Furcraea albispina*, Baker, ex Hort. Palermo.—Acaulis, foliis 15–20 dense rosulatis ensiformibus subcoriaceis sordide viridibus pedalis vel sesquipedalibus facie levibus dorso scabris aculeis marginalibus parvis viridulis; pedunculo 5-pedali; paniculae ramis patulis semipedalibus; floribus solitariis; perianthii segmentis oblongo-lanceolatis viridulo tinctis.

lanceolate, white, tinged with green; the outer ½ inch broad at the middle, the inner ¼ inch. Stamens half as long as the perianth-segments. *J. G. Baker.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA LABIATA VAR.

A SINGULAR flower of *Cattleya labiata*, which it is probable may be borne more or less habitually by the plant from which it was taken, comes from Mr. Wm. Hamilton, gardener to Hamar Bass, Esq., Birkley Hall, Burton-on-Trent. The segments are all as broad as the petals usually are, the three upper ones resembling petals, and the three lower ones labellums. That is to say, the upper sepal has assumed the form of the petals, and the two lower sepals that of the labellum, even to the crimping of the margins and the yellow colour extending upward from their bases. Its colour is very bright, and if it keeps constant, it will be a singular novelty. It was obtained out of an importation by Messrs. F. Sander & Co.

From various correspondents come flowers of *C. labiata*. One of three (No. 1), all good, from the collection of J. Broome, Esq., Sunny Hill, Llandudno, who grows his *Cattleyas* and *Lælias* to a high state of perfection, is the richest in the colour of its labellum of any, the front lobe of the lip having the rich dark velvety purplish-crimson of *C. Hardyana*.

CYPRIPEDIUM LEEANUM ×.

In the race for the newest thing the above beautiful crossbred Orchid is not so often lauded as are others which in beauty are its inferior. There exists great variety in it, it having been raised independently in several places, and the progeny vary according to the qualities of the varieties of *C. insignis* and *C. Spicerianum* made use of. Several very distinct forms are flowering in Mr. G. C. Raphael's collection, Castle Hill, Englefield Green. One form is in colour like the original *C. × Leeanum*, but the flowers are much larger, while another has the large white upper sepal marked with lines of purple blotches over the greater part of its surface, resembling in that respect *C. × L. Masereelianum*, but the colour is brighter than in that variety and more as in *C. × L. superbum*.

VANDA CÆRULEA, BURMESE VARIETY.

Vanda cærulea is a widely-distributed species, and the quality of the flowers varies much, according to the district in which they were collected. The best that I have observed, taking an entire importation, is the Burmese variety, and the best and most beautiful example of *V. cærulea*, a plant which is at present flowering in Mr. Raphael's collection, Castle Hill, Englefield Green. All the segments are as nearly circular as their slightly-stalked bases will admit of, and each segment overlaps the other, so as to form a perfect flower, rather more in breadth than in length. The upper sepal and the petals are of a bright violet-blue colour, with slight patches of white showing between the veins. The lower sepals are white, closely veined and shaded with blue, and the labellum is dark violet. It is difficult to imagine a more beautiful flower. It was imported by Messrs. Hugh Low & Co., of Clapton. *J. O'B.*

HOW MAY CHRYSANTHEMUM EXHIBITIONS BE IMPROVED?

A good deal was written a year or two ago about the size of the stands for exhibiting cut blooms of Japanese Chrysanthemums; it even went the length of papers being read, and discussions raised thereupon. This was all very well as far as it went, but it did not go far enough. The newer introductions of the Japanese varieties are mostly considerably larger than those which have been in cultivation for some years previously, and when these immensely large flowers were arranged in ranks upon the stands without any foliage, they were in many instances

crushed in so closely that the form of the flowers could not be observed by the judges. Under such circumstances, it did not need a very long paper, nor much discussion, to find a remedy. The usual regulation-stands were too small, and needed enlarging. This was an improvement in that direction, but it was not enough, and many Chrysanthemum amateurs are not satisfied with the formal way of staging the flowers in long ranks denuded of every bit of foliage, and in many instances the groups of plants are as formal as the cut flowers. The plants are placed close together, the stems oftentimes being denuded of leaves, so that the dwarfier plants are required to hide the bare stems of the taller ones behind, and the flowers at the top are placed almost as closely together as those in the stands—a really artistic group is seldom seen. I am not inclined to blame either gardeners or amateurs for any shortcomings in respect of the way in which the flowers and plants are exhibited, and it may be that many difficulties

wooden or tin cup, and if it is an incurved bloom, the centre of it and many of the petals have to be pulled out. The art of dressing is quite as essential as the art of cultivating the plant. The late Mr. Edward Sanderson and his brother Charles were both adepts in the art of dressing; their patience was remarkable. Mr. Edward told me that he worked upon one bloom an entire afternoon before he had the petals arranged to his satisfaction. In the natural arrangement I have alluded to, the dressing was out of the question. There was no room for blocks and cups with other etceteras; there was a ground-work of fresh green moss, and besides the foliage of the flowers, a small Palm or Fern was dropped in here and there, with the russet autumn tints of trees and shrubs. The 1st prize collection was from Mr. E. Rowbottom, gardener to H. R. Williams, Esq., The Priory, Hornsey, and was greatly admired. A member of the committee of the National Chrysanthemum Society, who admired

single Chrysanthemum blooms, the flowers as tastefully arranged as it was possible for them to be, three blooms in a bunch. This stand was exhibited by a well-known grower, Mr. Geo. Carpenter, it contained Bessie Conway, with white flowers, the tips of the petals lightly tipped purplish; Miss Crissy, bright chestnut-brown; Mrs. D. B. Crane, peculiar pinkish-salmon; Sir T. Symonds, yellow; Miss U. Wilde, purple, the base of petals white; Miss Mary Anderson, pinkish-blush; Rev. W. Renfrey, crimson, tinged claret; Purity, with tips of petals incurved; Jane, pure white, and of this a yellow sport was shown; Oceana, bluish; Lady Churchill, bright reddish-brown, peculiar fluted petals. The above lot of single varieties in triplets formed the prettiest exhibit in the show, and it is easy to see how vastly the flowers would have been improved had they been set up on a groundwork of green moss and foliage, instead of upon a painted board.

The public who visit Chrysanthemum exhibitions are ever craving after something new, and a repetition of the same dull uniformity year after year soon ceases to please, interest, or instruct; so that, even taking it upon the low standard of the commercial aspect, it would be to the interest of exhibition promoters and managers to improve or add something new to the exhibitions. Good culture will always have to be the primary object in view, but the best cultivated flowers may have their beauties sadly marred by being badly set up; and I am convinced if the interest in Chrysanthemum exhibitions is to be sustained, that some improvement must be made in the manner of exhibiting cut blooms, and the best way to obtain this is to note any new and good thing in exhibiting, and add them to the schedule. *J. Douglas.*

AMERICAN PARKS AND GARDENS.

(Continued from p. 553.)

DOSORIS AND HYDE PARK.—"Have you spent much time in the neighbourhood of New York?" asked the interviewer of Mr. Nicholson on the occasion of his recent journey.

"Not so much as I should have wished to spend. I was entertained for a day by Mr. Charles A. Dana at his beautiful home on the island of Dosoris, on the north shore of Long Island, where he has a wonderful collection of trees and shrubs. There are many things which are thriving here which will not grow further north. The grounds are rich in Conifers, and in rare exotic trees which have been collected from all parts of the world, and the collection is well cared for by his head gardener, William Falconer, who is another old Kew man. Mr. Dana is one of the most intelligently-interested men on the subject of trees and tree-planting that I have met in America, and his example ought to be of great service to American horticulture.

"Very enjoyable, too, was a trip I made up the Hudson River to Poughkeepsie, and then by carriage to Hyde Park, the old estate now possessed by Mr. Walter Langdon, but which was planted by the famous French landscape gardener, Parmentier, for Dr. Hossack, in the early part of this century. Its age gives it a special interest in a country where everything looks so new to a visitor from the Old World. The place contains many fine old trees, notably one of the best Gingkos I have seen here. There is a splendid growth of Chestnut, Oak, White Pine, and Hemlock, and the best example of Pitch Pine which I have ever seen. The situation, on a natural terrace overlooking the river, with a distant view of the Catskills towards the north, and an equally attractive outlook down the river, is unsurpassed in grandeur and beauty. It is a place which every Englishman who visits New York should see, for its natural features are superior to those of any place which I have visited, and its original beauties have been carefully preserved and emphasised by judicious and skilful management. It is certainly an admirable example of landscape gardening on a broad scale, where appropriate foregrounds have



FIG. 96.—CATTLEYA LABIATA. (SEE P. 594.)

will crop up in the way of the managers of Chrysanthemum exhibitions when an effort is made to alter the present system of exhibiting. The best way would be for local societies to do a little each year in the way of introducing a more natural system, especially in the classes for cut flowers. A most successful attempt was made this year by the Highgate Chrysanthemum Society. They offered prizes for a collection of twelve varieties of cut blooms arranged in bunches, limited to five blooms in each bunch, the flowers to be shown with their own foliage, and the foliage of other plants to aid the effect at the discretion of the exhibitors. The new departure (although this is not the first year) has been a decided success. The arrangement of the flowers which obtained the highest awards was admirable. They were good examples of the best varieties of Japanese and incurved, each flower being cut with stems 1 foot in length, less or more, and furnished with bright green foliage; and here came in the first improvement, for the first thing an exhibitor of cut flowers on the old system does is to strip off all the beautiful leaves, the setting of the jewel—the flower. The next process is to shave off the knobs on the stem, so that it may pass into the stem of a

the group as much as I did, thought it would be well if the National Society would follow the example of Highgate, and offer prizes for similar classes. The 2nd prize group was also worthy of high commendation: it was put up by W. S. U. Hayter, gardener to Wm. Hannsford, Esq., Tenterden Hall, Hendon, and the exhibitor kept more to the lines of the schedule, which was to exhibit the blooms in bunches as cut from the plants. In fact, there was some suggestion that the 1st prize lot should have been disqualified, because the exhibitor had not adhered strictly to the terms of the schedule, by distributing his flowers too much, and did not strictly confine them to bunches. I think when an artistic arrangement of flowers is contemplated, it would be a grave error to fetter the exhibitor. I would suggest that each one have a certain space allotted to him on the table, and that he fill it with flowers and foliage in any way he pleases. I am writing this with the Highgate exhibition fresh in my memory, and to-day I noted at the Crystal Palace exhibition a number of stands of Pompon Chrysanthemums arranged as the flowers always are, with long stems and fresh green foliage. Besides the Pompon varieties, there was also a stand of

been prepared for the magnificent distances. It seems a pity that this estate could not be preserved for public use as an example of domestic rural landscape, in connection with a noble river and equally noble mountain ranges."

Parks in America.—Something having been said in regard to city parks, Mr. Nicholson said: "I went to Central Park on the first morning after my arrival, and the superintendent, Mr. Parsons, very kindly accompanied me to points where I was enabled to get the most comprehensive view of it. Certainly your city may well be proud of it, because it is as perfect an example of pastoral scenery as can be conceived of in the heart of a great city. The art which has provided such a sense of spaciousness and breadth within such contracted and rocky limits is certainly admirable. The masses of flowering shrubs are in my view an admirable feature of your park, and they are growing remarkably well. There are few of what are known as bedding plants in it, and these seem to be in their proper places. Among the flowers the Water Lilies were especially attractive, because it was the first time I had seen them in such perfection in the open air. I found afterwards in Washington, and especially in the parks of Chicago, however, that they were equally well and perhaps better grown in those cities. In my view, however, the plantations seriously need thinning, and many of the trees should be cut out. They were originally planted too thickly, and they have been left to crowd each other already too long. You cannot grow six trees on thin soil where there is only room or nutriment enough for two, any more than you can bring up a family of half-a-dozen children on food which two healthy ones could consume. The Conifers seem to be short-lived here, and the increasing smoke and dust, as the city thickens about the park, will make it still more difficult to grow them in the future, and it seems to me that most of the Norway Spruces should be rooted out at once. Unfortunately, my visit to Prospect Park was made the morning after the cyclone struck it, and it was strewn with branches of trees which the wind had wrenched off, but I could see the beauty of great stretches of meadows with the old native trees on their borders. This was peculiarly beautiful to me, because it is the nearest approach to what is known as park-like scenery in England that I have seen in this country. The great open meadow of Washington Park, Chicago, which contains 100 acres, is larger than any other I have seen, but the bordering trees have been trimmed up from the ground so that the visitor can see under them from the roads, and the indefiniteness and mystery which the boundary plantations should furnish are lost. The trees in Lincoln Park have been abused by the axe in the same way, much to the regret of the present competent superintendent, Mr. J. A. Pettigrew, who is doing all he can to correct the errors of his predecessors. Morning-side Park in this city was a great surprise to me. I had scarcely ever heard it named, and yet it furnishes an opportunity which any enterprising planter would long to embrace. In other places rocks have been piled up to the height of a few feet at great expense, but here Nature has given you these noble bluffs facing the east, where could be made the noblest rock-garden in the world.

"Perhaps I ought to add here that the exhibition of North American woods in the Museum of Natural History, adjoining Central Park, was of great interest to me. I am familiar with the principal botanical museums of Europe where such exhibits are displayed, and it is within bounds to say that the forest wealth of no other country is anywhere displayed so completely as that of America in this museum. The collection is more remarkable since it represents the products of all America north of Mexico, a great region, which has many distinct climates and floras. The people of New York are no doubt proud of this collection, but the entire United States have reason to be so, because it is in every way a national collection. One of the things which has struck me in America was the fact that,

among the rich men of the country, there are so many public-spirited citizens who are willing to expend their money for the general enlightenment of the people. The name of Mr. Jesup, of whose generosity the collection is a monument, will always be gratefully remembered by lovers of trees and students of dendrology." *New York Daily Tribune.*

(To be continued.)

CHRYSANTHEMUMS ABOUT LONDON.

RYECROFT NURSERY, LEWISHAM.—Wonderful has been the growth and development of this Chrysanthemum nursery, belonging to Mr. H. J. Jones, and situate at Hither Green, about 1 mile from Lewisham Junction. No energy, skill, or money has been spared in bringing the collection into the front rank, and the position it holds, and the extraordinary display now to be seen here, cannot but be a source of very great satisfaction, not to say pride, to the proprietor. When notice was made of this nursery last season in our columns, it was one of the finest in town; but this year, in addition to the home collection, the whole of the stock belonging to Messrs. Pitcher & Manda, Hextable, Swanley, Kent, has been purchased, representing 3000 plants, and including a first-rate lot of seedlings and novelties, which have been selected from the whole of the United States by the American branch of the firm. The American seedlings are much more disposed to "novelty" production than our own, and are sure to contain more first-class varieties than are evident even now. At the present, the whole collection may be seen at its best; the choicest and best plants have been placed in a span-roofed house by themselves, and number nearly 4000. The arrangement is a decided improvement upon that usually followed, and a serpentine walk through the centre takes the place of a straight one. Such a floral feast can rarely be seen as is presented, and the immense number of seedlings and novelties is far beyond the possibility of notice here, so we must confine ourselves to some of the more prominent ones, as seen on the 31st ult.

Primrose League is a seedling primrose-coloured Japanese only just christened. The flower is very large, and the florets are much after the style of Florence Davis in habit, and recurved slightly at the points; it is a very pretty flower, and will become popular. Comte F. Lurani (Japanese) is rose-coloured, shaded white, petals broad, and flower very full in centre; one of last year's continental varieties. A very fine reflexed Japanese is Rosy Morn; as we saw it there were four very fine blooms of good depth on a plant—in colour it is rosy-pink. President Borel is a reflexed Japanese of brightest rose, with pale yellow centre; a very fine flower. Creole is an American-raised Japanese, having very broad petals, and the deepest-coloured variety we have yet seen. Thomas Hayler, one of last year's production, is a loose-habited Japanese, the florets falling down almost perpendicularly; in colour it is magenta, with silver reverse, and is very distinct. Then is very striking splendid yellow Japanese, called The Tribune, which received a Certificate from the National Chrysanthemum Society this season; the yellow is almost primrose, and changes to white, and the flowers are large, with florets broad and incurving.

Dr. H. D. Hull is one of the American seedling Japanese, of very distinct appearance in colour, which is almost white, excepting a faint heliotrope blush. Madame Octavie Mirbeau is a Japanese of continental origin, white and rose, edged with amaranth; the florets are very long. Mrs. Hillier is a large deep Japanese, cream-coloured, with golden centre; and Majestic, a new American variety, something like Hamlet, but of better colour and longer petals. A very pretty Japanese raised here, cream, with yellow centre, has been named Mrs. H. J. Jones. One of the seedlings from the Hextable collection has been named Golden Plume, and will be much liked as a good yellow, broad-petalled Japanese. Silver Cloud, a new American

variety is of very distinct appearance, and the colour indescribable; it would be white, but for the very faintest flush of some form of red. A good flesh-coloured one has been named after Mr. Whittle, the clever Chrysanthemum grower at the Right Hon. Mr. Goschen's seat at Shirley. Mrs. Denne is an incurved Japanese of violet-rose, with very long florets. Whole batches of the splendid golden sport from Vivand Morel, called Charles Davis, are here; it is a very fine acquisition, and it received a First-class Certificate when shown by Mr. Jones. The most distinct of all the hairy novelties we have seen this season is one called Hairy Wonder. It is a Japanese, very hirsute, and in colour a kind of red-chestnut; this will be sure to please the admirers of this section.

The number of incurved novelties is never large, but there are several to be seen in this collection. The first place may be given to a white English-raised seedling not yet named; it has splendid form, and is pure white, but in size it will, no doubt, improve another year. Santel of '93 is named after the raiser, and is a first-rate hairy incurved Japanese. The hairs are on the reverse, and consequently displayed; in colour it is magenta, with silver reverse. Brookleigh Gem, another new one of this section, is a curious mixture of white and violet.

We noticed no new one in the Anemone section or Pompon, but a good decorative variety of golden-yellow, which does not show the centre at any stage, has been called Mrs. Jewell; the flowers are round and deep. Of the unnamed seedlings we cannot speak, except to say that they are numerous, and of the most promising appearance. Other new ones that may be seen elsewhere, such as J. Shrimpton, G. W. Childs, Beauty of Exmouth, Col. W. B. Smith, Lord Brooke, F. Jameson, Baron Hirsch, &c., are all well done, as are also the best of the older varieties.

Chrysanthemum-lovers should not by any means lose so valuable an opportunity to study a fine and complete collection.

THE EARLSWOOD NURSERIES, LTD.

A call at Mr. Wells' nursery at Earlswood, near Redhill, showed that a large number of plants have again been raised this season. The plants are not grown so much with a view to exhibition as for the supply of cut flowers, and accordingly many of the plants have not been subjected to the amount of thinning generally practised. A large quantity of Miss Marechaux, a marble-white incurved variety, is grown for giving blooms at Christmas—as many as 1000 plants are kept for this purpose; also a number of a white Japanese seedling of last year, which has been named Flossie, are kept for a similar purpose. Mr. Wells thinks that this will prove to be one of the very latest of this section. The bloom is a good one for decorative purposes. A seedling incurved may be good another year, but at present it would be unfair to judge it, the plant being but weak. Roslyn is a very large American seedling of last year, of shrimp-pink, rather coarse-looking, if big flower.

The collection contains most of the newer varieties, but Mr. Wells' chief interest appears to be in the production of new single varieties, a section which he thinks might be accorded a little more general cultivation. They are certainly very pretty, and make up much more lightly for small arrangements or for the dinner-table than any of the others. One of the best of these, although not new, is Miss Mary Anderson, a pure white one, which, together with a variety called Miss Rose, a pink flower, has been used as a parent in much of the crossing. Roumania is rose-coloured, shaded white; and Emily Wells, a fine large pink variety. Yellow Jane is a good old yellow sort, and Rev. W. E. Renfrey, a deep crimson. Carrie Wells is very fine—it is crimson, with pale gold reverse. Princess May is one of last year's seedlings—in colour it is crimson-amaranth, and the richest of any single. Foxhunter, a seedling just named, is very red, with the tip of each floret gold-coloured. A pretty magenta flower is Bertha Jinks, and the florets curl attractively. One of the

best of last year's new ones is Purity, of pure white, florets broad, and slightly incurving; eye green and large, habit dwarf and sturdy.

WOODHATCH LODGE, REIGATE.

There are few who take a greater interest in their garden than does T. B. Haywood, Esq., of Woodhatch Lodge, near Reigate. Although extremely fond of Orchids, and possessing several houses containing capital specimens of choice species, his interest extends to all of the plants he cultivates, and particularly to Chrysanthemums, in which he is ably seconded by Mr. C. J. Salter, a most skilful and energetic gardener. The two houses in which these are just now arranged present a most magnificent display, the plants are splendidly grown, the blooms large, well-finished, and of good bright colours. Of course the collection consists of the choicest varieties only, and many seedlings of different growers that have sent them to be tested under Mr. Salter's careful treatment. Every season sees the suppression of some varieties whose only fault is, that another one has arisen which has taken the place of the discarded one, and in a better degree. At the same time, however, old varieties, if good, are not slighted in order to make much of novelties, unless they can show undoubted superior merit. Thus, many old favourites are to be seen, whilst some novelties that are now included will be denied another season the favour so lately accorded them.

In noticing a few of the varieties, therefore, we shall include some that are well known, and which attracted as much attention as the new ones. That first-rate white Japanese, Miss Anna Hartshorn, was in fine form, with good rich-looking florets; the variety seems likely to hold its place for a considerable time. Close to this is the golden or bronze sport from Vivian Morel, named Chas. Davis, true to the type in everything but colour, and an acquisition. Next there is Mrs. Harman Payne, bearing huge flowers of white and rose; and E. Molyneux, really fine blooms, of exceptional colour; as are also those of W. H. Lincoln, a sterling yellow, and producing, as many of the plants do here, four blooms in the place of the usual exhibition three. Harry Balsley is a new pink flower; it may make something another season, but at present it is too early to say. Col. W. B. Smith is quite distinct from every other variety, and at present is extremely popular. Excelsior is the name of a new Japanese that promises to be good another season. Florence Davis was looking capital, the blooms possessing a wonderfully fresh appearance. Mrs. Gov. Fifer is a new American Japanese, of creamy white; and there are good but medium-sized blooms of Etoile de Lyon, of exceptional colour. J. Blenkinsop is a lovely colour, but it appears to lack size. John Shrimpton and W. Seward were both present, and in good condition. Judging from some plants in small pots that had been struck very late, both of these varieties are especially suitable for such purpose. They had been thinned to one bud, and the bloom in most cases was as large and good as on the large plants. Condor and Stanstead White, both worthy varieties, were represented by capital blooms; Louis Boehmer and the others of this section were noticeable. The incurved flowers were rather later, and were not quite so large as is usual here, but they had the appearance that they might be so in a week or so. Lord Brooke is a truly handsome flower; the broad stiff florets are a grand colour. Mrs. Colman, Queen of England, Mrs. Heale, Baron Hirsch, Prince Alfred, Mr. Bunn, and Lord Alcester were the most noticeable.

It was pleasant to find such a nice collection of the Anemone-flowered varieties, for they are seemingly neglected in many places, although for our own part they appear to be quite worthy of a place and attention. Mrs. Lowe is a fine yellow variety. Lady Margaret, a magnificent white flower with cream cushion. La Marguerite is a dark red compact bloom; and Sabine, a very pretty yellow. M. Judge Benedict, Delaware, Grand Alveole, and Duchess of

Devonshire, are all good varieties. Cincinnati is a pretty white and rose flower. Beside the Chrysanthemums there was a span-roofed house containing a grand display of zonal Pelargoniums in bloom, a house of Bouvardias, and many other interesting groups of plants. In the Orchid-houses were splendid flowering plants of *Masdevallia towarensis*, a good spike of *Vanda cœrulea*, and some blooms of *Dendrobium Phalaenopsis*.

THE ROYAL GARDENS, FROGMORE.

The chief attraction at the Royal Gardens at the present time, as in many other establishments of more humble ownership, is the display of Chrysanthemums and zonal Pelargoniums, although the wonderful collection of Pines may be said to be worth seeing at any time. Mr. Owen Thomas has made much of the Chrysanthemum this season, and has produced a very fine display in two span-roofed houses.

The varieties are fairly representative, and include the whole of the new ones possessing extra merit. There are many handsome exhibition blooms, although in a good number of cases there are as many as five on each plant. The most remarkable of them all is undoubtedly that magnificent incurved variety, Lord Brooke, which was represented by blooms as good as we could wish, and when seen thus, what a charming flower it is. Another good thing—Colonel W. B. Smith—is always admired, but it certainly gains nothing by being placed near Lord Brooke, the colour of which is such as makes Colonel W. B. Smith appear "washed." The white variety of Louis Boehmer was exceedingly good; and the pale yellow, large-flowering Primrose League, had two very fine flowers, and is thought much of. Mdle. Marie Hoste, although not new, is one of the most attractive of the white Japanese, its florets are wide, and the appearance handsome. Vivian Morel was capital, and the bronze sport Chas. Davis had very good flowers. Excelsior is a new one, much prized, blooms very large, magenta, with silver reverse. Violet Rose is a Japanese of splendid form, and in colour is a combination of violet and rose. A fine-coloured Japanese is Centenary, and the old fimbriatum looked pretty and light. Six good blooms of G. C. Schwabe proved what an excellent carmine-rose variety it is. Ada Spaulding, too, was remarkably well done, and bore very fine flowers; and the pretty rich cream-coloured Kate Morsel is very popular at Frogmore. Ada Praas is a remarkable flower, both in size and in width of the florets, and is a very delicate flesh colour.

Wm. Seward was a little past its best, but the delicately pretty Moonlight, of very light cream, was charming; J. Shrimpton and S. C. Childs were also included among the new ones, and near them was one called Belle Hickey, a lovely white, in which all the florets except the extreme outer ones are incurved.

The incurved varieties are not so plentiful as Japanese, here, as in most other places, they being less adapted for decorative work. Amongst these, the excellent Lord Alcester was noticeable, and the old Barbara was in good form. Golden Beverley, too, is a capital flower, of rich golden buff; and Miss Haggas is a yellow one, but considerably lighter in shade. Amongst the Japanese Anemone varieties, Madame R. Owen looked very fine; it is pure white, but very curiously in one instance two-thirds only of the bloom was white, and the remaining third quite rose-coloured, the line of union being very sharply defined, and the colour continuing from the circumference to the centre. Several of the best of the singles are also grown, including the best of all, Miss Mary Anderson.

A decorative variety Mr. Thomas recommends as specially suitable for late work is Golden Gem, bronze-crimson, changing to pure yellow, and which can be had until January; it has been Certificated on two occasions.

Amongst the miscellaneous plants, which included a large number of late-struck plants in 6-inch pots, and only about 18 inches high, was Frogne, one of the strongest violet-scented varieties we have seen.

As was mentioned above, the display of zonal Pelargoniums was very cheering, and they will, together with the Chrysanthemum, form excellent material for the embellishment of the conservatory when the Court removes to Windsor, as is expected towards the end of this month. The plants are well grown, the varieties not novel, but good. A seedling pink double, of which there were several plants, appeared to be a good thing, quite as meritorious as any of that colour we can remember.

CHISWICK NOTES.

CHRYSANTHEMUMS IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS.—A large and interesting collection of Chrysanthemums is in bloom in the Royal Horticultural Society's Gardens at Chiswick. The large vinery, and what was formerly the Palm-house, is filled with plants, not grown in exhibition style, but with few stoppings of the shoots. The result is, they are a mass of bloom, at least those in full flower, and many kinds not usually seen in ordinary gardens are grown. This display is one of the finest near London, and the spacious vinery lends itself to such a collection of flowering plants. It is impossible in a note to mention many varieties, but those who wish for really free and good showy kinds cannot do better than look over the plants to get those colours that please most. It is very difficult to judge from big blooms at an exhibition. It is not always the new kinds that are the most beautiful. We were charmed with the old *Triomphe de la Rue des Châlets*, and such a lovely kind as the reflexed *Elsie*, which is utterly spoilt by getting it too large; the flower is neat and delicate, primrose-yellow in colour. Condor is very fine, the broad flowers with rose-magenta shade; and others remarkably free and distinct in colour are Beethoven, yellow shaded into a bronzy colour; Mdle. Lacroix, one of the best of all for growing for effect; W. Stevens, rich orange and chestnut; Jas. Salter, W. T. Boyes, a pure white and very free Japanese kind; Miss Gorton, Lady Selborne, Stanstead White, O. J. Quintus, Phœbus, brilliant yellow; Florence Percy, Albert Victor, crimson-purple; Margot, and the Pompon *Elise Dordan*, which is very showy when grown freely; it is covered with the neatly-shaped pink flowers. Great credit is certainly due to Mr. Barron for getting together such a large collection, and growing them well. *Visitor*.

THE WHEAT CROP OF 1893.

It would give me much pleasure to be able to record an abundant crop of Wheat in this, the jubilee year of the Rothamsted Wheat-field, instead of which the crop is not only one of the worst which we have ever grown, but it will also, I fear, prove to be to the English farmer a crop of very low acreage value. The circumstances, however, under which our crop has been grown are very peculiar and somewhat obscure, and make it almost impossible to use the results as a basis for estimating the amount of Wheat which the crop of the country will yield.

FLUCTUATIONS AND THEIR CAUSES.

No doubt the majority of readers are chiefly interested in these reports as furnishing a sort of guide to the requirements of the country for imported Corn, but there are others, and I hope an increasing number, who take some interest in what may be called the science of the subject, and wish to know the cause of the violent fluctuations in the yield of a crop, which, both in regard to all the farming operations and to the manures applied, is treated in exactly the same manner every year. Why, for instance, the three artificial manures, which in 1863, the first year of our annual report, gave each of them a crop of fifty-five bushels per acre, are this year giving a produce of a little over twenty bushels?

October, 1892, was a wet month, but the seed was got in just at the end of it under favourable conditions; November was fairly dry, with about an

average temperature; December was a dry month—the first week was cold, with a very low night temperature. This was followed by a fortnight of warm weather, the last week being exceedingly cold, the thermometer registering 17° and 18° of frost. January of this year was rather dry, but very cold, especially during the early part of the month. On the 4th, 5th, and 6th, the thermometer never rose above freezing point, while the night temperature showed on one occasion, 17° of frost. February was a very wet month, with temperature above the average. March was very dry, but the temperature although high for the month, was subject to great extremes, the days being hot, owing to the great amount of sunshine, 198 hours being recorded, and the nights excessively cold. April was almost without rain, with a high day temperature, owing to the large amount of sunshine, 271 hours being recorded. May was also a dry month and very warm, destroying the prospects of the hay crop. June was both hot and dry. In July we had nearly three inches of rain, distributed fairly over the month, and the weather was hot, bringing in a very forward harvest. August was again dry, and a hotter month than July, a temperature of over 90° being recorded by us, and in many other localities. The season is therefore one of a very peculiar character, and is the only instance in our experience in which a dry spring and summer has not produced an abundant Wheat crop.

PRODUCE.

The following Table shows in the usual form the produce of Wheat in 1893, on the selected plots in the field at Rothamsted, which has now grown the crop for fifty years in succession, and it also gives for comparison the average produce of the same plots for ten years, thirty-one years, and forty-one years, 1852 to 1892 inclusive.

Harvest.	Unmanured. Plot 3.	Farmyard Manure. Plot 2.	Artificial Manures.				Mean of Plots 2, 3, and 7, 8, 9 (or 16).
			Plot 7.	Plot 8.	Plot 9 (or 16).		Mean.
<i>Bushels of Dressed Grain, per Acre.</i>							
1893	9½	34½	20½	21½	19½	20½	21½*
Averages:—							
Ten years, 1883-92...	12½	38½	34½	38½	33	37	19½†
Thirty-one years, 1852-1882	13	33½	32½	36	36	34½	27½‡
Forty-one years, 1852-92	13	31½	33	36½	35½	35½	27½§
<i>Weight per Bushel of Dressed Grain in Pounds.</i>							
1893	62½	63½	62½	62½	62½	62½	62½
Averages:—							
Ten years, 1883-92...	60	61½	61	61	60½	60½	60½
Thirty-one years, 1852-82	57½	60	59½	59½	58½	59	58½
Forty-one years, 1852-92	58½	60½	59½	59½	59	59½	59½
<i>Total Straw, Chaff, &c., per Acre, in Cwt.</i>							
1893	5½	20½	11½	13½	11½	12½	12½
Averages:—							
Ten years, 1883-92...	8½	34½	31½	39½	40½	37½	26½
Thirty-one years, 1852-82	11½	32½	33½	40½	41½	38½	27½
Forty-one years, 1852-92	10½	32½	33½	40½	41½	38½	27½

* Equal to 22½ bushels at 60 lb. per bushel.

† Equal to 29½ bushels at 60 lb. per bushel.

‡ Equal to 26½ bushels at 60 lb. per bushel.

§ Equal to 27½ bushels at 60 lb. per bushel.

QUALITY.

The figures in this table appear to confirm, in a general way, the opinion of farmers respecting the crop of the country; that the yield is bad, that the quality of the corn, as shown by the weight per bushel, is exceedingly good, and that the straw is excessively short; all these features are brought out in the table. The permanently unmanured plot gives a produce of

less than 10 bushels, against an average of 12½ bushels during the last ten years. The plot receiving farmyard manure gives 34½ bushels, or a decline of 4 bushels from the average of the last ten years. It is, however, in the produce of the three plots manured with artificial manures that the great falling off in the produce is shown. The mean produce of the three plots gives 20½ bushels per acre against a mean produce of 37 bushels during the last ten years; and the plot which receives the largest amount of manure gives only 21½ bushels, or little more than one-half the average yield during the last ten years, which amounted to 38½ bushels. All the plots give Wheat of very high weight per bushel, none being below 62 lb., and rising to 63½ lb.

STRAW.

The quantity of straw is in every case remarkably small, not exceeding the weight of the grain. In some seasons when the yield of grain is very low, the farmer has some compensation in a large produce of straw; such was the case in 1879, when the grain grown upon the plot receiving the largest amount of artificial manure was nearly the same as it is this year, but instead of growing only 13½ cwt. of straw, it grew nearly 2 tons. Farmers are said to grow Wheat now quite as much for the straw as for the grain; the very small weight of straw grown this year must, therefore, be a serious loss, coming, as it does, in a season when the hay crop is almost a failure.

EFFECT OF SEASON.

It is generally considered that dry springs and summers are favourable to Wheat, and certainly up to the present year all the dry seasons have resulted in large yields of Wheat in our field. In the present year the drought began earlier and lasted longer than it did in the previous dry seasons. As, however, we had this year in the field adjoining our Wheat-field a very abundant crop of Barley, it is quite impossible to attribute the bad crop of Wheat to the absence of moisture in the soil. The Wheat was sown at the usual time—the last week in October; it came up well, and did not suffer from loss of plant during the severe weather in December and January; in fact, there was up to the time the Wheat began its spring growth a sufficient plant to grow the largest crop all through the season. After the great rains of February had ceased, the artificial manures consisting of salts of ammonia and nitrate of soda were applied in the usual manner. March and April were very dry months, and although the Wheat plant looked healthy, it was noticed that it did not progress in the usual manner, and it was thought that there was some want of action in the manures. In one of our experiments the whole of the salts of ammonia are applied at the time the seed is sown, in order to measure the loss of manure by winter drainage, and in a season like this when so little drainage took place we should expect this plot to yield a crop of not much less than 40 bushels of Wheat per acre, whereas it yielded less than 20. It was evident, therefore, that there was some cause which prevented the manure from acting in the usual manner upon the growth of the crop. Practical farmers are well aware of the fact that during sudden and violent changes of temperature, the soil rises and lifts the Wheat-plant with it, tearing it from the lower roots. Several instances of these sudden changes have occurred this year during the growth of the crop. The beginning of February was warm and wet; but on the 5th, there were 7° of frost, and on the following day 11°. The first half of March was warm and almost without frost; but on the night of the 18th, the temperature fell below freezing-point, and also on each of the nine succeeding nights. On the nights of the 20th and 21st, there were 9° of frost, with sunshine all day and a high temperature. It is probable, therefore, that upon one of these occasions the separation of the plant from the root took place, and the absence of rain in March and April prevented the plant from sending down fresh roots. The men who reaped the Wheat noticed that it had very little hold upon the

ground. It is not difficult to see why the Wheat growing upon land manured every year with farmyard manure should suffer less than that grown in the other parts of the field. Whether this explanation is correct or not, the fact remains, that our crop is a very bad one, as will be seen when we apply the results to the crop of the country.

AREA UNDER WHEAT.

The area under Wheat in the United Kingdom was less than 2 million acres (1 952,476), and if we take the yield of our crop in the usual manner, it amounts to 22½ bushels per acre at 60 lb. per bushel. This will make the crop grown in the United Kingdom a trifle less than 5½ million quarters, and deducting 2 bushels per acre for seed, leaves a crop of 5 million quarters available for consumption. It is estimated that the average number of the population in the middle of the harvest-year (1893-4) will amount to about 38,644,190, and allowing a consumption of 6 bushels per head, our requirements will be very close upon 29 million quarters. It is to be hoped that the Wheat crop of the country may be much greater than my figures indicate, and I certainly place no reliance upon my crop, grown under such exceptional circumstances; but I can quite believe that while in some localities extremely large crops of Wheat have been harvested, in others the yield must be exceedingly small. Whatever the produce of the country may be, one thing is quite certain, that the crop is worth less to the English farmer than any Wheat crop grown during the present century. In the *Mark Lane Express* of October 9, it is stated that the amount of imported Wheat in warehouses at the principal ports in the United Kingdom on October 1, amounted to over four million quarters, while in the same paper it was stated that there were nearly 2½ million quarters shipped, and on their way to this country. Under the influence of these enormous figures, the difference between a good and bad crop of Wheat, however important it may be to the farmer of this country, can have no appreciable influence in the quantities which the world is prepared to send into our ports. During the present year not more than about seventeen out of every hundred of our population will be fed upon bread made from corn grown in the United Kingdom, and as the area to be sown with Wheat will probably be further reduced, we may look for a still greater falling off in the consumption of home-grown Wheat. *J. B. Lawes, Rothamsted, November 2.*

GUNNERA MANICATA.

We have frequently given illustrations of these noble plants, but we think our readers will not complain if we lay before them yet another (fig. 97, p. 589), for which we are indebted to Mr. Burbidge. Anything nobler as a foreground plant cannot be conceived, and when its giant spikes are produced, the effect is enhanced. On the margins of lakes it is quite at home, a rich moist soil suiting it. In curious contrast to the giant species such as *G. manicata* and *G. scabra*, is the little dwarf species known as *G. magellanica*. This may be seen growing in a swamp in the delightful garden of Dr. Allman, near Poole, a veritable treasure place for rare and interesting plants. We see with regret that the name "prickly Rhubarb" has been proposed for these plants. As the plants have absolutely nothing but the superficial appearance of the leaves in common with Rhubarb, and that not universally, the affix of such a name, however tempting, is a real misfortune, as piling up unnecessary trouble and confusion for our successors.

HARD-WOODED GREENHOUSE PLANTS.

(Continued from p. 492.)

BORONIAS.—Since the introduction of *B. heterophylla* and *B. megastigma*, this handsome genus of New Holland plants has become much more popular, and deservedly so. *B. heterophylla* and *B. megastigma* are now frequently to be seen in miscellaneous exhibits during the spring season. No plants merit attention more than these when a great mass of colour is not the primary consideration. It is satisfactory to see that their cultivation in large

numbers has been taken up by the trade growers. In neither case can they be considered fugitive in relation to their blooming period, for if well attended to they will last in good condition at least a month, and if a few plants of each kind be grown it is possible to extend it even more. In a small state they are particularly well adapted for use as vase plants, one plant of *B. megastigma* being quite sufficient to perfume a large room, and in no case have I heard any complaint made against its peculiar fragrance.

B. heterophylla, on the other hand, claims attention by reason of its extremely floriferous character and its bright scarlet-carmine flowers; these are also fragrant, but not in so marked a degree as the first-named kind. Both of the varieties are also useful as plants for the supply of cut flowers for small arrangements, such as button-holes or specimen

than the two first-named varieties. Another kind not now grown much is *B. elatior*; it is in the way of *B. heterophylla*, with rosy-carmine flowers, and forms a good succession to that variety, and is of easy cultivation. *B. Drummondii*, of which there is also a white form, is of slender growth, and a most abundant bloomer—so much so, that it often acts as a check to proper growth afterwards.

As an instance of the long time that sometimes elapses between the discovery of a plant and its introduction into this country, *Boronia heterophylla* may be quoted. It was discovered some forty-five years back in Western Australia, but only introduced into British gardens in 1881, when seeds of it were sent to Kew by Miss North. The other popular variety, *B. megastigma*, is a native of King George's Sound and district, the seeds of which were sent to

such rapid progress. Moderate pruning after flowering in the case of *B. heterophylla* and *B. elatior* may with advantage be adopted, and an occasional stopping of strong shoots during growth. *B. megastigma* can be successfully treated when pruned rather more closely, so as to leave an inch or two only of the previous season's growth, strong shoots being treated as in the former case.

After pruning, each of these sorts will break away all the more freely if placed in a moist growing atmosphere until a good start has been made, when they should be gradually inured again to ordinary greenhouse treatment. These varieties will thrive well when a little fibrous yellow loam is added to the peat, about one-fourth making a good proportion. *B. pinnata*, *B. serrulata*, and *B. Drummondii*, on the other hand, should have peat alone, with silver sand

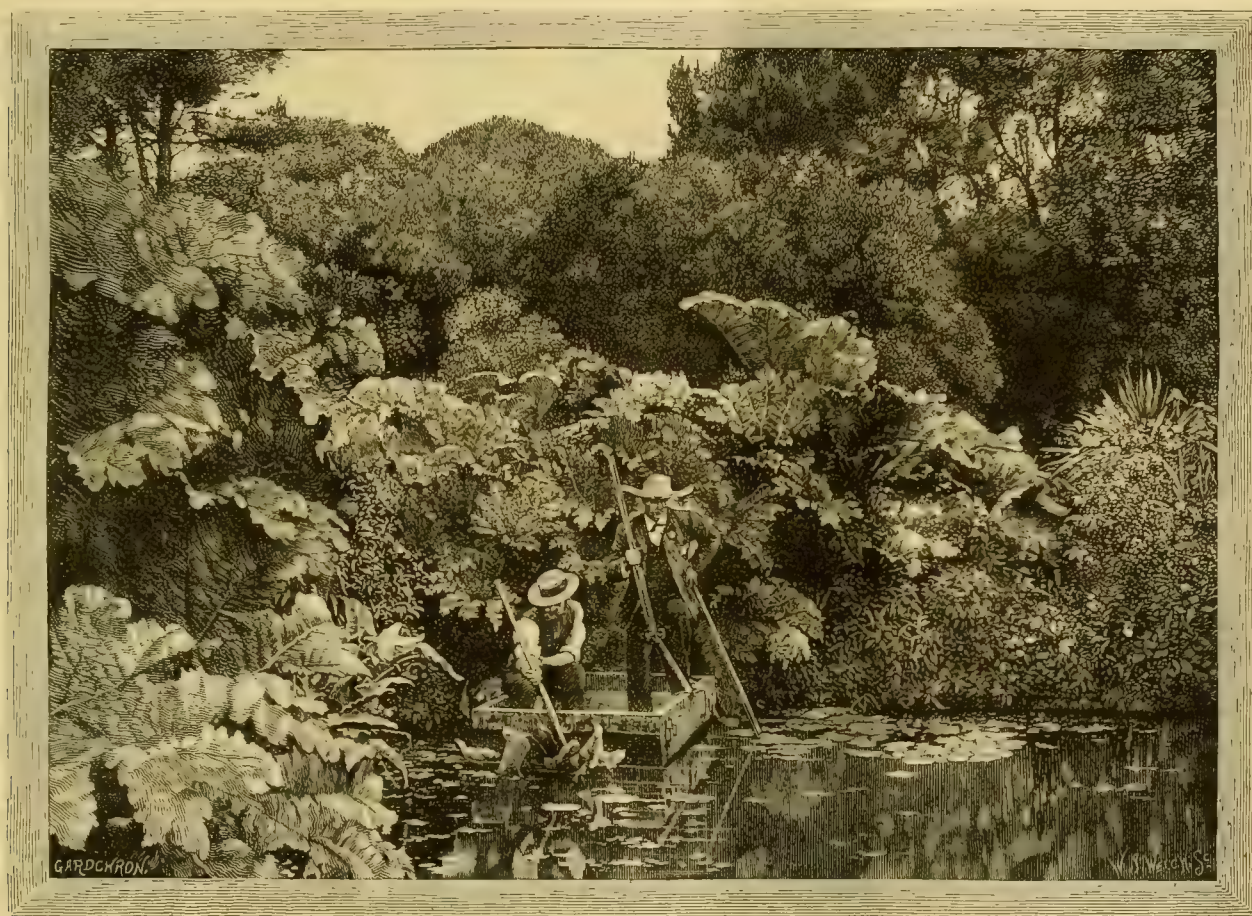


FIG. 97.—*GUNNERA MANICATA*, IN THE DUBLIN BOTANIC GARDEN, FROM A PHOTOGRAPH SENT BY F. W. BURBIDGE, M.A. (SEE P. 588)

glasses, for when so used they cannot fail to draw attention by their distinct qualities.

B. pinnata, it is to be regretted, is now seldom or ever met with. It is a plant of somewhat difficult culture, but this ought not to be a deterrent to any grower who has a good greenhouse at his disposal. It has never probably been seen in finer condition than when shown by Mr. Thos. Baines in competition for the "Davis Memorial" prizes some years back, when the plants exhibited had to be grown by the exhibitor from the small plant into the specimen. *B. serrulata* is another variety that should receive more attention; it is a slow-growing plant, taking longer to make a fair sized plant than any other. I saw it in large numbers this past spring in Messrs. W. Balchin and Sons' Nursery at Hassocks, growing well in company with *Leschenaultia biloba* major.

B. serrulata when well-grown makes a beautiful plant, very neat and compact whilst in a small state. Both *B. pinnata* and *B. serrulata* last in beauty a long time, being even more enduring in this respect

than the late firm of Messrs. Rollison & Sons by Baron von Mueller. Of this variety, Sir Joseph Hooker says in *Bot. Mag.*, 1873, t. 604:—"The somewhat aromatic fragrance of the flowers resembles nothing known to me; it is most delicious, and though not overpowering, soon fills a large room." In *B. pinnata* the fragrance is very similar to that of the Hawthorn.

In regard to culture, the greenhouse is the most suitable place for them, but they require all the light possible until the proper colour has been imparted to the flowers of each variety, when by using shading to screen from the direct rays of the sun they may be kept much longer in perfection. As regards their treatment, two divisions may be made, *B. heterophylla*, *B. megastigma*, and *B. elatior*, forming one of these; whilst *B. pinnata*, *B. serrulata*, and *B. Drummondii*, constitute the other. The first-named three are all of free growth, although not necessarily vigorous in each case; the latter are more hard and wiry in their habit, and do not in consequence make

—and that of the best quality. These three kinds will not bear the use of the knife so well as the others, and the better way in this instance is to regulate the growth by pinching the strongest shoots whilst still tender, but this even will not often be necessary, save in the case of *B. pinnata*. For these varieties the greenhouse is the best place at all seasons, a close treatment not being desirable. All of them may be stood outside in favourable spots to fully mature their growth before autumn sets in. Overpotting should in all cases be carefully avoided, and firm potting is a most essential point.

The peat used should be of firm texture, and be full of fibre—soft spongy peat ought to be avoided at all times. Nothing beyond clear water is needed for healthy plants, rain or pond-water being the best. The very slightest amount of Standen's Gardeners' and Amateur Friend, as a manurial stimulant has been found useful when the plants, from being pot-bound, showed signs of weakness, or when the soil was not of the very best quality. As in many other

plants, insects are somewhat troublesome, but not seriously so. The worst enemy is the white-scale, and upon such as *B. pinnata*, the red-spider will often appear in hot weather, but it may be kept down by syringing, whilst a well proven insecticide will with patience dispose of the white-scale. In training it should be the aim to dispense with sticks as much as possible. Those used should be of small size, otherwise the growth will not hide them sufficiently. The height should never be encouraged as much as the width of the plants, or in other words, bushy plants should be the object aimed at. The watering should be attended to carefully, no excess being allowed. *H.*

THE APIARY.

TECHNICAL LECTURES ON BEE-KEEPING.

IN connection with the Technical Education movement, the following syllabus has been drawn up by the British Bee-keepers' Association, and is suggested for the use of lecturers:—

SECTION I.—NATURAL HISTORY OF BEES.

1. The three constituents of the bee community.
2. Some leading features of the development and physiology of each of these, and the functions of the special organs of each.
3. The habits and offices of queens, drones, and workers, respectively.
4. Their dwellings (1) in Nature; (2) under domestication.
5. Their products: honey, wax, bee-bread, and propolis.
6. Swarms—natural and artificial.

SECTION II.—ESTABLISHMENT OF AN APIARY.

1. Installation in favourable locality as regards wind, rain, abundance of honey-yielding plants, &c.
2. Choice of various races of bees—black, Ligurian, Carniolan, &c.
3. Purchase of stocks or swarms, according to the season of the year.
4. Hives, skeps, moveable frames, supers, sections, &c.
5. Appliances of various kinds: smokers, feeders, veils, stoves, comb-foundation, &c.

SECTION III.—PRACTICAL APICULTURE.

1. Preparatory work: examination of stocks, securing their strength, &c.
 2. Monthly operations in apiary.
 3. Loss of queen's removal on account of age; queen rearing; introduction of young queens.
 4. Diseases and enemies of bees; means of cure and protection.
 5. Extracted honey; honey in sections and other supers.
 6. Putting up honey in bottles and in section-cases.
 7. Domestic and medicinal uses of honey; value of wax.
 8. Relation of bees to flowers and to fruit crops.
- The set of lantern-slides, specially photographed by Messrs. Newton & Co., are most suitable for use in connection with the above.

KEEPING HONEY.

Honey, especially that in the comb, should be kept in as warm and dry a temperature as possible. Sections deteriorate very quickly in a damp or cold place, and soon become unsaleable; whereas, if they are treated properly they retain their natural attractiveness, and may be kept from year to year without blemish. A complaint is often heard that honey is unsaleable except at low prices, the reason generally being that bee-keepers are in too great a hurry to sell their produce, and too much is crowded into the market at one time; whereas, if it were stored for a while, better prices might be realised. A cupboard next to a fire-place, to be found in most houses, is very suitable for keeping honey in, but sections require to be first put into glazed cases or wrapped up in tissue-paper, to exclude dust.

COVERINGS FOR BEES.

Hives with outer cases should be packed for winter with either sawdust, chaff, peat moss, &c., and those not so provided, require plenty of warm coverings over the tops of the frames. These may consist of several thicknesses of newspaper, woollen material of almost any description, or chaff, or feather cushions. The thick grey felt sold for putting under carpets is excellent stuff to use, as it is pliable, lasts a long time, and is cheap.

PROTECTION FROM WIND.

Hives in exposed places require to be fastened down to prevent them being blown over by winter gales. This may be effected by driving in a stake on each side of the hive, to which a rope is attached, after being passed over the top. In such positions it is almost imperative to have wind-breaks, to protect the bees as they fly in and out, as otherwise many get dashed to the ground and lost. Hedges of Holly, Yew, or Privet might be planted to overcome this difficulty, but in fixing the location for an apiary, it is better, if possible, to select a warm corner, protected by walls or buildings.

PLANTING FOR SPRING POLLEN.

A good supply of natural pollen early in the year is most helpful to bees in extending the brood nest, as large quantities are required for feeding the young ones. It does not pay bee-keepers to plant for honey, but it certainly does do so to plant for early pollen, especially if there is a dearth of early-flowering plants in close proximity to the apiary. The Crocus is one of the earliest and most useful of pollen-bearing flowers, and as the bulbs are cheap, may be planted in quantity. Wallflowers also yield a good supply of early pollen, as do the catkins of the Hazel and of the Willow (*Salix caprea*). *Expert.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By T. TURTON, *Gardener, Maiden Erlegh, Reading.*

PLANTING NEW ORCHARDS.—Land prepared last winter for planting as an orchard in the manner then recommended, and in the interval cropped with Potatoes, will now be in fine condition for tree planting. This operation should be carried out as soon as the trees can be obtained from the nursery, and no better time will offer than the present month, whilst some little warmth remains in the land. Under these conditions, the roots will make some little progress towards re-establishment before the arrival of spring. After planting the trees, stake them at once, so as to prevent wind-rocking, so destructive of the finer roots. If the stakes are made of stout Oak, Ash, or Hazel, charred and tarred at the ends, and for 1 foot above the soil, they will last for as long as the trees will stand in need of support. Before fastening the trees, place a piece of garden hose split on one side, round the stem; or, failing that, a bunch of straw or matting will answer almost as well, if placed between stake and stem. Unless the orchard is sheltered from the south-west, the stakes should be put in on this side, with a slight inclination in the same direction, the strong westerly winds preventing them growing over on that side.

DISTANCES AT WHICH TO PLANT, ETC.—For Apples, and especially for such varieties as Blenheim Pippin, Wellington, Beauty of Kent, Striped Beaufin, Kentish Fillbasket, Brabant Bellefleur, Rymer, Annie Elizabeth, Cox's Orange and Cockle Pippins, Claygate Pearmain, &c., which attain to large size, and which are especially suitable for orchard planting, a distance of 36 feet apart each way is not too great, and in no case should they be planted at a less distance than 30 feet, unless some early-bearing varieties, which may be, and usually are, of smaller dimensions, planted alternately with them, when 24 feet will suffice. A space of 24 feet is suitable for Pear, Plum, and Damson trees, these being of less spread of crown than Apples.

CHERRIES ON WALLS, MORELLOS.—Trained Morellos usually being planted on north walls, advantage should be taken of mild weather to get them pruned and nailed, which is preferable to leaving them till the spring. It is now much safer to apply dressings of sufficient strength to destroy aphids, red-spider, &c., than in the late winter months. Pruning will consist chiefly of cutting out as many of the naked shoots as there are young shoots to replace them, the object being to keep the tree furnished throughout with bearing-wood, but not to unduly crowd it. If the syringing of the trees earlier in the autumn with an insecticide was omitted, this may now be done after pruning and nailing, and for this purpose Gishurst Compound Soap at the rate of 2 oz. to 1 gallon of water, and one wine-glassful of petroleum added to every 3 gallons of the soap-suds is an efficient dressing. It should be kept well mixed while being used.

SWEET CHERRIES.—These varieties of Cherry, although usually grown on warmer aspects than

Morellos, may also be taken in hand at the same time, the men being employed on these when it is too cold to do anything to the Morello Cherries. Where summer-pruning received due attention, little in this way will now be required beyond the shortening back of the leading young shoots, and the same kind of insecticide as that used on the Morello will suit these; but if brown-scale is present on the shoots, a half-worn painter's brush should be employed as well as the syringe.

THE ORCHID HOUSES.

By W. HOLMES, *Gardener, Pickering Lodge, Timperley.*

RESTING AND WATERING ORCHIDS.—During the next three months, when the outside temperature will be at its lowest, and the quantity of sunlight the most meagre, high temperatures in the houses should be avoided as much as possible at night, so as to keep plants going to rest or actually at rest; quiescent, and in a fit condition to make a strong start at the proper season. It often happens that the dreaded spot is observed first on plants which have been rendered weakly and fragile by high night warmth, another reason for maintaining the plants at rest. Damping down is another matter that will need to be carefully done. The last day of October brought hard frost in Cheshire, our thermometer registering 13° below freezing-point—a sudden change indeed. The consequence was, that the warmth in the houses fell considerably, and the damping-down was prudently deferred for an hour or more, till such time as the temperature in the houses had risen a few degrees. Should bright weather prevail by day, the cool and intermediate-houses should be damped at 2 P.M., as well as in the early morning, but in cases of more than the usual fire-heat being employed, there must be more damping-down practised, otherwise yellow and black thrips will rapidly increase in numbers. The rule with regard to the matter is to damp the different houses as early in the mornings as it is safe so to do, allowing them to become dry in the middle of the day; and on days when the outside temperature is low let damping be again done early in the afternoons, the East Indian-house getting a little more moisture than any other.

RESTING OF ORCHIDS is an operation which must be practised with judgment, and this includes the affording water, damping, and airing. When the pseudobulbs shrivel, it is a sign that the plant should have water afforded, for I cannot believe in the practice of withholding water to so great an extent, but a plant should be brought to a state of rest by a gradual withholding of water at the roots and in the air, also hardening off the plants as they finish growing. *Phalenopsis*, *Aerides*, *Saccolabiums*, *Vandas*, and *Cypripediums* will require a little more moisture than other species, as dryness with those soon causes injury in the shrinking of the leaves and in other ways, besides tending to increase insects. A moderate amount of air must be admitted on all favourable occasions; in fact, it is much better to leave air at night if bottom-ventilators are provided, varying these according to the direction of the wind, and if the warmth is at all low in the morning, let the amount of air admitted be reduced till such time as a rise takes place; but it is better for the air of the house to be a few degrees too low with air on, than a few too high with a close and dry atmosphere. In resting *Dendrobiums*, water should be afforded at intervals of ten days or a fortnight, until such time as the buds on each node can be seen, and afterwards, once in three weeks will suffice. It should be borne in mind that, in taking *Dendrobiums* from growing quarters to the resting-house, that they have not quite finished for another season, the pseudobulbs having still to be built up if a good return in flowers is looked for, and such plant must not be punished by lack of water before the flower-buds are set.

PLANTS UNDER GLASS.

By B. WADDS, *Gardener, Birdsall Gardens, York.*

CONSERVATORY ARRANGEMENT AND MANAGEMENT.—Considerable attention will now be required to make this department attractive with plants and flowers. Up to October 30, when 10° of frost was registered, the glorious display of double and single Dahlias, and many other hardy autumn flowers in the open borders untouched by frost and fog, drew attention away from indoor flowers. I never remember to have seen Dahlias of such size and colour so late in the season; now all have gone, and the flowers in the glasshouses are eagerly sought after.

The past season was one of the best ever known for plants under glass, and the promise for the winter is a good one. Where the conservatory is attached to the mansion, a small re-arrangement should take place at intervals of a week or ten days, so as to give change and freshness to the house. Formality in the arrangement of groups and banks of plants and flowers should be avoided by a judicious use of large and small Palms, Ferns, and other graceful foliage plants, and a plentiful use of the hardy Bamboo should be made. A stand or table of rather dull looking but much appreciated sweet-scented Pelargoniums is much improved by placing Callas in bloom amongst them. *Primula sinensis*, and *P. obconica* should have small plants of *Kentias* and *Dracena indivisa* dotted in with them. With Hyacinths and Narcissus, Maidenhair Ferns associate well. Chrysanthemums in masses are much improved by a background of green foliage-plants, and a front margin of Ferns or Selaginella to hide the pots; and Chrysanthemum plants should be often changed about to vary the colourings of the groups. Tacsonias, Bignonias, Passifloras, Roses, and other climbing plants, should be carefully gone over, removing all unsightly or decaying leaves or shoots, seeing also that the roots do not get too dry. All evergreen plants require to be kept moist at the roots. Roses, William Allan Richardson and Rêve d'Or, are excellent varieties for planting-out in a large conservatory, as if the shoots are kept thin, and allowed to ramble as they like, they are continually in flower. Lapagerias should be kept rather dry at the root during the winter months, and care taken to keep snails away from growing shoots. If the plants are in pots, it is a good plan to have shallow cast-iron pans filled with water, and stand the plants over them on flower-pots or blocks of wood; and when planted-out in borders, a ring of pepper formed round the stems at some distance from them, is a good deterrent. *Luculia gratissima*, either in pots or planted out, will be benefited with a liberal supply of liquid manure, and by being kept clear of green-fly. An east or west wall in a warm conservatory is a good place for this fine winter-flowering plant. The sweet-flowering *Olea fragrans* grows and flowers well if planted against a south wall in this house; it is very useful for button-hole bouquets. *Rogiera gratissima*, grown in pots, is most useful for conservatory decoration and cutting purposes; and *R. cordata* makes a fine decorative plant for a wall or pillar. *Daphne indica* and *D. rubra* in pots, or planted out, must have good attention, not crowding them with other plants, and taking great care not to injure the stems of the plants when cleaning the house, but protecting them with stakes when there is danger of injury occurring. Rhododendrons in pots or tubs should have a plentiful supply of water, and the drainage of the tubs seen to that it is in good order. For shrubs, syringe over the foliage with lemon-oil mixture. Orange trees will not require much water during the dark days if kept in a cool house, but they must not be kept dry, and the foliage must be maintained in health. Heliotropes growing and in flower will require a good supply of water, and to be kept clean by fumigation. Varieties of Camellia in flower at the present time are *alba plena*, *fimbriata*, *Donkelaari*, *Bonomiana*, *imbricata*, *Lady Hume's Blush*, and the old single white, still one of the best. I never saw Camellias in such fine health and so full of bud as they are this autumn. The temperature of the conservatory should now range from 45° to 50° by night, 55° to 60° by day. Abundance of air must be afforded when the weather is mild, but during cold weather it is best to let in air by the side ventilators that are near the hot-water pipes.

THE FLOWER GARDEN.

By T. H. CRASP.

CHRYSANTHEMUMS IN THE OPEN AIR.—These plants, owing to the mild weather, are flowering splendidly, and if some little trouble is spent in protecting those on walls and fences from frost, by means of tiffany, bast, mats, frigi-domo, &c., the display will last until we get hard frosts. Clumps and standards may have some Laurel branches placed around them at night.

LILIES.—If Lily bulbs are to be planted this year, there should be no further delay in so doing. I prefer to plant all bulbs of Lilies in the open ground at this season, for if they are left till the spring, the results are not so good, for the reason that as a rule the bulbs form new roots during the winter and early spring months, which enables the growth to start with vigour. Varieties such as *L.*

longiflorum var. *Harrisii*, *L. longiflorum*, *L. auratum*, *L. speciosum*, and its varieties, *L. pyrenaicum*, and *L. Martagon*, succeed in the open ground, provided the roots have good drainage beneath them, and there is a sufficient depth of peat and loam into which the roots can penetrate. Lilies should be deep enough to be out of the reach of frost. The Liliums named above have an effective look in bloom when they are planted between Rhododendrons, Azaleas, Kalmias, &c., provided they are not planted too thickly together. It is a good plan when the potting of the stock of Lilies is in hand, to plant the small bulbs and bulbils in the beds to increase in size, even should they form no flowers the first year.

HOLLYHOCKS may at this season be propagated from eyes, provided a bed with a brisk bottom-heat is at command, and into which the cutting-pots can be plunged. Buds may be taken from the crown of the plant with a portion of the bark, and inserted one or two in 48-sized pots, in sandy loam and leaf-mould, not too much of the latter; or they may be put singly into large 60's.

PAMPAS-GRASS.—This plant is easily increased by division of the root-stock, and the present season is a very suitable one for the operation. Pampas-grass does not succeed for a great length of time in shallow or gravelly soils, and in making new stations for the plant, the soil, if shallow or poor, should be dug to the depth of 2 feet or more, filling in with an equal quantity of rich loamy soil. In planting, it is advisable to make a basin round the plant for convenience of watering in the summer-time, the Pampas-grass not succeeding if the roots are not afforded water in abundance. Should the winter prove very severe, the grass should be tied together in an upright position, and a mat or piece of stout canvas wrapped round it. It may not generally be known that the plumes are greatly improved in appearance after cutting them in the early autumn, by holding them in front of the fire, and gently shaking them. All half-hardy herbaceous, perennial shrubs, climbers, &c., should be protected by placing mats, a slight thatching of straw, Asparagus tops, and in some conspicuous parts covering these materials neatly with common Laurel boughs, neatly and compactly. It is not prudent to delay much longer affording protection. The root-stocks of half-hardy plants, and bulbs of doubtful hardiness, may be protected with little heaps formed round or above them, of half-decayed leaf-mould, fine coal-ashes, or cocoa-fibre refuse.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

EARLY POT VINES.—The simple methods of growing Vines in pots for the supplying of Grapes at the earliest period possible, viz., March and April, will always find favour with those whose glass accommodation is of limited extent. The Vines may be started in pits or frames, or almost any kind of structure where a moist heat of 50° to 55° can be maintained, and in these they may be kept till the buds are swelling. A bottom-heat not more than 60° is of service when the Vines are started, thus forcing the roots simultaneously with the buds. These early-fruited Vines should have thoroughly ripened wood, have been well rested, be provided with good drainage, and be made quite clean before they are put into warmth. From the first the Vines should be lightly dewed over several times a day till the buds burst; but in frames or pits with tree leaves or sweetened manure, less syringing is required, a too moist atmosphere being unfavourable to healthy growth. The rods may be turned down or coiled, not closely, and kept thus till the buds move from bottom to top, then put in the position they are to maintain. I have had good Hamburg Grapes from pot Vines in the month of April, which were trained round five stakes, and grown on shelves where they were exposed to the sun, heat being supplied by means of hot-water pipes. To these Vines the water supplied was never less than 75° to 80°, and equally warm weak liquid manure was afforded bi-weekly, and oftener when the fruit was swelling, but no manure was afforded after the Grapes began to colour. In early forcing it is wisest to store the sunheat in preference to using fire-heat, and 10° rise in the temperature by sun-heat is a fair increase.

PEACHES.—When fruit is not required before the month of May, there is more certainty in having a good crop than when forcing is begun earlier than December 1; in the meanwhile the trees, houses,

and all surfaces should be rendered clean, and the preparations duly made. The borders, after being surfaced with rich loam, should be thoroughly watered. The forcing must be slow at first, and will consist of merely shutting the houses and allowing the temperature to rise above 45° if possible without fire-heat at night, and syringing with tepid water is suitable.

STRAWBERRIES.—The season has arrived when the Strawberry plants in pots should be in some way protected from frost, and this season they should be easily kept, the crowns, roots, and foliage being well-matured. The plants for the earlier fruits, say from the end of February and in March, are better if the pots are not more than 5 inches in diameter, and not deluged by rain, or deprived of free air and light. The start may be made early in December. If an orchard-house exists, this is a capital place in which to store Strawberry plants. Placing the plants on their sides, against a south and west wall, is a favourite method with some, the pots being packed into bracken or litter, and this has to be removed from time to time to ascertain the condition of the soil. Stacking the plants on their sides, bottom to bottom, in heaps, or ridges about 1 yard high, finds favour with many. The crowns by this method are readily protected by means of litter, in very severe frosts. For the last ten years I have plunged the pots to the rims in ashes or dry litter (sometimes leaves mixed with dry litter), with a good degree of success. If frozen when wanted for forcing, they are taken to a late Peach-house, and kept there till thawed, but during mild weather they are cleared of drainage, surfaced, &c., and removed direct to Peach-houses, vineries, or other structures at work. Last year the frost was unusually severe, but I never had less to complain of the roots and crowns being preserved in excellent condition.

MELONS.—It is believed by some, that fine-flavoured Melons cannot be obtained during November and December, but if such sorts as Blenheim Orange (true), La Favorite, and Beechwood are grown with healthy foliage, till they are well swelled, with a somewhat dry atmosphere towards the last, they may be cut green, kept cool and dry, and ripened in heat as required.

THE KITCHEN GARDEN.

By H. O. PRINSEP, Gardener, Buxted Park, Uckfield.

BROAD BEANS.—A piece of ground should be cleared for making the first sowing of these; and it is a good practice to dig the land and sow it as the digging proceeds, especially if it be heavy, or the surface sticky. For early use, I sow the Mazagan and the Long Pod varieties, and the seed is put in rather thickly in drills made 3 feet apart, the plants being thinned out to the required distance in February, and the thinnings transplanted to give a succession. From the 15th to the 20th inst. is found in our county (Sussex) a suitable period for sowing.

EARLY PEAS.—It is not the general practice to sow these in the autumn, but where glass accommodation is scarce, and early dishes of Peas are expected, it is worth while to make a good large sowing, even should the frost destroy the plants. On dry, warm soil, the plants do not suffer so much as on retentive cold soils, and those who have the former may sow with every chance of success. The round white varieties of Peas are not so much in demand as they were in former years, but they stand the cold and moisture of winter better than wrinkled kinds, and are for that reason best for the first—or rather, latest sowings. We have tested a great number of kinds, and have come to the conclusion that it is better to wait a few days, and have those of a better quality, than to grow the hard white varieties. With us last season, Exonian, Chelsea Gem, and Sutton's Early Marrow were the best, and I shall grow them again. The same remarks apply to sowing Peas as to Broad Beans. The former variety, however (Exonian), grows 4 feet high, and should be sown 3 feet apart, the latter 2 feet, so that the same distance between the rows will be sufficient. Peas in frames will now require much attention, for during the dull months they are subject to the attacks of mildew, and a sharp look-out must be kept for this troublesome pest; for should it spread, the crop will be greatly injured, if not quite spoiled. If it be observed, at once dust with flowers-of-sulphur. Cover the lights at night, to ward off frost and snow, and ventilate freely on all favourable occasions. Snails and mice are troublesome at times, and must be trapped.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	Nov. 14	Croydon Chrysanthemum (two days). In our previous announcement of this Show in the <i>Gardeners' Chronicle</i> , the original dates selected for the Show were given.
		Plymouth and West of England Chrysanthemum (two days).
		Bathmore and Pembroke Chrysanthemum.
WEDNESDAY,	Nov. 15	Manchester Chrysanthemum (two days).
		Beckenham Horticultural and Chrysanthemum.
		Twickenham Horticultural and Chrysanthemum (two days).
THURSDAY,	Nov. 16	Hereford Fruit and Chrysanthemum (three days).
		Reading Chrysanthemum.
		Rugby and District Chrysanthemum (two days).
FRIDAY,	Nov. 17	Birmingham Chrysanthemum (two days).
		Winchester Chrysanthemum (two days).
		York Chrysanthemum (three days).

MEETINGS.

TUESDAY,	Nov. 14	Royal Horticultural Society's Committees, at the Drill Hall, James Street, Westminster.
		Horticultural Club: National Rose Society.

SALES.

MONDAY,	Nov. 13	Important two days' Clearance Sale of beautifully-grown Nursery Stock, at the Nurseries, Uxbridge, by order of Mr. Charles Turner, of Frotheroe & Morris.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
		Plants from Belgium, &c., at Protheroe & Morris' Rooms.
TUESDAY,	Nov. 14	Dutch Bulbs, at Stevens' Rooms.
		Bulbs, at Protheroe & Morris' Rooms.
		Special Sale of 50,000 Hardy Plants and Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	Nov. 15	Important Four Days' Clearance Sale of Nursery Stock, at the Lea Bridge Road Nurseries, Leyton, by order of Mr. John Fraser, of Frotheroe & Morris.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
		Bulbs, at Orchard Court, Stevenage, by order of J. Bailey-Dexter, Esq., by Protheroe & Morris.
THURSDAY,	Nov. 16	Dutch Bulbs, at Stevens' Rooms.
		Roses, Plants, Shrubs, &c., at Stevens' Rooms.
		Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 17	Plants, Liliun auratum, and others, from Japan, &c., at Protheroe & Morris' Rooms.
		Clearance Sale of well-grown Stove and Greenhouse Plants, at Oakfield, Poynders Road, Clapham Park, by order of Sir George Lamson, by Protheroe & Morris.
		Orchids in Flower, Dutch Bulbs, &c., at Stevens' Rooms.
SATURDAY,	Nov. 18	Orchids, at Protheroe & Morris' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
		Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—42°·2.

The National Chrysanthemum Society. THIS week has seen the apotheosis of the national flower of Japan in this country, for not only have we to record exhibitions of the finest of autumn flowers at numerous places in the country, but

the best one in the South, that of the National Chrysanthemum Society. Naturally, gardeners and nurserymen who largely deal in and look on the Chrysanthemum as an article of commerce, look on the show held at the Royal Aquarium, Westminster, as being one at which the latest novelty, be it seedling or sport, may be found, if not at its best, still in presentable condition. As visitors to the show, but belonging to neither class, we will endeavour to afford our readers a survey of the whole from the standpoint of the man in the street and the horticultural critic. First, then, we must be grateful for the handsome bouquets of Japanese Chrysanthemums, large-flowered and vigorous, and cut with great length of stem which allowed them to fall negligently about, forming a pleasant contrast to the skimpy, "large" and small-flowered Pompons which stood close by in trim triplets of bloom. There was a bold extravagance about the idea of cutting off the Jap's head at the foot, instead of showing him off, as it were, a Daisy on a lawn. Another improvement noticed was the increased size of the showboards in the case of some of the exhibitors, some few having erred by showing too much painted board, a fact which some of the beholders averred had the effect of apparently lessening the size of the blooms.

Bouquets, in which the Chrysanthemum played a chief part, were well shown in a room apart from the main exhibition, thereby gaining in effectiveness. The various devices were, in the majority of examples, lightly carried out, and pleasant objects to look upon, with the exception perhaps of a small lyre, which was decidedly artificial in arrangement. In the groups of large-flowered varieties shown in pots, there seemed to be a long-desired improvement visible—the plants were less tall, less formal, furnished with visible healthy foliage, a horticultural feat of some weight this hot and droughty season, when every drop of water that the plants received came to them by means of the watering-pot. In this class, as in most of the others, new men are entering as competitors, and the new men very generally run the old ones close for the highest honour, and sometimes excel them, as in the case of Mr. JONES, of Hither Green.

There were few groups on this occasion, which, considering the cramped space afforded was not a disadvantage so far as the onlooker is concerned, as it admitted of the groups being observed from points at a little distance, instead of quite close, as at former shows. What can we say of the trained plants? So long as the powers that be admit them, they will be shown, and the public will admire them. As examples of patient, if perverted skill, they were this year finer than we have ever seen them, and so well flowered, and furnished with plenty of healthy foliage were they, that we cannot but praise them, and are fain to confess that the beautiful examples shown by Mr. D. DONALD and others, of Triomphe, Gloriosum, Madame Rendatler, L'île des Plaisirs, Stanstead Surprise, &c., went far to disarm criticism.

The cut flowers of Chrysanthemums may have been slightly fewer than in some recent years, and in the case of the incurved and large-flowered Anemones, rather smaller than we are accustomed to find them at these shows, but in finish and brilliancy of colouring, there was nothing left to be desired either in these or the Japanese varieties. Many novelties were seen for the first time, at their best, some of which will, as time goes on, drive older varieties out of the field. The metropolitan classes, we were glad to note, were fairly well filled with very creditable productions,

Chrysanthemum Growers' Terms.

THE terminology made use of by the Chrysanthemum grower, affords a marked instance of the tendency of specialists to break away from general rules, and to adopt a code of their own. One convention is as good as another, and custom asserts its rule beyond the reach of law. It is necessary in these days of technical instruction to remember this matter, for scholars are likely to be taught according to one convention, whilst practitioners make use of the other. Among botanists and teachers a terminal bud is one which is placed at the terminus or end of the stem. Thus in the Chrysanthemum, the bud at the end of the stem is the terminal one, and we may indicate its position thus $2^1 3$. Buds 2 and 3 being lateral buds formed subsequently to No. 1. The terminal bud is terminal in position, but it is earlier in point of formation than those which are produced below it. The direction of growth in this case is from above downwards.

Chrysanthemum growers use the same word in reference to time, not to position. For them the terminal is the last bud formed, not the first. We fear it is too late to offer the suggestion with any hope of its acceptance, but if the word "final" could be substituted for terminal, it would tend to obviate the present confusion. The expression, "taking the bud" is another rather Hibernian phrase, inasmuch as it refers to the retention of the desired bud, and the taking away of those which are not desired.

The Individuality of Buds.

THE selection of certain buds, the removal of others, and the time at which this operation is performed, are matters of the utmost importance to the cultivator of exhibition specimens. They are not less interesting to the physiologist, ever on the look-out to investigate the causes of variation. Surprise is often expressed at these variations, but surely the surprise would be more justifiable if there were no variations. We do not look for fully-developed manliness from a child, nor do we expect childishness in a man. Is it, then, wonderful that at one time when the plant's energy is chiefly expended in growth, the buds should be of a different character from what they are when the plant is mainly exercised in the process of development, and perhaps of reproduction?

So, too, with respect to sporting; although the details of the process elude us, and the causes which set it in action are as yet purely conjectural, the general principle is fairly obvious. Chrysanthemums have been crossed and re-crossed from time immemorial, but now and then, from causes unknown to us, a separation of the previously mixed elements takes place, and the result is a sport. The process may roughly be likened, for illustration sake, to a mixture in water of some insoluble substance, say, magnesia; shake the bottle, and keep it shaken, the mixture retains its uniform appearance. Cease to shake it, let the sediment settle, and the mixture divides into a clear portion at the top, and a turbid mass beneath. This change is brought about simply by mechanical separation. Very possibly in the case of sports some chemical changes also are in action. Again, it must be remembered that the change which seems superficially so great is really trifling. Microscopic examination shows usually little or no change of structure, but only a little more or a little less colouring matter, whilst the mere superposition of two cells containing different coloured fluids produces very great differences in appearance with a minimum of alteration in structure, or perhaps none at all.

LIATRIS SCARIOSA, WILLDENOW (fig. 98).—The handsome Composite represented in the accompanying illustration, is a showy, hardy, herbaceous perennial, growing 2 to 3 feet in height, with lanceolate or linear-lanceolate leaves, and an erect stout raceme of several flower-heads about an inch in

authorised garden name, of which it might be interesting to learn the origin. It has perhaps been given because it differs from the form that is more usually cultivated as *L. scariosa*, in having larger heads on longer peduncles, and the involucrel scales comparatively narrower and more taper-

also, in his *Gardeners' Dictionary*, describes the heads as having long peduncles; in what is perhaps the more usual form, the peduncles are shorter, and the involucrel scales have dilated and very obtusely-rounded tips. SWERTZ has figured this long-peduncled form in his *British Flower Garden*, 1st ser., vol. i., pl. 44.



FIG. 98.—*LIATRIS SCARIOSA*: FLOWERS BRIGHT PURPLE.

From a specimen forwarded by Mr. Smith, Daisy Hill Nurseries, Newry.

diameter, of a bright and beautiful purple colour, on peduncles an inch and a-half or more long. It is a native of the Atlantic States of North America, and although introduced into cultivation more than 150 years ago, is by no means so often seen as it deserves to be. Recently it has been brought to our notice under the name of *L. callilepis*, but this seems to be purely an un-

pointed. But the American botanists state that *L. scariosa* is a very variable plant, and do not separate this form as a variety. Indeed, it would appear that it is the typical form of the species, since LINDLEY states under t. 500 of the *Botanical Register*, where the plant was figured in 1821, that it agrees with the original specimen in the Claytonian Herbarium, on which the species is founded. MILLER,

under the erroneous name of *L. squarrosa*, a perfectly distinct species. The plant is well worthy of being more frequently cultivated, and those who do not know it would do well to become acquainted with its merits. N. E. Brown.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting will be held in the Drill

Hall, James Street, Victoria Street, Westminster, on Tuesday, November 14, when special prizes for Chrysanthemums will be offered. At 3 o'clock Mr. R. PARKER, F.R.H.S., will deliver a lecture on "Chrysanthemums."

NEW PLANTS AT THE L'HORTICULTURE INTERNATIONALE.—At a recent visit to this establishment, we were conducted by M. LUCIEN LINDEN through several houses devoted to the reception and cultivation of novelties which are not shown to the casual visitor. In the first place we may mention the show-house, where were nearly a thousand blooms of *Cattleya labiata autumnalis* (syn. *Warocqueana*) (fig. 96, p. 585, and fig. 99, p. 595), intermixed with those of the beautiful *Oncidium Gravesianum*, *crispum*, *Rogersi*, and *incurvum*. We noticed a *Cattleya aurea* remarkable for the unusual size and beauty of the lip; it is velvety, deep amethyst, with broad well-marked stripes of gold, and showing up well against the ground colour of this handsome flower. In the former *Nepenthes*-house are now displayed many novelties cultivated in the smaller houses. In the middle is a central tank full of water above some stages, in which are placed small Tree Ferns and many Aroids. These Ferns are very attractive. The stems are from 1½ to 2½ feet high, some as thick as a little finger, others twice that size, and they are surmounted with beautiful or singular crowns of foliage. These choice little Tree Ferns are most graceful. For table decoration nothing could be more elegant than a flat vase decked with foliage or flowers, from the centre of which rises a slender shaft surmounted by graceful fronds. There are at least twenty varieties of these Ferns; they are probably mostly varieties of *Cyathea*. Their exact determination when they have assumed their character will be very interesting. About thirty sorts of Aroids such as *Anthurium*, *Philodendron*, *Philodendrium*, *Phrynium*, &c., are of great interest, their foliage is more decorative than any hitherto known. In this fine house and in some of the small ones, we met with ten new Palms, *Geonoma*, *Calamus*, *Kentia*, *Pinanga*, *Thrinax*, &c., many of these novelties will be much appreciated now when plant-lovers are getting rather tired of so many *Phoenix*, *Kentia*, and *Areca*. We noted in passing a pretty old Orchid recently re-discovered, *Oncidium Schlumieri*, and many hybrids of *Cattleya*, *Cypripedium*, *Odontoglossum*, *Dendrobium*, &c. Also many specimens of *Cattleya citrina* fertilised by the pollen of various *Cattleyas*, such as *rex*, *Alexandra*, *Mendeli*, *amethystoglossa*, *guttata*, *maxima*, &c. Four houses were filled with new introductions, both on and under the stages, in masses and as single specimens, some definitely adopted, others still on trial. Many of these pleased us by their elegant and curious foliage, or by the unusual colouring of the leaves. They include species of *Cyanophyllum*, *Spherogyne*, *Bertolonia* (a very curious new type), *Palicourea*, *Apelandra*, *Philodendron*, *Adiantum*, *Maranta*, *Dieffenbachia*, *Peperonia*, *Curmeria*, *Costus*, *Bignonia*, &c. We do not exaggerate in saying that there are at least 200 novelties, not including the Orchids introduced, but which have not yet bloomed. We noted one curious phenomenon, a new *Amaryllis*, with a large red flower, fertilised at the time of the Ghent Quinquennial last April, by the pollen of *Hæmanthus Lindeni*, yielded seed which was sown on June 23, and now, October 23, the young plants are already 6 inches high. The inverse fecundation, that is to say, *Hæmanthus Lindeni* fertilised with the pollen of the *Amaryllis*, has at present yielded only green fruit. *Ch. de Bosschère*.

LINNEAN SOCIETY.—An evening meeting will be held, November 16, 1893, at 8 P.M., when the following papers will be read:—1, "Origin of Plant structure through self-adaptation to the environment exemplified by Desert and Xerophilous plants," by Rev. Geo. Henslow, F.L.S. 2, "Catalogue of the described Neuroptera Odonata (Dragon-flies) of Ceylon, with descriptions of new species," by W. F. Kirby, F.L.S., &c.

"THE FLORAL SKETCH BOOK."—The council of the Royal Horticultural Society have granted

special permission to Mr. JOHN WEATHERS, Assistant Secretary, to publish his plant sketches. Mr. WEATHERS proposes to publish under the above title five large drawings each month, of as many new, rare, or interesting plants. Each plant figured will be fully described, and historical and cultural notes will also be given. The first number will be ready by January 6, 1894, and the price will be 1s.

STOCK-TAKING: OCTOBER.—Not necessarily, because all conditions of commercial men were desirous of getting at the sum total of last month's trade in imports and exports, but for some reason or other the "returns" were delayed a day in their publication, and that boded well for trade. The imports are in excess of those for the same month last year by £629,611. In the face of a great "coal war," this may read an over-production in colonial and foreign lands, or a desire to realise. Whatever the cause, the result is as noted, and the increase is spread over eight out of twelve headings. The following is our usual extract from the "summary" table of imports of foreign and colonial merchandise for the month of October:—

IMPORTS.	1892.	1893.	Difference.
	£.	£.	£.
Total value for month	£34,726,858	£35,356,469	+629,611
§II.—(A.) Articles of food and drink—duty free	11,935,301	13,293,187	+1,297,886
B.)—do., dutiable	3,165,473	2,815,174	—350,299
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)... ..	4,444,693	3,347,040	—1,097,653
§VII.—Raw materials for foundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,331,414	4,459,104	+127,690
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,335,734	1,416,887	+81,153
(B.)—Parcel Post ...	55,519	37,180	—18,339

Needless to say, these figures have a very cheering aspect, and the outlook for the winter months would be a good one, were there no shadow cast over the labour market; but more of this presently. We give now some interesting figures relating to the imports of fruits, roots, and vegetables during the month just finished, as follows:—

IMPORTS.	1892.	1893.	Difference.
Fruits, raw:—			
Apples bush	859,658	612,279	—247,379
Cherries "	—	—	—
Plums "	1,181	12,362	+11,180
Pears "	72,776	107,715	+34,939
Grapes "	277,852	380,616	+102,764
Unenumerated "	78,671	71,076	—7,595
Onions "	563,528	595,496	+31,941
Potatoes cwt.	115,857	43,218	—72,639
Vegetables, unenumerated, raw, ... value	£72,461	£60,164	—£12,297

It has been suggested that, in view of the low prices returned for consignments of home and foreign Apples, manufacturers of preserved fruits might with profit turn their attention to Apple jelly, which, "years out of mind," has been a favourite dish with both young and old. The hint may be of use, as may the other, that lessons at school on cookery in general might with great advantage include the making of this toothsome preserve. We pass on now to the

EXPORTS.

A small sum in arithmetic shows a total loss in traffic returns on some ten lines of railway during the past three months, as compared with the same period in last year, of nearly two millions sterling! This is due to the greatly diminished output, and consequent carriage of coal, and of manufactures intended for export abroad. Notwithstanding all this black-looking

prospect for dividends to shareholders, notwithstanding the way of setting forth enormous injury to home trade, hunger, and starvation, this building up of bad blood in the social system, the exports of British and Irish manufactures for October show a falling off to the extent of only £545,668, as compared with the same period last year. Surely the amount of energy stored up in our manufactures and shippers is wonderful. The news from South America is not reassuring, nor does that from Spain tend to buoyancy in the market; and add to this the war at home, the disarrangement of all kinds of manufactures, with a diminution of foreign trade of but little more than half a million—it must force itself upon the most obtuse individual that, with a clear social and political atmosphere, we, as a nation, are showing no signs of nearing a condition best described by the word *effete*. Just a word to shippers to Macedonia. Catalogues in English are of little use (with English weights and measures)—those who print them in French or Italian do business. There are long firms in Salonica as in London! It might pay Chambers of Commerce how to look up these gentry—our consular agents are ready to give information respecting such parasites on trade.

"BOTANICAL MAGAZINE."—The November number contains coloured illustrations and descriptions of the following plants:—

Senecio sagittifolius, BAKER, t. 7322.—The magnificent herbaceous plant introduced into cultivation by M. ANDRÉ, and figured in our columns, 1893, vol. i., p. 355, fig. 50, and in the *Revue Horticole*, 1892, fig. 16.

Veronica Fairfieldii, t. 7323.—A shrubby species, with small, ovate, finely-toothed leaves, margined with red, and with terminal panicles of pale lilac flowers. It is supposed to be a hybrid, and was obtained through Dr. BALFOUR from New Zealand.

Allomorphia Griffithii, t. 7324.—A Melastomad from the Malay peninsula, with woody rootstock, stalked, cordate, ovate, strongly-ribbed leaves, purplish on the under surface. The small white flowers are borne in spike-like panicles at the end of long red cylindrical scapes. It is a very handsome stove plant, and was introduced from Penang by Mr. CURTIS.

Harpaline Brownei, Hook. f., t. 7325.—A curious Aroid from the Malay peninsula, with the habit of *A. maculatum*, but with cordate acute crenulate leaves. The flowers are borne on an erect spadix, and surrounded at the base by a white pointed spathe. The male flowers consist of peltate scales, with six or eight most minute anther-lobes. The female flower are placed at the lower end of the spadix within the tube of the spathe, and consists each of a single erect ovary.

Calceolaria andina, BENTHAM, t. 7326.—An under-shrub, with broadly-stalked, oblong, ovate, rugose leaves, and terminal panicles of yellow calceolate flowers. Native of the Chilean Andes. Kew.

"A NEW CHAPTER IN THE HISTORY OF LABOUR."—Mr. J. KEITH seems to desire to stand as the friend of working-men, as well as of their employers, and this pamphlet gives the outline of his plan for the benefit of both these classes, and also tells how well the experiment works when put to the proof. Mr. KEITH proposes an alteration in the hours of labour; that work in his engineering shops shall begin daily at 8 o'clock, after breakfast instead of before that meal, and that the Saturday half-holiday shall remain intact. He says that, "taking six days as the actual working-days of the week, these give 144 hours in all, which being divided by three, gives—forty-eight hours for work, forty-eight hours for sleep, and forty-eight hours for recreation, &c." This re-division of time is proved to be equally beneficial both to master and workman, and to necessitate no alteration in the scale of wages. Nothing save putting it in practice can really test such a plan as this, and the fact of its entire success as tried in the Scotch engineering trade, is a sufficient recommendation to English and other manufacturers to adopt it also where the conditions are such as to enable it to be carried out.

Mr. KEITH is known all the world over for the boilers, ventilators, hydraulic apparatus, &c., made, patented, and sent out, from his works in Arbroath. His boilers are remarkable for their great power, rapidity of action, and general efficiency.

A NOTE FROM SCILLY.—A curious instance of the influence of the hot summer we have passed through in upsetting the ordinary arrangements of Nature comes from the Isles of Scilly, observes a contributor to the *Pall Mall Gazette*. In more usual seasons the flower-growers there expect that the bulbs which have been planted in the open will begin to flower abundantly just when those which have been forced under glass are going off. This year, however, the common order has been reversed. The flower-farmers have hardly set their forcing-houses in order; yet, out-of-doors, in the fields shut in by Escallonia hedges, the flowers are abundant.

approved of by the council. Intending competitors should intimate such, in writing, to the hon. secretary, ROBERT LAIRD, 17, South Frederick Street, Edinburgh, at the beginning of the session, and not later than December 1. Syllabus:—

In Dowell's Rooms, 18, George Street.—November 22, Introductory Lecture, by Mr. M. Dunn, Dalkeith.

In Surgeon's Hall, Nicolson Street.—November 29, December 6, 13, 20, 27, "The Chemistry of the Vegetable Garden," illustrated by diagrams and experiments, by Mr. W. Ivison Macadam, F.R.S.E., F.I.C., F.C.S., &c.

In Dowell's Rooms, 18, George Street.—January 10, 17, and 24, "Physics as applied to the Vegetable Garden," by Mr. A. N. Macalpine, Consulting Botanist to the Highland and Agricultural Society.

In Minto House, Chambers Street.—January 31 and February 7, "The Chemistry of the Soils:

grow down into the grass, and spring up again as semi-independent trees.

THE SEASON AND THE WHEAT CROP.—The report with which we have been favoured by Sir JOHN LAWES (p. 587), is of more than ordinary interest, not only economically, but physiologically, and as such will be read with profit by all who have to cultivate plants under like conditions, and by those concerned in the study of plant-life generally.

KENT COUNTY COUNCIL.—We learn that Mr. W. P. WRIGHT, assisted by Mr. J. P. RIDING, will give a course of six weekly lectures at the Village Hall, Chislehurst, commencing on Monday, November 13, at 7.30 P.M. Mr. LEWIS WIGRAM is the local secretary, and the office of the secretary to the County Committee is at the Sessions House, Maidstone.

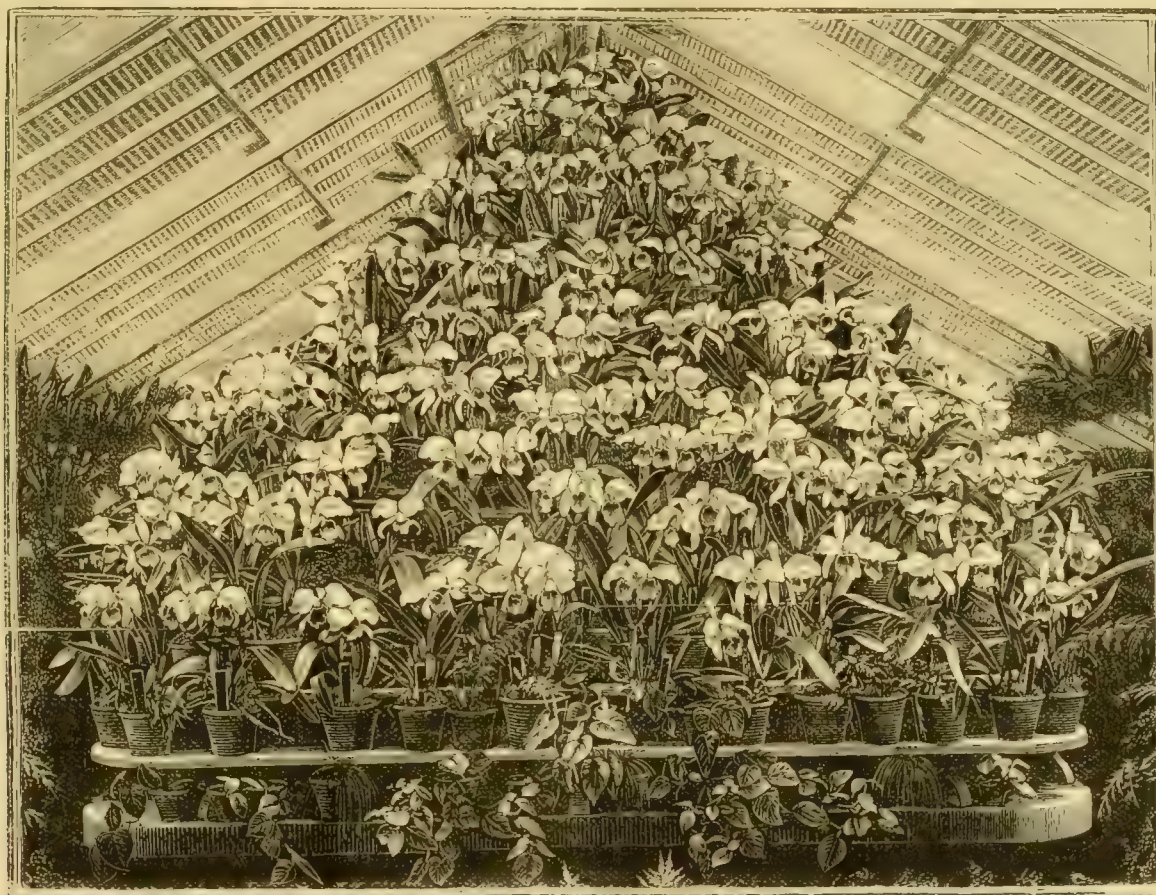


FIG. 99.—ORCHID HOUSE AT L'HORTICULTURE INTERNATIONALE, PARC LEOPOLD, BRUSSELS. (SEE P. 594)

They have been gathering Scilly Whites and Soleil d'Or for some weeks past, and the beautiful *Anemone fulgens* has also begun to flower. The ripe Strawberries lately gathered in wayside hedges would make one think July had returned; the untimely opening of flowers at Scilly might almost convince that winter was more than half over.

SCOTTISH HORTICULTURAL ASSOCIATION: TECHNICAL EDUCATION IN HORTICULTURE.—The Council of the Scottish Horticultural Association has arranged a course of lectures on the Vegetable Garden, to be delivered during the ensuing winter and spring. The scientific and practical aspects of the subjects chosen will be treated of by eminent authorities, and the lectures will be free to all interested in the advancement of horticulture. Prizes will be given to successful competitors, who must have attended three-fourths of the lectures, and must be under-gardeners or nurserymen, and

the Old and New Doctrines," by Dr. Hunter, Minto House.

In Dowell's Rooms, 18, George Street.—February 14, "Peas, Beans, Asparagus, Seakale, and Rhubarb," by Mr. A. H. Scott, The Gardens, Cambusdoon, Ayr; 21, "The Brassica and Allium tribes," by Mr. Williamson, Tarvit, Cupar-Fife; 28, "Root Crops," by Mr. Loney, Marchmont, Duns; March 7, "Mushrooms, Cucumbers, and Tomatoes," by Mr. P. W. Fairgrieve, Dunkeld; 14, "Salads," by Mr. Temple, Carron House, Falkirk.

The lectures will commence at 7.30 each evening.

HORSE-CHESTNUTS IN CAMBRIDGE.—It is understood that the authorities of Trinity Hall are about to cut off the branches of their Horse-Chestnut trees, which have been an interesting curiosity of tree life for the last half century, as well as very beautiful, simply because they take up a space in a bowling-green. The branches, which are very large,

THE WEATHER.—Writing from Sunny Hill, Llandudno, JOSEPH BROOME, Esq., High Sheriff of the county of Carnarvon, says:—"We are having grand weather, the sun shining like summer-time. Since March to this day (November 8), the temperature has been 15° to 20° higher than last year. To-day, for instance, 51°; same time and day last year, 32°.

THE HORTICULTURAL COLLEGE, SWANLEY, KENT.—The next meeting of the Experiments Committee will be held on Thursday, November 16, when Prof. CHESHIRE will lecture on the "Germination of Seeds."

THE MANNING TESTIMONIAL.—After a consultation with Mr. MANNING, with regard to the disposal of the fund subscribed for this object, it has been decided that the presentation shall take the form of a dining-room suite, with clock and orna-

ments to match. This will be accompanied with an illuminated address, containing also the names only of the donors. The completion is deferred until Mr. MANNING's return from the country.

PUBLICATIONS RECEIVED.—*Cottage Gardening*, vol. ii., edited by W. ROBINSON (CASSELL & Co.).—*British Fungus Flora*, by GEORGE MASSEE (G. BELL & Sons).—*Le Galle nella Flora Italica*, DOTT. C. MASSALONGO (Verona, FRANCHINI).—*La Coca du Buysson* (Lyon, JACQUET).—*Ens Botanische Tropenreise*, Dr. HABERLANDT (Leipzig, ENGELMANN).—*Die Botanische Garten "s" lands Plantentuin zu Buitenzorg auf Java* (Leipzig, ENGELMANN).

KEW NOTES.

CHRYSANTHEMUMS.—The Chrysanthemums in the Royal Gardens are worth a long journey to see, and the plants are arranged in the temperate-house and the greenhouse. They are shifted about twice, some varieties more than others, once when a few inches high, and in the early summer. They are certainly very beautiful, and far more satisfying to the eye than exhibition flowers or trained specimens. Some specimens bear literally hundreds of flowers, scarcely a leaf visible, and foliage to the base of the plants. Some kinds are better for this style of cultivation than others. Thus we were particularly struck with the beauty of *La Nymphe*, a Japanese variety of a soft rose-purple colour, and delightfully free. *Tendresse* is a perfect gem, its flowers also of a rose-purple shade, the florets at the base of a yellow colour. *Hiver Fleur*, a variety one never sees now at the show, is very useful for growing in this form, and also worthy of note are *Avalanche*, *Eynsford White*, *Mille Lacroix*, three fine whites; *James Salter*, *Lady Selborne*, *Sœur Melanie*, *Edwin Molyneux*, *F. Delaux*, *W. Holmes*, *Swanley Yellow*, *Bouquet Fait*, *Maiden's Blush*, and amongst singles *Miss Rose* and *Mary Anderson*. The former of the two is very good out-of-doors, and it is one of the finest of all Chrysanthemums, the flowers neat in shape and rose in colour; whilst those of *Mary Anderson* are white or nearly so, and with broader petals. The Chrysanthemums here are most creditable. *Visitor*.

HOME CORRESPONDENCE.

AMARYLLIS BELLADONNA.—Referring to the note of "E. M.," p. 554, permit me to emphasise my note, p. 468, as to the necessity of planting the bulbs at the base of the warmest south wall in the northern counties, if full success is expected. I happen to know that several people are planting bulbs this year, hence my anxiety on the point. Probably in the southern and south-western counties success may be had in fair seasons by planting them at the base of ordinary south walls. Can "E. M.," who knows the north, tell us of places (in the north) where full success is regularly secured without the care I allude to? *H. J. C. Grimston*.

ORCHID CULTURE IN BELGIUM AND IN ENGLAND.—I read M. Lucien Linden's opinion of Orchid cultivation in England, and English gardeners, as compared with Belgian methods and men, immediately on my return from a visit to Brussels, where I devoted nearly two days to an inspection of the nursery of L'Horticulture Internationale, of which M. Linden is director. Orchid cultivation is exceptionally successful in some parts of Belgium; and there are several gardens, of which that of M. Warocqué at Mariemont, M. Peeters of Brussels, and M. Linden's are examples, where the plants generally are better cultivated than in most gardens. But is M. Linden warranted in his conclusion that this success is due entirely to superior methods of culture? I think not. Anyone who has had an opportunity of observing horticultural art in different countries, or even in different parts of the same country, must admit that climatic and other conditions favour the cultivation of certain plants in one place more than in another. For instance, Azaleas and Camellias are grown far more successfully in some parts of Belgium than anywhere else. Messrs. Low & Co. adopted the Belgian system

for Azaleas, and employed Belgians to manage them, but the experiment was not a success, owing, no doubt, to climatic disadvantages. Or, to take a home example, would Cornish gardeners be justified in setting down entirely to their own skill their conspicuous success in the cultivation of Himalayan Rhododendrons, which grow and flourish like Laurels in some parts of that county? Climatic conditions again. Belgian gardeners in England have not shown any superiority as cultivators. It would not be difficult to find in Belgium large gardens where the cultivation of Orchids, as well as other plants, is not first-rate. Certainly the Orchids generally in M. Linden's establishment are splendidly grown. I have never seen such fine collections of *Odontoglossums*, *Masdevallias*, *Vandas*, and *Cattleyas* anywhere. I believe M. Linden himself is a very skilful cultivator and manager—that he has demonstrated in the Brussels establishment—but it is questionable if he would be more successful than our best cultivators if he transferred his plants and his staff to England, where the conditions as to climate, &c., are different. I contend that methods which succeed in England would probably fail in Belgium, and, of course, *vice-versa*. I know from experience this is so. Sometimes we get at Kew gardeners who have had conspicuous success in the cultivation of certain plants, and to test their methods they have been allowed to try the same methods for the same plants here, even to the extent of procuring the soil from the place where success was achieved. But it has never had good results. I think M. Linden must give some credit to favourable conditions as well as to superior cultural skill for the superb health of his collections. When he opens his branch establishment in England, which, I believe, he intends to do shortly, we shall then see how many points he will be able to give English cultivators. Comparing results, I question if anywhere one could find Orchids better flowered than they are in the best English collections, for instance, those of Burford Lodge, or The Dell, Egham; and the plants are not flowered to death either. Healthy growth, fine foliage, full pseudobulbs, are all very well, but there must be plenty of flower also, otherwise Leeks would do just as well. Whether a more liberal supply of air, light, and moisture would improve the health and vigour of the best English collections of Orchids, is a question easily put to the test. At St. Albans, I know, there is no stint of these requirements. Orchid cultivation, and indeed indoor gardening generally, has been much advanced within the last fifteen years in consequence of improved methods of ventilation and shading, and also in affording more moisture, especially during the growing season. Readers of this paper will be amused to see that M. Cabuzac, whose judgment is accepted by M. Linden, gives the Belgian gardener credit for more "zeal, attention to detail, thought, interest and taste," than the English, who is, however, credited with being a bigger swell and better educated. Our own prophets have always declared that we have abundance of practical knowledge, &c., but are shockingly wanting in education and manners! It may be insular prejudice or British brag, but after having seen and experienced a considerable amount of European gardening, I say that the English—of course, including Scotch—as cultivators of plants are equalled by few, and surpassed by none. Englishmen have the knack of fitting themselves to the requirements of a post as readily as any nationality, be the post that of gardener or archbishop. It is no compliment to an English gardener to tell him that he talks and dresses well, but is not master of his work. At the same time, we are ready to be taught, and a visit to the famous Brussels nursery is worth any gardener's while, though whether he will be able, by repeating here the practices of Belgian cultivators, to improve upon the most approved methods of English cultivators is, I am inclined to think, doubtful. *W. Watson*.

COSMOS BIPINNATUS.—This plant has succeeded well here this season, and has been a welcome addition to the flower-borders when many of the ordinary occupants suffered so much from the drought. Its finely divided foliage is very useful for mixing with cut flowers in bouquets, and branches of it when in flower blend well with Dahlias, and take off much of the stiff appearance of those flowers. I sowed the seeds on a gentle hot-bed in April, and planted out the seedlings in May as soon as danger from frost was supposed to be over for the season. The plant grows from 3 to 4 feet high, and almost as much in diameter. *W. H. Divers, Ketton Hall Gardens, Stamford*.

THE WEATHER.—On Tuesday morning, October 31, the thermometer on the grass at this place registered 21°, or 11° of frost, and in the Stevenson screen 29°, the first frost of the season. Dahlias, Heliotropes, Begonias, zonal Pelargoniums, Salvias, and many others which were in full flower were destroyed. It is quite unusual for autumn flowers to keep fresh to so late a date in this locality, we generally lose them all quite early in September. *W. H. Divers, Ketton Hall Gardens, Stamford*.

CHRYSANTHEMUM SHOWS AND THE GARDENERS' ORPHAN FUND.—The gratifying report in your last issue of the committee meeting of the Gardeners' Orphan Fund will, no doubt, stimulate many societies to imitate the good example set by the organisers of the Surbiton Concert. You will observe by the enclosed programme, that the Tonbridge Gardeners' and Amateurs' Association will, on the occasion of their Chrysanthemum and fruit show, 15th and 16th inst., devote a stall for the sale of articles to which the charitable public are invited to contribute, and the proceeds to be given in aid of the Gardeners' Orphan Fund. Your correspondent, "One of the Founders," very reasonably complains of the poor result attained by sending out the collecting cards. It may be somewhat mollifying to your correspondent to know that it is no doubt due to the cards being so industriously circulated by Mr. Barron in this neighbourhood, that the thought was bred, of which this effort on the part of our Society is the result, and I am sure our members and gardening friends around us will do their best to help. *F. Webber, The Nurseries, Tonbridge*.

SEASONABLE NOTES ON VIOLET CULTURE.—The production of double Violets for at least seven months of the year commencing early in September, is a simple matter to those who have the convenience and the practical knowledge of the cultural requirements of the plants [and who live in the country]. Still, in many gardens it cannot be said that Violets are successfully managed. Apart from the imperfect manner in which the plants are prepared for winter-flowering, the greatest mistake made by those in charge, is that of inducing, as it were, the plants to make new growth directly they are transferred to their flowering quarters, and to become established as it were. Instead of exposing the plants fully to the air for a time after they are put in the frames, the lights are very often placed over them at once, and but little air provided, under the delusion that they need encouragement to make new growth. If the plants have been properly prepared during the summer, they need no encouragement to make fresh leaves. To encourage root-action is all very well, but this is easily done, whilst leaf-growth is, as it were, at a standstill, and the flower-buds are the while receiving assistance from the roots—these swell, but not the foliage. I never allow the lights to be put over the plants till there is danger of frost injuring them or much rain falling, and even then the lights are tilted both at the back and front of the frames. Abundance of air directly the thermometer out-of-doors stands a few degrees above freezing-point is what Violets require. *E. M.*

EPILOBIUM LATIFOLIUM.—I have the pleasure to inform "E. B.," respecting *Epilobium latifolium* (Nov. 4, p. 568), that though I believe it is not much grown, it has existed here for many years. I wonder that a plant so free, distinct, and beautiful, should not have met with more acceptance. Visitors here have often been attracted by its beauties, but like many other things it suffers depreciation owing to its family relationship. The *Epilobiums* generally are not favourites, still the species which, as grown here, I am pleased to say is the true form, as verified by Trelease's recent monograph of the "North American species *Epilobium*." It is a dwarf plant with a big leaf, glaucous to almost a blue-green. The flowers are also very large, and of a pleasing colour, which mingling profusely with the glaucous foliage, scarcely any more than 6 inches high, render the plant a most acceptable one for rock-work purposes. It spreads freely by its roots, which may be described technically as knotty underground stems. In light soil it is liable to become tiresome, but properly placed, it is a plant capable of doing good service. Its hardiness, or want of hardiness, can be no reason why it is not more often met with. It is a native of damp places, in Arctic America from Labrador to Alaska. It would almost seem that it is a variable species—at any rate, from the examination of specimens from widely-varying habitats, *J. Wood, Plant Club Gardens, Kirkstall, Leeds*.

A WIREWORM TRAP.

THE wireworm is one of the most troublesome pests of the garden, and of all the nostrums recommended for its destruction, none is really effectual. Gas-lime, if used sufficiently strong to kill the wireworm, kills the plants. The only effectual way of dealing with them is to catch them. Messrs. Osman & Co., 132 and 134, Commercial Road, E., have introduced a most effectual trap in the form of a perforated cone, made of sheet-iron, into which a Carrot is inserted, and the cone thrust into the ground as in the accompanying illustration (fig. 100). I have tried a dozen of the traps during the past six weeks, and find that they quickly clear the ground of this enemy of Carnations. I am putting down two dozen more on some new ground I have broken up for Carnations. I saw the traps exhibited at the Agricultural Hall flower-show recently, and bought a dozen for trial; and I believe I am doing a public benefit in drawing attention to this little-known and useful article. J. Douglas.

SOCIETIES.

NATIONAL CHRYSANTHEMUM.



CHRYSANTHEMUMS were again exhibited in large quantity at the great annual show of the National Society, held in the Royal Aquarium, Westminster, on Tuesday, November 7, and two following days. Never was there a better exhibition in this place. Cut blooms, on the whole, were excellent—the Japanese were really wonderful—and all the other sections were quite up to average, if we except the incurved, which, as we ventured to hint in our columns last week, were rather small and late. Plants in groups, and in trained specimens, were beyond everything. We wish we could congratulate the promoters on the arrangements of the classes, but, unfortunately, many of them were so mixed up, as to cause the greatest difficulty and inconvenience to the press. Part of this may be excused, owing to the character of the building, and to the pressure for space; but, in a measure, it might undoubtedly have been avoided.

THE SOCIETIES' COMPETITION.

This class never seems to excite the amount of interest it might be expected to do, and there are generally but three or four competitors. This year the stand that was awarded 1st prize, viz., The Challenge Trophy and £10, was of very good merit, and the Society that was able to contribute such may be proud of the fact, especially as they were successful last year. The Society so distinguished is the St. Neot's Amateur and Cottage Horticultural Society, Huntingdonshire, and the blooms shown were from the garden of J. Thornhill, Esq., Widdington, Huntingdon, gr. Mr. R. Petfield. In the collection of twenty-four Japanese blooms and twenty-four incurved, required by the schedule, the flowers of Mrs. Harman Payne, Waban, Eda Prass, Vivian Morel, Mr. E. C. Clarke, and Mr. Coles, all Japanese, were of more than usual excellence. The incurved, as was usual, were rather small.

The Havant Chrysanthemum Society was 2nd, a like position to that they held last year; 3rd, the Sittingbourne and Milton Gardeners' Association.

CUT BLOOMS.

Incurved.—Here was the only weak point in the exhibition; the flowers throughout were smaller than usual, and those which secured the 1st prize this week were not nearly equal to those shown by Messrs. W. and G. Drover in this class last season.

The most important class in this section was for thirty-six blooms distinct, the 1st prize being £10 and the Challenge Trophy. The best and most successful exhibitor was Mr. W. H. Lees, gr. to F. A. Bevan, Esq., Trent Park, New Barnet. Although there was no phenomenal difference between the several stands, this exhibitor was undoubtedly the best; the varieties were as follows:—Back row: Empress of India, Alfred Lyne, John Lambert, Violet Tomlin, Queen of England, Mons. R. Bahuant, Mrs. R. King, Lord Wolseley, Alfred Salter, Princess of Wales, Lord Alcester, and Prince Alfred; central row: R. Cannell, Mrs. Coleman, John Salter, Miss

Haggas, Princess of Teck, Annie Hoste, Jeanne d'Arc, Lady Dorothy, Golden Empress of India, Hero of Stoke Newington, Barbara, and John Doughty; 3rd row: Madame Darrier, White Venus, Mrs. Hallibarton, Empress Eugénie, Nil Desperandum, Princess Beatrice, Mrs. Heale, Charles Gibson, Mrs. N. Davis, Cherub, and Lord Eversley. 2nd, Messrs. W. and G. Drover, Fareham, Hants; the stand contained some neat blooms, but on the whole they were not so good as they ought to be. 3rd, Messrs. W. Ray & Co., Mount Pleasant Nursery, Teynham. 4th, Mr. H. Shoesmith, gr. to M. Hodgson, Esq., Shirley Cottage, Croydon.

In the class for twenty-four blooms, the premier position was taken by Mr. W. H. Lees, with a very creditable collection. The best were Princess of Wales, Golden Empress of India, Princess Teck, and Empress Eugénie. Mr. C. W. Knowles, gr. to Chas. Egerton Solna, Esq., Roehampton, was 2nd, Messrs. W. Ray & Co., 3rd, and Mr. Jas. Myers, gr. to the Earl of Sandwich, Hinchbrook Gardens, Huntingdon, 4th. The next class in this section was for twelve blooms distinct, and Mr. W. Collins, gr. to J. W. Carlile, Esq., Ponsbourne Park, Hertford, was 1st, and showed remarkably well compared with the other classes. His blooms were, White Emperor, Mrs. R. King, Alfred Salter, Queen of England, Golden Emperor, Jno. Doughty, Mr. Heale, Madame

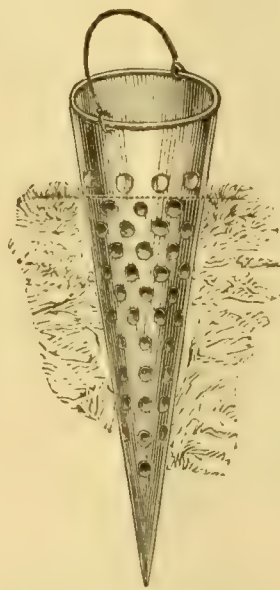


FIG. 100.—WIREWORM TRAP.

Darrier, Mrs. S. Coleman, Princess of Wales, Violet Tomlin, and Lord Alcester. 2nd, Mr. A. Felgate, gr. to her grace (Elizabeth) Duchess of Wellington, Burhill, Walton-on-Thames. His best was Mrs. Coleman, a fine specimen. 3rd, Mr. B. Calvert, Bishop Stortford. 4th, Mr. G. Carpenter, gr. to Major Collis Browne, Broad Oaks, Byfleet.

Mr. W. Collins staged the best six blooms of one variety only, showing Mrs. Heale; 2nd, Mr. Jno. Hewitt, gr. to H. B. Mackeson, Esq., Hillside House, Hythe, with Lord Alcester, and Mr. B. Calvert; 3rd, with Violet Tomlin.

Japanese.—This section was wonderfully strong, the blooms were large and well finished, and in most cases the rivalry was keen, and the competitors numerous. In the leading class for forty-eight distinct blooms, and in competition for the Holmes Memorial Cup and £10, the successful exhibitor was W. Herbert Fowler, Esq., Claremont, Taunton, with a magnificent collection. The varieties were—Back Row: J. S. Dibbings, Etoile de Lyon, E. Molyneux, Stanstead White, Mrs. E. M. Clarke, Thomas Hewett, Van Der Heede, Thomas Selwood, Vivian Morel, W. K. Woodcock, Mrs. E. F. Adams, R. C. Kingston, Colonel W. Smith, Julius Rœhrs, W. H. Lincoln, Duke of York. Centre Row: Charles Davis, Puritan, Mrs. Muriel Scott, William Tricker, Mdlle. Marie Hoste, C. W. Wheeler, Mrs. F. Jameson, Madame J. Laing, W. W. Coles, Florence Davis, G. C. Schwabe, Miss Dorothy Shea, Potter Palmer, Sunflower, and Violet Rose. Front Row: Miss Anna Hartshorn, Beauté Toulousienne, E. G.

Hill, W. Falconer, Charles Shrimpton, Mrs. Alpheus Hardy, Rufacto Marshaletta, Madame Thérèse Rey, Robert Owen, Louis Boehmer, Beauty of Exmouth, Vice-President Calvat, Autumn Tints, Gloire du Rocher, John Shrimpton, and Charles Blick; 2nd, Mr. Charles Cox, gr. to John Trotter, Esq., Brickendon, Hertford; 3rd, Mr. Charles Gibson, gr. to J. Wormald, Esq., Morden Park, Surrey; 4th, Messrs. W. and G. Drover.

The good quality of the Japanese was seen especially in the class for twenty-four blooms, distinct, the 1st prize in which was a Silver Cup value five guineas, given by Major A. Collis-Browne, Broadoaks, Byfleet, and £4. There were sixteen competitors, and the most successful was Mr. W. H. Lees, gr. to J. B. Hankey, Esq., Fetcham Park, Leatherhead. His blooms consisted of the finest novelties, and were Col. B. Smith, Beauty of Exmouth, G. C. Schwabe, M. A. Carrière, Violet Rose, Florence Davis, Albéric Lunden, Vice-President Darquier, W. Seward, Beauty of Castle Hill, Mdlle. Marie Hoste, W. H. Lincoln, Mrs. Nisbet, Falconer Jameson, W. Tricker, Sunflower, E. Molyneux, Eda Prass, a very highly promising blush-white variety; Etoile de Lyon, Puritan, J. Stanborough Dibbings, Stanstead White, G. W. Childs, and Vivian Morel. Mr. W. H. Lees, gr. to F. A. Bevan, Esq., Trent Park, New Barnet, 2nd; Chas. Davis, E. Molyneux, Mrs. Bryceson, mauve-purple, Col. B. Smith, Vivian Morel, and Sunflower being of merit. Mr. H. Shoesmith, gr. to M. Hodgson, Esq., Shirley, Croydon was 3rd; and Mr. W. Collins, gr. to J. W. Carlile, Esq., Ponsbourne Park, Hertford, 4th.

The competition was keen in the class for twelve Japanese, the 1st prize being awarded to Mr. Allan, gr. to Lord Suffield, Gunton Park, Norwich. The flowers were remarkably full, solid, fresh, and splendidly coloured, and were Vivian Morel, Miss A. Hartshorn, Coronet, Mrs. Harman Payne, Avalanche, Stanstead Surprise, Comte de Germiny, John Dyer, Stanstead White, Sunflower, and W. Tricker. Mr. A. Felgate, 2nd; and Mr. F. J. Thorne, gr. to Major Joicey, Sunningdale Park, 3rd. The 1st prize for six blooms, white, one variety, was won by Mr. W. Collins, with Avalanche; Mr. B. Calvert, 2nd, with the same variety; and Mr. R. Jones, gr. to C. A. Smith-Ryland, Esq., Barford Hill, Warwick, 3rd, with Florence Davis. For six, any variety, except a white one, Mr. W. Collins was again 1st, showing Edwin Molyneux; Mr. H. Shoesmith, 2nd, with that fine new light bronze-coloured Col. B. Smith; Mr. A. Felgate, 3rd, with the same kind. A good class was for twelve Japanese blooms, distinct, put into commerce in this country in 1891 or 1892. The 1st prize was awarded to Mr. Godfrey, Exmouth, and the following varieties were well exhibited: Aureole Virginale, Miss Dorothy Shea, Duchess of Devonshire, John Farwell, Pearl Beauty, Primrose League, Lizzie Cartledge, Chas. Blick, Van der Heede, Lilian Russell, Princess May, and Mrs. Harman Payne. A very good 2nd was Mr. Shoesmith, who had exceptionally fine blooms of Col. B. Smith, Chas. Blick, Mrs. Harman Payne, Beauty of Exmouth, Mdlle. Thérèse Rey, and Eda Prass; Mr. H. Fowler, Taunton, 3rd.

Japanese Incurved.—Mr. W. H. Lees was 1st for six Japanese incurved blooms, showing E. Molyneux, Colonel B. Smith, Madame Carrière, Mrs. Alpheus Hardy, W. Tricker, and W. H. Lincoln; Mr. B. Calvert 2nd.

Large-flowered Reflexed.—The competition was sharp for twelve large-flowered reflexed blooms, not less than nine varieties, the 1st prize being awarded to Mr. F. J. Thorne, who showed well Cloth of Gold, Pink Christine, Phidias, Cullingfordi, Golden Christine, Putney George, and White Christine; Mr. A. Sturt, gr. to W. L. Cohen, Esq., Englefield Green, 2nd.

Large-flowered Anemones.—For twenty-four large-flowered Anemones, Mr. A. Ivies, gr. to C. E. Jukes, Esq., High Barnet, was 1st, with fine blooms. Mr. W. Skeggs, gr. to A. Moseley, Esq., Barnet, 2nd; and Mr. J. Milner, Willenhall Park, Barnet, 3rd. For twelve Anemone blooms, Japanese excluded, Mr. Ivies was 1st, with very fine, smooth, even flowers of Gladys Spaulding, Delaune, Grande Alveole Beauty of Eynsford, Mrs. Judge Benedict, Glück, Mdlle. M. Brun, a very beautiful novelty; and Annie Lowe. Mr. A. Sturt 2nd, and Mr. Charles Brown, gr. to R. Henty, Esq., Langley House, Abbots Langley, 3rd.

Japanese Anemones.—The Japanese Anemone kinds were well shown. Mr. Ivies was 1st for twelve, all in true character, and they comprised Le Deuil, Fabian de Manderanaz, Mons. Ponckoucke, Rodolph

Ragionière, Jeanne Marty, Minnie Chale, James Western, and Mdle. Cabrol; Mr. R. C. Notcott, Ipswich, 2nd.

Anemone Pompons.—For twelve *Anemone Pompons*, distinct, three flowers of each, Mr. Jas. Myers, gr. to the Earl of Sandwich, was 1st, and the flowers were not spoilt by getting them too large. *Astrea* was very beautiful. The 2nd place was occupied by Mr. W. Aldridge, gr. to G. Lacey, Esq., Palmers Green; and Mr. C. Brown, 3rd.

Pompons.—For twelve *Pompons*, distinct, the 1st prize was awarded to Mr. C. Brown, who had excellent flowers of leading varieties, such as William Westlake, Black Douglas, Mdle. Marthe, Comte de Morny, Prince of Orange, Mdle. Elise Dordon, and Pygmalion, Mr. T. C. Turk, gr. to J. Boney, Esq., Cholmeley Lodge, Highgate, 2nd; and Mr. J. Myers, 3rd.

Singles.—A very beautiful lot of singles, twelve bunches, distinct, was shown by Mr. W. C. Pagram, gr. to A. F. Hobhouse, Esq., The Whin, Weybridge. The flowers were large, and unusually fine, and comprised Yellow Jane, snow-flake, also known as Jane, Rev. W. E. Renfrey, Bessie Conway, David Windsor, Gus Harris, Adrienne, Sir T. Symonds, Mary Anderson, and Lady Churchill. Mr. Jno. Agate, Havant, 2nd, and Mr. G. Carpenter, gr. to Major Collis Browne, Broad Oaks, Byfleet, 3rd.

AMATEUR CLASSES.

The five classes following are confined to those who employ no paid assistance whatever in the culture of *Chrysanthemums*.

For twenty-four Japanese blooms of not less than eighteen varieties, J. R. Wildman, Esq., 9, Grove Road, Clapham Park, S.W., was 1st; Mr. Jno. Horril, West Street, Havant, Hants, 2nd; and Mr. H. J. Parker, 172, New Kent Road, S.E., 3rd. Though the first exhibit was much superior, the whole of them were creditable.

Mr. Jno. Horril was 1st for twelve incurved blooms, showing very well; 2nd, J. R. Wildman, Esq.; and 3rd, Mr. Thomas Lansley, 155, Pinner Road, Watford.

For six incurved blooms, Mr. Thomas, Fort Grange, Gosport, was 1st, his Miss A. Tomlin was very fine, as were others also; 2nd, Mr. J. Brown, 55, Norman Road, South Wimbledon; 3rd, Chas. E. Wilkins, Esq., Woodside, Surrey.

The best twelve Japanese blooms came from Mr. A. Holmes, followed by Mr. Lansley, and Mr. Hicks, Elstree, Herts. Mr. F. Durant, 4, New Road, Ware, Herts, had the best six, including one of Vivian Morel, of extra colour and finish; 2nd, Mr. J. Brown, 55, Norman Road, Wimbledon; and 3rd, Mr. A. Holmes.

AMATEURS AND SINGLE-HANDED GARDENERS' CLASSES.

The best twelve incurved blooms were from Mr. John Little, Hylands, Romford, who showed blooms but little behind those in the open classes; Novelty, Madame Darrier, Lord Wolsley, and Prince Alfred were best; 2nd, Mr. T. L. Turk; 3rd, Mr. E. Tickner, gr. to John Watney, Esq., Shermanbury House, Reigate. Mr. W. C. Pagram, gr. to A. F. Hobhouse, Esq., Weybridge, had the best six; followed by Mr. W. H. Davis, gr. to F. V. White, Esq., Grove Park, Chiswick, and Mr. Chas. E. Wilkins, Woodside, Surrey.

Mr. Little showed extremely well in the class for twelve Japanese blooms, and was closely followed by Mr. E. Tickner, and Mr. W. C. Pagram.

Mr. E. Tickner was 1st in the class for six; Mr. Ed. Mawley, Rosebank, Berkhamsted, 2nd; and Mr. W. Jones, gr. to W. Hooper, Esq., Sleana Mount, Sutton, 3rd.

METROPOLITAN CLASSES.

The best twelve blooms, incurved, diverse, were from F. Bingham, Esq., 6, Bethuna Road, Stoke Newington; Mr. W. Davey, gr. to C. C. Paine, Esq., Cedar House, Stamford Hill, was 2nd; and Mr. F. W. Wright, gr. to — Trope, Esq., Essex Lodge, Upper Clapton, 3rd. Mr. J. Bury, gr. to C. Bayer, Esq., Tewkesbury Lodge, Forest Hill, had the best six; Mr. Jas. Brooks, gr. to W. Reynolds, Esq., The Grove, Highgate, was 2nd, almost equalling the 1st collection; and F. Bingham, Esq., 3rd. Mr. Jas. Brooks was 1st for twelve Japanese, showing fresh, nice blooms, *Etoile de Lyon* was first-rate in colour and finish; 2nd, Mr. Wm. Beech, gr. to L. Seligman, Esq., The Grove, South Kensington; 3rd, F. Bingham, Esq. The latter exhibitor was 1st in the class for six blooms; Mr. E. Vince, Highgate Cemetery, 2nd; and Mr. J. Bury 3rd.

TABLE DECORATIONS AND BOUQUETS.

These were exhibited in the library, and not, as in previous years, crowded together in the galleries. The principal class was for a table of bouquets, wreaths, sprays, &c., illustrating the decorative value of the *Chrysanthemum*. An exquisite assortment of various devices was that from Messrs. Perkins & Sons, Coventry; Messrs. Gilbert & Davidson, South Wales, 2nd. For three vases or epergnes, Mr. J. K. Chard, Stoke Newington, was an easy 1st, using the *Ampelopsis Veitchi* tastefully; Mr. F. W. Seale, Vine Nurseries, Sevenoaks, 2nd.

Mr. Walter Salmon, 2, Ivy Cottages, Elder Road, West Norwood, was 1st for a hand-basket of autumn foliage and berries, arranged for effect, with a superb arrangement; and Mr. Jno. Horne, West Street, Havant, was 2nd.

GROUPS AND PLANTS (OPEN).

The plants were extremely well grown—better than for many years past, but there seemed to be fewer groups. The groups of importance were those from Mr. H. Jones, Rycroft Nursery, Hither Green, Lewisham, and Mr. Norman Davis, Lilford Road Nursery, Camberwell. Both had splendid arrangements, the individual flowers remarkably fine; they were awarded prizes in the order named.

For six trained specimens, large-flowered varieties, including Japanese, Mr. D. Donald, gr. to J. G. Barclay, Esq., Leyton, was 1st; his plants were a feature of the show, and they were of the varieties Margot, Stanstead Surprise, Madame B. Rendatler, White Christine, Gloriosum, and Dr. Sharpe. Mr. John Hughes, gr. to G. R. Higgins, Esq., East Lane, Dulwich Village, 2nd; and Mr. W. Wesker, gr. to A. Haver, Esq., Upper Tooting, 3rd.

For four specimens, the 1st prize was won by Mr. G. W. Hendon, gr. to J. Spiers, Esq., Tottenham, who had fine plants of *L'île des Plaisirs*, Margot, Stanstead Surprise, and *La Triomphante*; Mr. W. Davey, gr. to G. C. Paine, Esq., Cedar House, Stamford Hill, 2nd, with very praiseworthy plants of *Elsie*, Mons. Tarin, Dr. Sharpe, and Wm. Robinson; Mr. F. Gilks, gr. to W. E. Freir, Esq., Forest Road, Walthamstow, 3rd. Mr. Davey was 1st for six trained specimens, showing well plants of *Elsie* and Madame B. Rendatler; Mr. Donald 2nd. Mr. G. W. Hendon came 1st in the class for four specimens, having fine examples of Stanstead Surprise, *La Triomphante*, Margot and Madame B. Rendatler; Mr. F. Gilks and Mr. J. Hughes 2nd and 3rd respectively.

The trained *Pompons* were of great merit. The 1st prize six were from Mr. J. Hughes, and comprise the varieties Maroon Model, the flowers deep mauve-purple; Golden Cedo Nulli, Lilac Cedo Nulli, St. Michael, St. Justin, and White Cedo Nulli; Mr. Donald 2nd; Mr. Astie, Antonius, Aurora Borealis, and Cedo Nulli; Mr. F. Gilks 3rd.

The best specimen pyramid-trained was from Mr. Donald, and the finest plant we have seen of the variety Margot; Mr. J. Hughes 2nd, showing Mrs. Dixon; and Mr. F. Gilks 3rd, with Madame B. Rendatler.

SPECIAL PRIZES.

Several special prizes were offered, and for interesting exhibits, Mr. G. C. Paine, Cedar House, Stamford Hill, offered prizes for six naturally-trained, large-flowered specimens. Mr. Gilks was 1st, showing beautiful examples of W. Tricker (very good), *Coquette de Castile*, Florence Davis, W. Holmes, Lady Selborne, and Val d'Andorre; Mr. E. Vince, Highgate Cemetery, N., 2nd. Mr. E. C. Jukes, Hadley Lodge, Barnet, offered prizes for twelve incurved blooms, to "encourage the cultivation of the smaller and beautiful type of incurved blooms, such as Mrs. Randle, Mrs. Shipman, &c." The 1st prize was awarded to Mr. R. Petfield, gr. to A. J. Thornhill, Esq., Dodington, Hunts, and he exhibited such kinds as Eve, Geo. Glenny, and Mabel Ward; Mr. W. H. Tees, 2nd, showing Lord Eversley and Empress Eugénie well.

Mr. H. J. Jones offered prizes for six blooms of seedling *Chrysanthemums* of his own raising, and six blooms distinct, of new varieties, not necessarily his own. Mr. W. J. Godfrey, Exmouth, was 1st in the former class, and Mr. W. H. Fowler 2nd. Many of these varieties will possibly take a place in the best collections, the more important being Miss Dorothy Shea, Van den Heede, Golden Wedding, W. H. Atkinson, Autumn Tints, and F. M. Sanders.

Two classes were provided by Mr. Owen, Castle Hill Nursery, Maidenhead. One was for "twelve blooms of not fewer than four varieties of the six new incurved varieties distributed by him in 1893, viz.,

Baron Hirsch, Brookleigh Gem, George Cockburn, Henry Perkins, Lucy Kendall, and Mrs. Mitchell." The 1st prize was won by Mr. Jas. Agate, who had very good blooms.

The special prize of Mr. Godfrey, The Nurseries, Exmouth, Devon, was for six blooms of Beauty of Exmouth, the white Japanese kind; and very fine flowers came from Mr. Ritchings, gr. to Dr. Frankland, The Yews, Reigate Hill.

MISCELLANEOUS EXHIBITS.

These were less numerous than upon some occasions, and consisted for the most part of *Chrysanthemums*, added to which were a few collections of foliage and flowering plants, which helped much to relieve the dull appearance of the building.

Mr. H. J. Jones, Rycroft Nursery, Hither Green, Lewisham, had a magnificent arrangement on a large table near the centre of the building. Large numbers of cut blooms arranged on trays, together with others in very large vases, to form a background, were much admired. Most of the varieties shown are noticed in another column, as seen at the nursery. Another large collection of cut blooms, representing most of the new varieties, and including many seedlings, was from Mr. Robert Owen, Maidenhead. Twelve blooms of the new Beauty of Exmouth were shown in capital condition, and a like number of blooms of a new one called Bride of Maidenhead, very similar in size and form to the one just mentioned, but being pure white. Another seedling was in form and colour a little similar to Florence Davis, but larger. Caledonia looked like a promising Japanese *Anemone*.

Messrs. H. Cannell & Sons, Swanley, had a large table of zonal *Pelargonium* blooms in their charming varieties, which created much attention, also a good number of *Chrysanthemum* blooms, some of them an exceptional size, such as *Etoile de Lyon*, Col. W. Smith, International, Amy Chantler, Duke of York, and Viviani Morel. Messrs. Cannell also exhibited a first class collection of vegetables, and a large number of Potatoes. Mr. W. Wells (Earlwood Nurseries, Ltd.), Redhill, contributed a collection of the newer varieties of *Chrysanthemums*, and including a good number of single ones. Mr. Jno. Smith, St. Leonard's Road Nursery, Windsor, sent twelve blooms of a white decorative variety with pink centre, called Royal Windsor; and Mr. W. E. Boyce, of Archway Road, Highgate, a collection of blooms, including some pretty seedlings; Messrs. E. D. Shuttleworth & Co., Ltd., Peckham Rye, had a very tastefully arranged table of miscellaneous plants, including choice *Dracænas*, *Crotons*, *Heaths*, &c. What constituted an enticing group, and composed of *Cattleyas* in flower, and *Odontoglossums*, with a groundwork of Fern, came from Messrs. B. S. Williams & Son, Upper Holloway, London, N., and was arranged upon a table near the centre of the building; Messrs. Wm. Cutbush & Son, Highgate Nurseries, London, N., had a table of *Ericas* in variety, *Dracænas*, Palms, and other plants, also a collection of Apples and Pears, and a specimen bunch of their Chasselas Napoléon Grape.

Messrs. Jno. Laing & Sons, Forest Hill, London, S.E., had a stand of large *Chrysanthemum* blooms, in the centre of which was a group of the pretty *Saxifraga sarmatensis* tricolor variegata; also a collection of Apples and Pears.

Nine dishes of well-coloured Apples came from Mr. W. T. Fletcher, Ottershaw Nursery, Chertsey. Mr. H. Berwick, Sidmouth Nurseries, Sidmouth, staged 100 dishes of fruit, consisting of Pears and Apples, large and well-coloured.

From Messrs. Sutton & Sons, Reading, came a fine exhibit of their best Potatoes, including samples of Satisfaction, Triumph, Supreme, Windsor Castle, Surprise, and Abundance. Potatoes were also exhibited by Mr. C. Fidler, Reading, who had a large heap of his Colossal variety exhibited on a table.

FRUIT AND VEGETABLES.

As usual there was a good display of fruit and vegetables, arranged in the gallery. Mr. Thos. Turton, gr. to Jno. Hargreaves, Esq., Maiden Erlegh, near Reading, was 1st for six dishes of dessert Apples; Mr. Chas. Ross, gr. to Colonel Archer, Welford Park, Newbury, 2nd; and Mr. T. Haines, gr. to the Hon. D. P. Bouverie, Colehill House, Highworth, 3rd. The same exhibitors in the same order were successful in the class for culinary Apples, the fruit in both cases being good.

For dessert Pears, Mr. W. Allan, gr. to Lord Suffield, Gunton Park near Norwich, was 1st; Mr. H. Berwick, Sidmouth Nurseries, 2nd; and Mr. Thos. Turton, 3rd.

The best twelve dishes of Potatoes came from Mr.

James Simkin, Shillington, near Hitchin, with a really fine collection; Mr. T. H. Ridgewell, Histon Road, Cambridge, 2nd; and Mr. E. Choppin, Milton, Sittingbourne, 3rd. The exhibits in this class were exceedingly numerous.

Mr. Simkin was again 1st for six dishes, Mr. Choppin 2nd, and Mr. Chas. Ross 3rd.

Grapes were shown well, the best three bunches of white coming from Mr. C. Griffin, gr. to A. Christy, Esq., Kingston-on-Thames, with Muscat of Alexandria; 2nd, Mr. Bury; and 3rd, Mr. Jno. Masterson, gr. to the Countess of Camperdown, Weston House, Shipston-on-Stour.

For three bunches of black Grapes other than Gros Colmar, Mr. C. Griffin was 1st; Mr. W. Allen 2nd; and Mr. E. Cooper, The Vineries, Bagsshot Road, Sunninghill, 3rd.

The best Gros Colmar were shown by Mr. Bury and Mr. T. Newman, gr. to T. A. Tulk, Esq., Chertsey, 2nd; whilst Mr. W. Chuck, gr. to P. Thellusson, Esq., Brodsworth Hall, Doncaster, was 3rd.

The collections of vegetables exhibited for the special prize offered by Messrs. Sutton & Sons, Reading, were unquestionably good. The 1st prize was taken by Mr. W. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury; 2nd, Mr. C. J. Waite, Glenhurst Gardens, Esher; 3rd, Mr. Richard Lye, gr. to W. H. Kingsmill, Esq., Sidmonton Court, Newbury.

The prizes offered by Mr. Fidler, Reading, for the best six dishes of Potatoes, three of which were to be his own varieties, were taken by Mr. J. H. Ridgewell, Mr. Chas. Ross, and Mr. C. J. Waite, respectively.

KINGSTON AND SURBITON.

NOVEMBER 7, 8.—This year's show well sustained the high reputation of this, the best of outer metropolitan societies. If trained plants were fewer—and that is of no great importance, cut blooms were in greatly increased numbers—some 50 dozens, indeed, beyond previous years. In other than Chrysanthemum classes there was strong competition, and very high quality. The only exception, perhaps, was found in the miscellaneous groups. The only one in competition came from Mr. Cooke, Walton, and was awarded the 1st prize. Messrs. Puttock & Shepherd had one other group, not for competition.

Groups of Chrysanthemums.—Last year's winner, Mr. Mileham, gr. to A. T. Miller, Esq., Leatherhead, was a good 1st; his blooms were chiefly Japanese, all fine, and there was a capital facing of dwarf plants. Mr. G. Peed, gr. to R. L. Bond, Esq., Surbiton, was 2nd; Mr. Springthorpe, gr. to E. W. Bevan, Esq., Coombe Court, 3rd; and Mr. Pitcher, Albury House Gardens, Surbiton, 4th.

The best six trained plants, dwarf, and about 3½ feet across, came from Mr. J. Swan, gr. to G. Murray Smith, Esq., Weybridge; they included three Christines, two of the Rundles, and Peter the Great. Mr. F. King, gr. to A. F. Perkins, Esq., Holmewood, had for 2nd some capital standards, rather hard tied, of elegant Stanstead Surprise, Elaine, and Curiosity.

The best four Pompons came from Mr. Swan, who had Mdle. Marthe, Golden do., Mr. Astie, and Marie Stuart. Other plants were shown numerously in smaller classes. Of Carnations, Mr. J. Wilkins, The Grange Gardens, Kingston Hill, had the best. Mr. Peed had the best Bouvardias, a capital lot of plants. Mr. Clarke, gr. to A. Nagle, Esq., best berried plants, in some admirable Solanums; Mr. C. Lane, gr. to C. H. Coles, Esq., Canterbury, the best nine table plants, in a big competition; and Mr. F. Hopkins, gr. to Mrs. Wodderspoon, Walton, the best lot of six plants. Chinese Primroses were numerous, the six of singles, all white, placed 1st, coming from Mr. Peed; and the first half dozen of doubles, really splendid plants, of Marchioness of Exeter, and White Lady, came from Mr. W. Mease, gr. to A. Tate, Esq., Leatherhead. This fine lot secured the *Gardeners Magazine* Medal for special high culture.

Cut Flowers, of course, constituted the chief attraction of the show, especially the Old and New Challenge Vases. For these, twenty-four Japanese, and twenty-four incurved flowers had to be staged. The Old or sixth Challenge Vase won successively by A. Tate, Esq., Leatherhead, Major Collis Browne, Weybridge, and T. Bryant, Esq., Juniper Hill, could be competed for by those doughty competitors only; and Mr. Mease who won it for Mr. Tate last year, takes it finally back to Downside. This grower had a fine lot of Japanese, including Robert Owen,

in wonderful form. Viviani Morel, W. Seward, V. P. Calvat, Col. B. Smith, Mrs. H. Payne, E. Molyneux, and Mrs. Cannell, very fine; and of incurved, M. R. Bahuant, Marquis de Paris (elsewhere shown as a Japanese), Robert Cannell, Princess Teck, Violet Tomlin, C. B. Wetherall, Nil Desperandum, &c. Mr. Beckett, gr. to Mr. Bryant, was 2nd, having some capital Japanese, and very good incurved. Mr. Carpenter, Major Collis Browne's gardener, was 3rd. The New or seventh Challenge Vase, a handsome urn, brought severe competition, but fell to a new exhibitor in Mr. Neville, gr. to F. W. Flight, Esq., Winchester, whose Japanese, if not so large as some others, were admirably selected, and even. These included Col. B. Smith, Sunflower, Beauté Toulousienne, a short-petalled Molyneux, Marquis de Paris, quite open, Gloire du Rocher, &c. Of incurved, he had M. R. Bahuant, Baron Hirsch, Princess of Wales, Mrs. Coleman (selected as the premier incurved), Mrs. Heale, Miss M. A. Haggas, Queen of England, &c. Mr. Hunt, gr. to P. Ralli, Esq., Ashstead Park, was 2nd.

A mixed class of twelve Japanese, and twelve incurved for a cup and prize, brought a good competition. Mr. Coombs, gr. to W. Furze, Esq., Teddington, being a good 1st with capital flowers. Mr. Adler, gr. to C. W. Izod, Esq., Esher, being 2nd. Turning to the other classes, we have to refer to them briefly. Mr. Higgs, gr. to J. B. Hankey, Esq., Leatherhead, was well in with twenty-four Japanese, having good Albéric Lunden and Violet Rose. Mr. Mease was 2nd, and his best were Charles Davis, Madame Charles Hay, Mrs. H. Payne. Mr. Hunt had the best twelve Japanese, Mr. Holderbury 2nd, with six blooms. Mr. T. King was 1st with six of one variety, a splendid competition. Smith Ridge, gr. to C. Swinfin, Esq., Weybridge, was best with fine Viviani Morel. Sunflower from Mr. Felgate, Walton, coming 2nd; and Mr. Hunt 3rd, with Falconer Jameson. In a special class for six selfs, some fine blooms of Col. W. B. Smith, came from Mr. Coombs; and of a similar class for six whites, Mr. Griffin, gr. to A. Christy, Esq., Coombe, had the best with Avalanche. The premier Japanese was a fine bloom of E. Molyneux, shown by Mr. Hunt. Turning now to incurved we found Mr. Higgs repeating himself, taking the 1st prize for twenty-four fine flowers, really good in form, although it is fair to say that the incurved blooms were not up to the size and form of last year. The collection included Golden Empress, Lord Alcester, Empress of India, Queen of England, John Doughty, Lord Wolseley, Miss Haggas, Prince Alfred, &c. Mr. A. Finlay, gr. to M. Grant, Esq., Cobham, was 2nd; Mr. Mease 3rd, with twelve blooms. Mr. Hopkins was 1st, Mr. Beckett being next with six blooms. Mr. Thorne, gr. to A. E. Flood, Esq., Walton, took 1st place. And with six of one variety Mr. Hopkins was best with fine Violet Tomlin; 2nd, Princess of Wales, from Mr. Neville; Baron Hirsch from Mr. Coombs being 3rd. Of Anemones, Mr. Jinks had the best 12 very fine blooms, Mr. Woodgate being 2nd. In reflexed Mr. Measures was 1st, Mr. Felgate being 2nd. There were numerous other small and local classes, which it is not possible further to refer to; but the competition was not only good, but remarkable for the large number of new exhibitors.

Fruit was good and plentiful. Mr. C. J. Waite, The Gardens, Glenhurst, Esher, had the best four dishes in fine Alicante Grapes, Coe's Golden Drop Plums, Beurré Diel Pears, and King of the Pippins Apples; Mr. G. H. Page, Ham House Gardens, was 2nd. The latter, however, had the best four dishes of Apples, in fine samples of Alfriston, Blenheim, and King Pippins, and Winter Pearmain. Mr. Waite was 2nd, with four dishes of Pears. Mr. G. Trinder was a good 1st, having very fine Doyenné du Comice, Pitmaston Duchess, Beurré Diel, and Beurré Bachelier. The best black Grapes, Alicante, came from Mr. Griffin, but Mr. Newman, gr. to J. Tulk, Esq., Chertsey, had some very fine and well-coloured Gros Colmar for 2nd that were most meritorious. Mr. Griffin had, in fair Muscatel Alexandria, the best whites. Mr. Waite was, on this occasion, the only exhibitor of a basket of vegetables. Mr. Springthorpe beat the professionals with a very handsome bouquet, and Miss C. F. Mitchell, Kingston, beat Miss C. Cole, of Feltham, with a stand of leafage and berries, but the positions were reversed in another class.

HORSHAM CHRYSANTHEMUM.

OCTOBER 31 and NOVEMBER 1.—The fourth exhibition of this Society was held on above date. Owing to the number of shows held during the week, reports

are necessarily condensed. The chief prize-winners in the open classes for cut flowers were Mr. G. Duncan, gr. to C. T. Lucas, Esq., Warnham Court; Mr. W. Wallis, gr. to Mrs. Mews, Hartfield; Mr. T. Sparkes, gr. to Mr. E. Allcard, Horsham; and Mr. G. Goldsmith, gr. to Sir E. Loder, Leonardslee.

In the amateurs' classes for cut flowers, Mr. Champion, 28, St. Leonard's Road, Horsham, was most successful.

Groups were fairly well shown, Messrs. Haskell, G. Marshall, E. Daniels, and J. Salter, being in good form. Other 1st prize winners were Messrs. G. Goldsmith, E. Daniels, E. Lawrence, T. Dancy, H. Harris, and T. Sparkes, who exhibited in the higher class for amateurs.

For baskets (ladies only), Mrs. A. Aldridge, Mrs. Champion, and Mrs. Stott, took honours in the order named; Miss Willison being 1st for a bouquet, and also for a spray.

Fruit was fairly well represented, Messrs. Dancy, Duncan, Goldsmith, and Kemp, taking premier honours.

Several special prizes were given, both for cut blooms and collections of vegetables, the latter by Messrs. Sutton & Sons, being awarded to Messrs. E. Lawrence, T. Sparkes, and H. Harris, in the above order.

THE BATTERSEA AMATEUR CHRYSANTHEMUM AND HORTICULTURAL.

NOVEMBER 1.—This Society, which is composed largely of working men, held their second annual Chrysanthemum show in one of the Mission-halls on the above date, and the advance upon last year was most striking. With the exception of a charming group of foliage and flowering plants from Mr. R. Neal, nurseryman, Wandsworth, and one of Chrysanthemums from Mr. Norman Davis, nurseryman, Camberwell, the contributions were entirely from members. Mr. W. Charman, gr. to H. Russell, Esq., Clapham Common, was the only exhibitor of specimen plants, having three admirable ones, two of Mdle. Lecroix, and one of Edward Audiguier; Mr. Bond, Frances Street, had the best twelve blooms, six incurved and six Japanese, M. R. Bahuant, Prince Alfred, and Lord Derby among the former being highly praiseworthy. Mr. Flood, Ashbury Road, was 1st with twelve Japanese, and very good they were. Mr. J. O. Langrish, the Hon. Sec., came 1st with six coloured Japanese, and he was also 1st with the same number of blooms of white. Reflexed flowers consisted chiefly of Japanese, Mr. Bolton being 1st with six very good flowers. Anemone-flowered and Pompons were also in good form, as were vases and baskets of Chrysanthemums. Mr. Bolton had the best group of plants of Chrysanthemums arranged for effect. Such a society as the above should be in operation in every working-class district of London.

STEYNING CHRYSANTHEMUM.

NOVEMBER 2.—This was a very successful meeting, the exhibits being good, and the arrangements excellent. There was a substantial increase in the number of exhibits, which numbered 252 this season, against 175 last year. Mr. Grace was 1st for a group of plants, with a well-arranged collection. Mr. G. Hart, gr. to H. Head, Esq., Shoreham, was remarkably successful, taking first honours for three plants, (distinct), a specimen plant, twenty-four Japanese, twelve Japanese, six Anemone-flowered, six reflexed, and twelve bunches of Pompons, in addition to other honours. The 1st prizes for six Japanese, and for six of any one variety were taken by the indefatigable secretary, Mr. A. Slaughter, who was also successful in what was evidently the chief class of the day, viz., the local Challenge Cup and the National Chrysanthemum Society's Silver Medal. This was a grand exhibit, and was well in front of the remaining competitors.

Amateurs with less than 100 plants, the 1st prizes were awarded as follows:—For a group, E. Cripps, Esq., Steyning, who was also the winner for twelve and six blooms. The prize for three plants was awarded to Mr. Dell, Shoreham.

Cottagers' Division.—Three plants, Mr. M. Turrell, Steyning; six blooms, Mr. H. Goacher, also 1st for six bunches; bouquet, with hardy Fern or foliage, Mr. A. Heryett.

Open to ladies only.—A basket of Chrysanthemums, for effect, produced strong competition, about a dozen good exhibits being staged, resulting in Miss F. White and Miss K. White being awarded 1st and

2nd; Miss Flowers making a good third. An extra prize was deservedly awarded to Miss Head, Shoreham. The premier prize in this class was a piece of plate. 1st prize was taken by Mrs. Flowers for a hand bouquet, a similar honour falling to Miss F. C. Wood, for a spray of Chrysanthemums.

The *Gardener's Magazine* Silver Medal was won by Mr. A. F. Grace.

Special Prizes were given for various exhibits, by Mr. H. Jones, Lewisham; Mr. H. J. Burt, Steyning; H. Head, Esq., Shoreham; Mr. C. Kilminster, Steyning; Mr. W. Hills, Mr. Meeten, Mr. Miller, Mr. J. Wood, and the Society.

Some pleasing exhibits, not for competition, were sent by the following trade growers: Mr. Jones, Lewisham; Mr. Hills, and Mr. Kilminster, Steyning.

CRYSTAL PALACE CHRYSANTHEMUM.

NOVEMBER 3, 4.—The annual show, held in the Palace, is usually an occasion for spirited competition, and for a very fine display of first quality blooms. That held on the 3rd and 4th inst. was no exception in this respect, for in each class there were many competitors, and the difference in the merit of some of the exhibits was so small as to give the judges considerable work in determining the awards. If any section was weak, it was the incurved, the flowers in some cases being rather late, and just a day or two behind exhibition form. Plants and groups were of average quality, many of them not quite so fine as we have seen them.

The first class for twenty-four Japanese and twenty-four incurved blooms, with not fewer than eighteen varieties of each, or more than two of any one variety, was well won by Mr. C. Ritchings, gr. to Dr. Frankland, The Yews, Reigate Hill. The Japanese were good, and included the following among the newer kinds:—Colonel W. B. Smith (very fine), Puritan, W. Seward, Vivian Morel (in capital colour), President Borel, Mrs. C. Harman Payne, Florence Davis, Excelsior, and Beauty of Exmouth; Edwin Molyneux was a first-rate colour, and of good size. It was in the incurved blooms, however, that this exhibitor was to the fore, most of them being well "up," neat, and of good size. There were not many new ones included; Madame Darrier, Prince Alfred, Geo. Cockburn, Baron Hirsch, and Lady Hardinge were some of the latest of those shown. The 2nd position was taken by Mr. H. Shoesmith, gr. to M. Hodgson, Esq., Shirley Cottage, Croydon. The Japanese were good, but not quite representative in colour; there were excellent blooms of white Vivand Morel, Eda Prass, Charles Davis, and Col. W. B. Smith. Amongst the incurved were included M. Martignac—an excellent yellow bloom, and the new Brookleigh Gem. Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was 3rd; the Japanese were lovely specimens, but the incurved blooms were rather small, not fully developed.

For eighteen incurved blooms, Mr. W. H. Lees, gr. to F. A. Bevan, Esq., Trent Park Gardens, New Barnet, was 1st, and showed a stand of very good blooms; noticeable were Lord Alcester, Mr. Colman, Golden Empress of India, Princess of Wales, and Miss Haggas. 2nd, Mr. Geo. Carpenter, gr. to Major Collis Browne, Broad Oaks, Byfleet; and 3rd, Messrs. W. & G. Drover, Fareham, Hants, who caused considerable surprise by exhibiting below their usual form. In the class for twelve, Mr. A. Felgate, gr. to Her Grace (Elizabeth) the Duchess of Wellington, Burhill, Walton-on-Thames, was 1st. The collection contained a good bloom of Noel Pragnell, nearly white, but having a little magenta on most of the florets; 2nd, Mr. W. Jupp, gr. to G. Boulton, Esq., Torfield, Eastbourne.

The best six incurved blooms of any variety came from A. B. Welch-Thornton, Esq., Beaurepaire Park, Basingstoke (gr. Mr. H. Brown). The variety was M. R. Bahuant, shown in good size and colour; 2nd, Mr. Wm. Jupp, with Princess of Wales; and 3rd, Mr. Geo. Goldsmith, gr. to Sir E. G. Loder, Bart., Leonardslee, Horsham, who had Madame Darrier.

Mr. W. H. Lees had the best eighteen Japanese blooms, showing a fine collection, which included Mr. G. Bryceston—a very fine deep magenta, and a capital bloom of E. Molyneux; Messrs. W. and G. Drover were 2nd, but their stand suffered from the absence of a single white bloom; otherwise, the flowers were good. Mr. Charles Cox, gr. to J. Trotter, Esq., Brickenden Grange, Hertford, was 3rd.

Mr. E. Tickner, gr. to J. Watney, Esq., Sherburn House, Reigate, had the best twelve Japanese; President Borel, Lord Brooke, and Vivand Morel were especially attractive. 2nd, Mr. A. Felgate, who

had excellent blooms of Louis Boehmer and Col. W. B. Smith; and 3rd, Mr. J. Harwell, gr. to A. J. Jack, Esq., Brightlands, Reigate.

The best six blooms of any variety of Japanese were from Mr. J. MacDonald, gr. to Captain Marling, Clanna, Lydney; the variety was Edwin Molyneux, and the blooms were large, and of good form and colour. Mr. A. Felgate was 2nd, with splendid blooms of Colonel W. B. Smith, in which the twisted character of the florets was well marked; and Mr. W. J. Owden, gr. to A. Morris, Esq., Court Green, Streatham, 3rd, with rather pale coloured Vivand Morel.

The 1st prize in the class for eighteen reflexed and Japanese reflexed blooms was taken by Mr. C. J. Salter; the exhibit included Rosy Morn, W. Seward, J. Shrimpton, and Gloire du Rocher. Mr. A. Felgate was 2nd, with flowers considerably smaller; 3rd, Mr. C. Ritchings.

Mr. C. J. Salter was 1st for Anemone and Japanese Anemone blooms, showing a capital lot, which included Duchess of Westminster, a variety with long florets and rose and yellow cushion; Mons. Lebosqz, Delaware, Sabine, and Thorpe Junior, the latter a very good yellow; 2nd, Mr. J. Miller, gr. to Mrs. W. A. Higgs, Willenhall Park, Barnet; Sœur Dorothee Souillé, a pure white variety, in this stand was very good. Mr. R. C. Notcut, Broughton Road Nursery, Ipswich, was 3rd.

The best Pompons were from Mr. J. Knapp, gr. to F. W. Amsden, Esq., Croydon, and were well shown; Mr. C. J. Salter was 2nd; and Mr. H. Harris, gr. to Mrs. Eversfield, Denne Park, Horsham, 3rd.

The Pompon Anemones formed a most pleasing class, and were well shown by Mr. C. J. Salter; 2nd, Mr. H. Harris; and 3rd, Mr. J. Knapp.

Mr. Geo. Carpenter exhibited singles in capital form. Purity was a lovely white, Sir T. Symond, a good yellow one; and Rev. Renfrey, an extra deep-coloured flower.

Specimen Plants, as we have already said, were about average merit. For six trained Pompon varieties, Mr. J. Hughes, gr. to J. R. Higgins, Esq., Eastlands, Dulwich, was 1st, and these were as well shown as any we have seen in this section; 2nd, Mr. W. Weaker, gr. to G. Heaver, Esq., Streatham Elms, Upper Tooting, was 2nd; and Mr. W. Carr, 3rd.

The best Japanese were shown by Mr. Hughes; and Mr. W. Walker and Mr. E. Cherry, gr. to Mrs. Gabriel, Norfolk House, Streatham, 2nd and 3rd respectively. Mr. Hughes was again 1st for six specimen incurved, they included nice plants of Lord Wolsley, G. Glenny, and Hereward; Mr. E. Cherry was 2nd.

Twelve standards were shown best by Mr. W. Carr, gr. to Mr. S. Clarke, Croydon; Mr. G. H. Cooper, Sydenham Nursery, Croydon, was 2nd; and Mr. J. Carpenter 3rd.

Groups.—Messrs. J. Carter & Co. were 1st for a group arranged for effect (Japanese only), on space not exceeding 100 square feet, with a very commendable group; and Messrs. J. Mobsley & Son, 147, Moffat Road, Thornton Heath, were 2nd.

For a group of any sort on 50 square feet, open to amateurs only, Mr. T. W. Wilks, gr. to C. Ralph, Esq., Cranbrook Villa, Upper Norwood, was 1st, and showed in good style; 2nd, Mr. H. Baker, gr. to C. J. W. Rabbitts, Esq., Westwood House, Sydenham.

Certificates were given to Pompon Florence Carr, a small deep bronze variety, shown by Mr. W. Farr; and to Beauty of Exmouth, shown by Mr. Godfrey, Exmouth.

Messrs. Jno. Laing & Sons, Forest Hill, S.E., put up a very pretty group of miscellaneous plants, including Orchids, Bertolonias, Chrysanthemums, &c.; and Mr. W. Wells, Earlewood Nursery, Redhill, staged a collection of Chrysanthemum blooms, including a large number of decorative, Pompon, and single varieties.

KENT COUNTY CHRYSANTHEMUM.

NOVEMBER 1.—The annual exhibition of the Kent County Chrysanthemum Society, on Wednesday, at the Rink Hall, Blackheath, has eclipsed its predecessors, both in the number of entries and the quality of the exhibits. The 1st prize for groups was awarded to Mr. J. Vavasour of Blackheath Park (gr. Mr. Rhoden), for a carefully-blended collection of fine Chrysanthemums, composed chiefly of Japanese. The winner of the 2nd prize, Mrs. Penn of The Cedars, Lee, (gr. Mr. Fox), made the competition extremely close, the group being extremely effective, and containing fine specimens

of The Sunflower, Mrs. Jameson and William Holmes varieties.

Between the Chrysanthemum groups were arranged others composed of foliage plants and flowers, the 1st prize for which went to Mr. H. F. Tiarks of Chislehurst (gr. Mr. Lyne); Mr. S. Whyte of Oakwood, Crayford (gr. Mr. Tomlin), took the 2nd prize.

The Chrysanthemum groups were exhibited by Mr. H. Paine, of the Paragon, Blackheath (gr. Mr. E. H. Meggs); Mrs. Wainwright, Belmont, Lee (gr. Mr. J. Pearce); and Mrs. Crundwell, of The Moat, Eltham (gr. Mr. Jeffery).

Flowering plants were exhibited by Messrs. B. S. Williams & Son, of Upper Holloway; Mr. James Williams, of College Park Nursery, Lewisham; and Messrs. Laing & Son, of Forest Hill.

The exhibition of fruit, though of small dimensions in comparison with the flowers, contained some splendid specimens, Pears and Grapes being especially well represented.

The prize for the best Japanese Chrysanthemum in the show was awarded to Mr. Hodgson, of Shirley, Croydon (gr. Mr. Shoesmith), for a grand specimen of Edwin Molyneux. Mr. A. G. B. Hubbuck, of Elmstead Lodge, Chislehurst (gr. Mr. Leadbetter), gained the prize for the best incurved Chrysanthemum, a "Prince Alfred," of the Queen section. The president's prize for twenty-four cut blooms (eight Japanese, eight incurved, and eight reflexed) went to Mr. S. Whyte, of Oakwood, Crayford (gr. Mr. Tomalin), whose collection was of much excellence.

WATFORD CHRYSANTHEMUM SHOW.

NOVEMBER 7, 8.—The eighth annual show of the Watford Chrysanthemum Society took place on Tuesday and Wednesday last in the Clarendon Hall, Watford. The exhibition was above the standard of former years. The large groups produced keen competition. The cut blooms were very fair, and the vegetables and fruit were up to the average.

In Division 1, for groups of Chrysanthemums on a space not exceeding 50 feet, Mr. Keyser's (gr. Mr. Gleeson) group formed a striking feature of the show. This group not only took 1st prize, but also the Silver Cup, value £5 5s.

For miscellaneous group of plants, Mr. C. Van Raalte (gr. Mr. Neve) succeeded in carrying off the 1st award, whilst Lord Escher (gr. Mr. Brown) took 2nd place with a well-arranged group. For cut blooms, twenty-four incurved varieties, Mr. C. Van Raalte secured the 1st honour, Mr. H. H. Gibbs and Mr. Bosanquet (gr. Mr. Turk) being 2nd and 3rd. Mr. C. Van Raalte also took, amongst other prizes, the special prize given for the best Japanese bloom in the show, the 1st for twenty-four Japanese varieties, distinct; 1st for six incurved blooms, one variety; 1st for eighteen incurved blooms, distinct; 1st for six Primulas, 2nd for twelve Japanese blooms, and 2nd for eighteen Japanese blooms.

The special prize for the best incurved bloom in the show was taken by Mr. C. E. Keyser (the winner of the 1st prize for six Japanese blooms, one variety). The special prize for the twelve best Japanese blooms in the show was gained by Mr. H. H. Gibbs, who also obtained the special prize for six Chrysanthemum blooms, the 1st prize for six Cyclamen pots, and the 1st for twelve bunches of Pompons. Mr. J. Larkin (gr. Mr. Fortnum) was successful in winning the 1st prize for twelve incurved varieties, distinct, and 1st for twelve incurved blooms, distinct.

The 1st prize in Division 13, for a group of Chrysanthemums on 25 feet space, was taken by Mrs. Manning (gr. Mr. Chippis); Viscountess Malden (gr. Mr. Williams) being 2nd. Mr. Schruher (gr. Mr. Davies) obtained the 1st prize for twelve incurved varieties.

Dr. Brett (gr. Mr. Camfield) was successful in Division 4, for a group not exceeding 20 feet, open to members not employing more than one gardener; Mr. W. E. Moon (gr. Mr. Hall) being 2nd. The other principal winners being Mr. Rowlands, Mrs. Part, Mr. T. F. Blackwell, Mr. S. J. Blackwell, the Earl of Essex, Mr. J. I. Ward, Mr. P. Bosanquet, Rev. K. F. Gibbs, Mr. W. T. Coles, and Mr. Blathwayt.

As on the previous occasion, Mr. A. Scrivener, florist, obtained all the 1st prizes for the wreaths and crosses that were awarded, as well as 1st for bouquet of Chrysanthemums.

The exhibits of fruit and vegetables were numerous and fine, but space will not permit of reference to them at full length, the chief prize-takers in the fruit being Rev. H. F. H. Burchell Herne, Mr. W. Knox, Darcy, Mr. H. H. Gibbs, Mr. R. Henty, and Mr. W.

F. D. Schreiber; whilst for the vegetables, Mr. A. Rowlands, Rev. F. H. Hodgson, Mr. G. W. Williams, Mr. Kentish, and Mr. Riley were the chief.

Mrs. Robins won the award for Mushrooms. Judges, Chrysanthemums:—Mr. Eyfe, Overstone Farm, Northampton; Mr. Herrin, Dropmore, Maidenhead; Mr. Lane, King's Ride, Ascot. Miscellaneous plants, &c.: Mr. Hill, Tring Park, Tring; Mr. Myers, The Grove, Watford; Mr. Norman, Hatfield House, Hatfield.

BRIGHTON AND SUSSEX NEW HORTICULTURAL.

NOVEMBER 7, 8.—The eleventh annual Chrysanthemum Show of this Society was held on Tuesday and Wednesday. From the first, the new management has been all that could be desired. Groups are always well staged at Brighton, and the prizes substantial, upwards of £25 being given for groups alone. In the premier class for cut blooms (thirty-six), a handsome silver cup, besides money prizes are given. There are some sixty odd classes, inclusive of fruit and vegetables, the majority of which were well contested, consequently the result was a grand show, notwithstanding the many claims of numerous societies upon the above dates. Both the Dome and Corn Exchange were filled with high class exhibits.

The following is a list of the chief prize-winners: *Plants*.—Semi-circular group (14 by 8 feet): 1st, Mr. H. Head, The Drive Nursery, Hove; 2nd, Mr. J. Hill, gr. to Marriage Wallis, Esq., Springfield, Witheane. Both these exhibits were very good, and tastefully arranged.

Group (11½ by 6½ feet): 1st, Mr. F. Fairs, gr. to R. Clowes, Esq., Clayton Whickham, Hassocks; a grand lot of blooms, both in colour and size. 2nd, Mr. Sims, gr. to C. J. Inwood, Esq., Brighton.

For a group of similar dimensions, but to consist of only twelve plants, Mr. J. Turner, gr. to Sir Greville Smythe, Bart., Hove, was 1st, with a very pretty lot; Mr. G. Sims being a good 2nd.

Specimen plants were well shown, the chief prizes going to Mr. J. Hill, gr. to Marriage Wallis, Esq., and Mr. A. Scutt, gr. to Mrs. Jenkins. Well-grown specimens of *Primula* and *Mignonette* were also a feature. Six table plants, flower or foliage, in 6-inch pots, brought good competition, resulting in Messrs. W. Miles & Co., Brighton, and Mr. Goldsmith taking 1st and 2nd in the order named.

Cut Flowers.—In the cup class, for thirty-six Japanese, Mr. C. Ritching, gr. to Dr. Frankland, Reigate Hill, Surrey, had a splendid lot, his best blooms being Colonel Smith, E. Molyneux, Prince du Bois, W. H. Lincoln, Vivian Morel, and Charles Shrimpton; A. Slaughter, Esq., Steyning, was 2nd.

Twenty-four Japanese also brought forward some good blooms, the 1st and 2nd going to A. Slaughter, Esq., and Mr. G. Goldsmith, gr. to Sir E. Loder, Bart.; while the two premier prizes for twenty-four incurved varieties were awarded in the following order—Mr. Ritching and Mr. Goldsmith respectively.

A rather important class was that for twelve Japanese, Mr. S. Horscroft and Mr. Fowler securing 1st and 2nd with good blooms; but for twelve incurved, Mr. Fowler was 1st, and Mr. Horscroft 2nd, changing places. There were several minor classes, but our space prevents a more detailed report.

Baskets of Chrysanthemums were well shown by Messrs. Perkins & Son, Coventry, and Mr. G. Miles, Brighton, who were placed in like order. One stand for table also attracted much attention, Mrs. F. Rapeley, Witheane, and Mrs. Osman, being 1st and 2nd.

Fruit.—Grapes, three bunches of white, 1st, Messrs. Johnson & Crook, Worthing; 2nd, Mr. Duncan, gr. to C. T. Lucas, Esq., Warnham Court. Three bunches of black, 1st, Mr. Duncan, with splendidly finished examples; 2nd, Mr. A. Kemp, gr. to C. R. Scrase-Dickens, Esq., Horsham. For four dishes of dessert Pears, Mr. Goldsmith had good fruit of Glou Morceau, Beurré Alexandra, Lucas, Beurré Diel, and Doyenné du Comice, which well deserved the 1st prize. Four dishes of dessert Apples resulted in Mr. Jacob being 1st, while Mr. Webster was a good 2nd. For a similar number of culinary varieties, Mr. Goldsmith and Mr. Jacob, Petworth, took the two chief prizes. Vegetables of all kinds were particularly good, but Leeks, Carrots, Onions, and Potatoes were of extra quality. Special prizes were offered by Messrs. Sutton & Sons, J. Cheal & Sons, W. Wood & Sons, and W. Miles & Co., which resulted in strong competition.

The most notable exhibits, not for competition, were those of Messrs. Balchin & Sons (fruit, bulbs,

Orchids, &c.), Mr. Tilley (bulbs and various horticultural sundries), and Mr. H. Stringer (wreath and bouquet), all of whom are leading firms in the town.

PUTNEY, WANDSWORTH, & DISTRICT CHRYSANTHEMUM.

NOVEMBER 8, 9.—The above Society held its annual show in the Cromwell Hall on the above dates, and taken as a whole it may be said to be quite equal to those of former years, but in common with the principal shows of the season there is a decided deficiency in the size and finish of the Queen section. Glancing along the tables the eye could not fail to observe the number of that excellent "Japanese," Vivian Morel, and in every instance it was in good form, which speaks much for its "doing" properties. Col. W. B. Smith, though not so frequently met with, was represented by some very fine blooms, its dark golden hues being conspicuous. Putney has always turned out some very choice groups, and this year there were five competitors for the Silver Cup (which by the way is a very handsome piece of workmanship), and in each case there was considerable merit in the growth and in arrangement of the same. That of Mr. Mynett, who claimed the trophy, was all that could be desired. Mr. French was 2nd, his group having a goodly number of the incurved flowers.

In the class for twenty-four incurved, Mr. J. Dark, gr. to J. Hooker, Esq., was 1st, his best being Mrs. Heale, Violet Tomlin, and Princess of Wales; he was followed closely by J. Portbury, gr. to W. N. Troy, Esq. The same exhibitor was placed 1st in the class for twelve, and had good representatives of Mr. Bunn and May Tomlin; Mr. S. Mynett, gr. to Col. Poe, C.B., was awarded the 2nd place, Nil Desperandum, Jeanne d'Arc, and Lord Wolseley being noticeable in his stand. In the class for six blooms, the latter exhibitor was 1st.

Mr. J. Portbury was placed 1st in the twenty-four Japanese, with a heavy lot of bloom, his Vivian Morel, Boule d'Or, Gloire du Rocher, Vice-President Audignier, and an excellent flower of Lord Brooke making him an easy 1st; the latter bloom secured for him the prize for the premier Japanese in the Hall. The same exhibitor gained a like honour in the incurved section with a very fine flower of Lord Alcester; the 2nd prize went to W. J. Wright, gr. to H. A. Tuffnell, Esq.

In the class for twelve Japanese, Mr. J. Portbury was again placed 1st, followed closely by S. Mynett. Mr. C. Bently, gr. to Captain W. J. Bosworth, secured the prize for six bunches of Pompons in the amateurs' classes. J. W. Lambert, Alfred Jass, and W. B. Rogers, were successful competitors, all showing neat blooms. Of single-handed gardeners, Mr. J. Dark, Mr. Bartley, Mr. Page, and Mr. Lambert, were again to the front.

The Silver Cup given for a group of eighteen plants went to Mr. J. Holmes; while in trained specimens, Mr. C. Bently and Mr. J. Portbury were the successful competitors.

Miscellaneous exhibits were numerous, and up to their usual standard, Apples, Pears, Grapes, and vegetables being shown in good character.

The 1st prize for a group of mixed plants arranged for effect was taken by Mr. J. Portbury; the same exhibitor taking 1st for six plants for table.

A pretty group of plants, arranged for effect, but not for competition, was contributed by Mr. J. F. McLeod, gr. to — Morgan, Esq., Dover House, Roehampton.

SCOTLAND.

NORTH OF SCOTLAND HORTICULTURAL AND ARBOREICULTURAL ASSOCIATION.

At the monthly meeting of this association, held on October 18, there was exhibited by Mr. Wm. Ogg, gr. to Sir Archibald Dunbar, Duffus House, Elgin, a remarkable collection of fruit, comprising Apples, Pears, and Plums.

The Apples and Pears were of very large size, well-ripened, and of fine quality. The committee unanimously awarded the collection a Cultural Certificate with special commendation.

It may interest your readers to have particulars of Mr. Ogg's produce. It will give them an idea of what can be done in the genial, though far north climate of Morayshire, when favoured with a fine summer like the past one.

The fruit was grown in the open air without any artificial means being used. The varieties, weights,

and sizes, are as follows:—Apples: Peasgood's Nonsuch, largest six weighed 8 lb. 6½ oz.; the heaviest fruit 1 lb. 8½ oz., and measured 1 foot 3½ inches in circumference. Warner's King, six weighed 6 lb. 15½ oz.; one heaviest 1 lb. 4½ oz., and measured 1 foot 2¼ inches in circumference. Cellini, six weighed 4 lb. 1½ oz.; one heaviest 14 oz., and measured 1 foot 1 inch in circumference. Gospatric, six weighed 2 lb. 10 oz.; one heaviest 8 oz., and measured 10 inches in circumference. Pears: Calabasse Grosse, six weighed 9 lb. 9½ oz.; heaviest one weighed 1 lb. 12½ oz., and measured 12½ inches circumference, by 9½ inches longways. Catillac, six largest weighed 5 lb. 11½ oz.; one heaviest, 1 lb. 1½ oz., and measured 12½ inches in circumference. S. evenir du Congrès, six weighed 6 lb. 13½ oz.; one heaviest, 1 lb. 4½ oz. Sinclair, six weighed 5 lb.; one heaviest, 14 oz. Geo. C. Minty, Secretary. [The above report has been unavoidably delayed. Ed.]

NORTH OF SCOTLAND ROOT AND VEGETABLE ASSOCIATION.

The twenty-third annual exhibition of this Association was held on Saturday, the 4th inst., in the Drill Hall, Inverurie, N.B. For many years this Association has occupied a very prominent position in the North of Scotland among associations of its kind, and, indeed, there is probably in Scotland no better organisation, or one that has been more productive of benefit in raising the standard of the quality of the products which its members have set themselves to advance and encourage. It has been extremely fortunate, too, in the gentlemen who have occupied the post of secretary. The members have also been very enthusiastic, and the prizes they have been able to offer have attracted competitors from a wide district. The show of Saturday was one of the best the Association has had for a number of years, both with respect to the number of the entries and the high quality of the produce shown. The exhibition had all the features which have hitherto rendered it so attractive. The entries were beautifully staged on white cloth, while the centres of the two main tables were very handsomely adorned with fine foliage and flowering plants, which, as has been the case for a number of years, Messrs. W. Smith & Sons, of Aberdeen and Kintore Nurseries, have supplied for the occasion without fee or reward.

The entries numbered 800, which is nearly 200 more than last year. There was a strong competition in both classes of Turnips, the special prize for best white Swedes going to Sir Robert Abercromby, Bart., of Forglen, while that for best yellows went to Mr. Reid, Cuthay. Potatoes, both field and garden, were a fine display, Mr. Ferguson, Linton House, carrying off the piece of plate with splendid specimens of Regents. Mr. James Paterson, Torries; Mr. J. Lawson, Scotmill, Alford; and Mr. R. Cowie, Newlands, were also very successful.

Fruit was worthy of special commendation. An improvement may be suggested here, namely, that the varieties of Apples and Pears should be distinctly named. For baking Apples, of which there were some very fine dishes, Mr. G. Donaldson, Keithhall; Mr. James Barron, Meldrum; and Mr. R. Grant, Pitlochrie, carried off the premier honours. For best collections of dessert Apples, Mr. J. Barron and Mr. Gilchrist were 1st. For best collection of twenty-four Pears, Mr. P. Ogg, Fintray House, was well deserving of the chief place he held.

The collections of fruit forwarded were much admired; that sent in by Mr. A. Smith, Cullen House, coming in for a good deal of attention. Mr. P. Ogg, Fintray House, had also a 1st in this section. The vegetables were a grand display, and the prizetakers were the leading gardeners in the north of Scotland.

THE DINNER.

A dinner was held in the afternoon, at which Mr. Lumsden of Balmedie, presided. He was supported by Sir Arthur Grant, of Monymusk, Dr. Farquharson, M.P., and a large number of the leading county gentlemen.

ORCHARD-HOUSE CULTURE: THE PEAR.

THE fine garden of Martin R. Smith, Esq., Hayes Common, Kent, has become well-known for the choice Carnations it contains; but Mr. Blick, who grows the Carnations so well, is a good all-round

gardener, and successfully cultivates orchard-house trees in pots, the Peach, Nectarine, Plum, Cherry, and Pear. I wrote about the culture of the Pear in pots as an orchard-house fruit in the *Gardeners' Chronicle* many years ago, and pointed out that better fruit could be so obtained, than from wall trees under the best system of culture. Long before that, Mr. Rivers, of Sawbridgeworth, had shown how well Pears could be cultivated in an orchard-house built in the cheapest manner, and amongst amateur cultivators of a quarter of a century ago the highest award is due to George F. Wilson, Esq., for the splendid examples of Louise Bonne de Jersey, and other varieties he used to produce in the old garden at The Cottage, Weybridge. As an example of high-class cultivation, Mr. Blick sends me a photograph of six specimens of Pitmaston Duchess, the largest of them weighed 40 oz., and the united weight of the six turned the scales at 13 lb. 14 oz., or an average of 37 oz. Large flower-pots are not used, 12 and 13 inches diameter inside measure is a good average size, and for the rest good cultivation is all that is needed. I can quite understand some one saying, "What are we to understand by good culture?" Or, the question may be asked, "Is it necessary to grow Pear trees in pots at all?" I may say at once in answer to the last query, that they have been tried planted out in houses, and success has not followed this method of culture. The Peach and Nectarine may be so cultivated, but not the Pear. Therefore if the Pear has to be grown under glass, it must be under a system of pot culture.

Mr. Blick informed me that he keeps his trees in the house until the fruit is set, and they are turned out-of-doors in favourable weather in May; and the large specimens alluded to above were produced from a tree so treated. As the roots are confined to a very small quantity of soil, it is essential that it be good yellow loam, suitable to the growth of the trees, and to three parts of loam and one of good decayed stable manure is added; and to each barrow-load of loam an 8-inch potful of crushed bones; half-inch bones are best, as they keep the potting material in an open porous condition. A good grower does not want his trees prepared for him, although when time is an object, it is better to purchase the trees in pots; I would rather have trees that had been one year only under pot-culture than longer, but by preference I should choose well-rooted trees two years old from the nursery, and pot them up myself. If the trees have grown up from the first under the care of one cultivator, the chances of success are greater. After repotting the trees in November, plunge the pots containing them out-of-doors, quite over the rims of the pots in Cocoa-nut fibre refuse; this is excellent material for the purpose. Whenever the weather is mild, roots will push out freely during the winter, and by the time the trees are placed in the house in February they will be well established. Drain the pots well, and keep the drainage open; and in potting the trees, ram the compost well in with a wooden rammer, and do not fill the flower-pots too full—leave about an inch in depth to be filled up with some rich surface-dressing when the trees are in growth in the summer. These surface-dressings give great vigour to the trees, and it is owing to them that the fruit develops to such a large size. Some persons may suppose that such large fruit is not of good flavour; but the proof of the Pear, as of the pudding, is in the eating of it, and all agree that the flavour of fruit grown upon such trees is excellent. *J. Douglas.*

LAW NOTES.

SANDER v. GREAT NORTHERN RAILWAY COMPANY.

The plaintiff, Mr. Frederick Sander, trading as Sander & Co., a nurseryman and Orchid grower, of St. Albans, sued the Great Northern Railway Company to recover £530 6s., the value of Orchids damaged in transit. It appeared that in July, 1892, the plaintiff sent a consignment, worth between £800 and £4000, of some 400 Orchids, together

with some Ferns, to the Horticultural Exhibition at Earl's Court, and that at Hatfield Station the truck containing the plants was run into, with the result that several were damaged. The defendants did not dispute their liability, but contended that the claim was excessive. Mr. Reid, Q.C., and Mr. Graham appeared for the plaintiff; and Mr. Murphy, Q.C. Mr. C. A. Russell, and Mr. Colville for the defendants. The jury returned a verdict for the plaintiff for £350.

VARIORUM.

CHRYSANthemUMS.

FALLING leaf and faded flower
Bring anew the autumn hour;
And the white mists earlier rise
Where the filling river lies;
Gathered is the golden grain:
But the gold flower comes again.

Blood-red sets the autumn sun
Now the year's best work is done.
Chillier beat the autumn rains
Falling on our colder veins:
But the season mocks the year,
For the blood-red bloom is here.

From "*Musa Consolatrix*," by Charles Sayle.

THE WEATHER.

(By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.)

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
	Above (+) or below (—) the Mean for the week ending November 4.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 1, 1893.	Below 42°, difference from Mean since January 1, 1893.				
0	5 —	1	30	+ 533	— 54	5 +	208	43.6	21
1	5 —	1	34	+ 337	— 3	0 aver	162	22.3	44
2	4 —	16	30	+ 439	— 48	3 —	136	16.7	41
3	2 —	35	19	+ 541	— 46	3 —	138	16.3	30
4	2 —	35	20	+ 625	— 62	4 —	132	16.6	31
5	1 —	41	8	+ 614	— 55	3 —	132	19.1	28
6	3 —	16	29	+ 466	— 50	2 +	168	33.8	41
7	2 —	39	10	+ 780	— 93	2 —	154	25.6	26
8	0 aver	40	2	+ 727	— 77	5 —	142	26.9	25
9	2 —	30	15	+ 573	— 95	1 —	180	28.4	33
10	1 —	37	5	+ 622	— 100	4 —	156	25.7	28
* 1 +	65	0	+ 884	— 52	4 —	150	22.8	26	55

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S.; Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 4, is furnished from the Meteorological Office:—

"The weather was again unsettled and changeable, with frequent rain, hail, or sleet in the north-west and north; but in the more southern and eastern districts, the earlier part of the week was fair and dry, and the rain experienced during the latter half generally slight. Thunder and lightning occurred at some of our southern stations during the night of October 30—31.

"The temperature was slightly above the mean in the 'Channel Islands,' and about equal to it in 'England, S.W.,' in all other districts, however, there was a deficit, ranging from 1° in 'England, S.' and 'Ireland, S.' to 4° in 'England, N.E.' and 5° in 'Scotland, E. and N.' The highest of the maxima, which were recorded on November 3, over England and Ireland, and on rather irregular dates in Scotland, ranged from 63° in 'England, S.' and the 'Midland Counties,' to 51° in 'Scotland, E.,' and to 47° in 'Scotland, N.' The lowest of the minima were registered during the middle part of the week, when the thermometer fell to 21° in the 'Midland Counties' and 'England, S.W.,' to 23° in 'England, S.,' and to between 25° and 28° in almost all other districts.

"The rainfall again exceeded the mean in 'Scotland, W. and N.,' and just equalled it in 'Scotland, E.,' in all other parts of the kingdom, the fall was less than the normal, the deficit being, in most cases, considerable.

"The bright sunshine showed an increase in most districts on that recorded during the preceding week, and exceeded the mean generally. The percentage of the possible duration ranged from 44 in 'Scotland, E.,' and 41 in 'England, N.E.' and 'Scotland, W.,' to 26 in the 'Channel Islands,' 25 in 'England, S.W.,' and to 21 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, November 9.

(We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, Ed.)

PRICES rule as last week.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Ferns, small, per 100	4 0-6 0
Aspidistra, per doz.	15 0-30 0	Foliage plants, doz.	12 0-42 0
— specimen, each	7 6-21 0	Fuchsia, per doz.	4 0-6 0
Chrysanthemums, doz	6 0-9 0	Hydrangea, per doz.	12 0-24 0
— large plants, each	1 6-2 0	Lilium Harrisii	18 0-24 0
Cyperus, per dozen	4 0-10 0	Marguerite, per doz.	6 0-12 0
Dracena, each	1 0-5 0	Mignonette, doz. pots	6 0-9 0
Erica, various, p. dz.	9 0-24 0	Palms, various, each	2 0-10 0
Evergreen Shrubs, in var., per dozen	6 0-24 0	— specimens, each	10 6-84 0
Ficus elastica, each	1 6-7 6	Pelargonium, scarlet, per dozen	3 0-6 0
Ferns, various, doz.	4 0-9 0	Solanums, per doz.	9 0-12 0

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	2 0-5 0	Narciss, white, French, 12 bunches	2 6-4 0
Bouvardias, per bun.	0 6-1 0	— yellow, 12 bun.	4 0-6 0
Carnations, 12 blms.	1 0-2 0	Orchids:—	
Chrysanthemums, 12 bunches	2 0-6 0	Cattleya, 12 blms.	6 0-12 0
— doz. blooms	0 6-3 0	Odontoglossum crispum, 12 blms.	2 0-6 0
Eucharis, per dozen	3 0-6 0	Pelargonium, scarlet, p. 12 bun.	4 0-6 0
Gardenia, per dozen	2 0-4 0	— 12 sprays	0 6-1 0
Heliotrope, 12 sprays	0 3 0-6	Primula, dble. p. bun.	0 6-1 0
Hyacinths, Roman, 12 bunches	0 8-1 0	Pyrethrum, 12 bun.	2 0-4 0
Lilac (Fr.), per bun.	4 0-6 0	Roses, doz. bunches	...
Lilium lancifolium, p. doz. blooms	2 0-3 0	— Tea, per dozen	0 6-2 0
— Harrisii, p. doz.	6 0-9 0	— coloured, dozen	2 0-4 0
Lily of the Valley, per dozen sprays	2 0-3 6	— yellow (Maréchal), per doz.	2 0-6 0
Maiden Hair Fern, 12 bunches	4 0-6 0	— red, per dozen	1 0-1 6
Marguerite, 12 bun.	1 6-3 0	Tuberose, 12 blms.	0 4-0 6
Mignonette, 12 bun.	2 0-4 0	Violets, Parmé, p. bun.	2 0-2 6
		— Czar, per bun.	1 9-2 0
		— English, per doz.	1 6-2

ORCHID-BLOOM in variety.

CHRYSANthemUM-BLOOM very plentiful, price is low in consequence.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, per bush.	1 0-6 0	Pine-apples, St. Michael, each	3 0-7 6
Cobs, per 100 lb.	32 6-...		
Grapes, per lb.	1 0-8 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	0 6-...	Lettuces, per doz.	1 6-2 0
Beet, red, per dozen	2 0-3 0	Mushrooms, punnet	1 6-2 0
Carrots, per bunch	0 4-0 6	Mustard and Cress, punnet	0 2-...
Cauliflowers, each	0 3-0 6	Parsley, per bunch	0 2-0 3
Celery, bundle	1 0-1 3	Shallots, per lb.	0 3-...
Cucumbers, each	0 6-1 0	Tomatoes, per lb.	1 0-...
Endive, per dozen	1 3-1 6	Turnips, per bunch	0 4-0 6
Herbs, per bunch	0 3-1 0		
Leeks...	0 4-...		

POTATOS.

Arrivals are not quite so heavy, and a better demand for good samples. Prices about same as last quoted, except for ordinary kinds, which are a drug on the market. *J. B. Thomas*

SEEDS.

LONDON: Nov. 8.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with scarcely any business passing. Cables from America quote red Clover seed somewhat dearer. For Winter Tares the inquiry still continues; very few, if any, will be carried over. Rye keeps steady. Linseed is quiet. Full prices are realised for Canary seed, and in view of the small and rapidly diminishing stocks, higher rates are shortly anticipated. Fine new Hemp seed is now obtainable at moderate figures. In Peas and Haricots there is no fresh feature.

FRUITS AND VEGETABLES.

BOROUGH: November 7.—Quotations:—Cabbages, 3s. to 5s.; Savoy, 4s. to 5s.; Cauliflowers, 5s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 5s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; Apples, 1s. 3d. to 6s. per bushel.

SPITALFIELDS: November 7.—Quotations:—Cabbages, 3s. to 5s.; Savoy, 4s. to 5s.; Cauliflowers, 5s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; English ditto, 5s. 6d. to 6s. 6d. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

FARRINGTON: Nov. 9.—Quotations:—Carrots, 50s. to 60s. per ton; Parsnips, 60s. to 65s. do.; Sprouts, 2s. to 2s. 6d. per bushel; English Onions, 2l to 2s per ton; Apples, Blenheim, 4s. 6d. per bushel; cooking, 3s. to 3s. 6d. per bushel; Tomatoes, English, 3d. per lb.; do., foreign, 3d. do.; Grapes, Almeida, 9s. 6d. to 10s. 6d. per barrel; do., English, 1s. to 1s. 6d. per lb.; Spanish Onions, 6s. to 6s. 6d. per case.

STRATFORD: Nov. 8.—There has been a good supply of all kinds of produce at the above market during the past week, and a brisk trade has been done at the undermentioned prices:—Cabbages, 2s. to 3s. per tally; Savoy, 2s. 6d. to 4s. 6d. per tally; Greens, 2s. to 2s. 6d. bunches; Cauliflowers, 1s. to 1s. 6d. per dozen; do., 5s. to 6s. 6d. per tally; Turnips, 1s. 3d. to 1s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 40s. to 45s. per ton; do., cattle-feeding, 30s. to 35s. per ton; Parsnips, 40s. to 60s. per ton; Mangels, 22s. to 27s. per ton; Swedes, 25s. to 28s. per ton; Onions, English, 8s. to 9s. per bag; do. Dutch, 6s. to 6s. 6d. per bag; Apples, English, 2s. to 4s. 6d. per bushel; Sprouts, 1s. 6d. to 1s. 9d. per half-sieve; Horseradish, 1s. 4d. to 1s. 6d. per bundle; Celery, 8s. to 10s. per dozen rolls; Beetroot, 6d. to 8d. per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: November 7.—Quotations ranged from 40s. to 110s. per ton—the prices of last week.

STRATFORD: Nov. 7.—Quotations:—Magnums, dark-land, 40s. to 45s.; do., light-land, 45s. to 60s.; Sutton's Abundance, 60s. to 70s.; Bruces, 50s. to 60s. per ton.

FARRINGTON: Nov. 9.—Quotations:—Main Crop, 80s. to 90s.; Sutton's Abundance, 70s. to 80s.; Bruces, 50s. to 60s.; Magnums, 45s. to 55s. per ton.

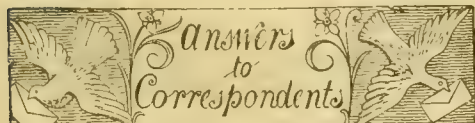
LONDON AVERAGES: Nov. 8.—Hebrons, 80s. to 110s.; Regents, 50s. to 80s.; Magnums, 40s. to 65s.; Champions, 45s. to 65s.; White Elephants, 60s. to 90s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, best, 140s. to 155s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s. New Mixture, 115s. to 130s.; and Straw, 35s. to 58s. per load.

CORN.

Averages.—Official statement of the average prices of corn, imperial measure (quarter) for the week ending November 4, and for the corresponding period last year:—1893: Wheat, 27s. 4d.; Barley, 29s. 5d.; Oats, 18s. 2d. 1892: Wheat, 28s. 9d.; Barley, 27s. 7d.; Oats, 17s. 9d.



BOOKS: TABLE DECORATIONS: *Inquirer and S. T. Artistic Flower Decorations*, by B. C. Savard. Published at the Bazaar Office, 170, Strand, W.C. Price 2s.

CATTLEYA BLOOMS: *J. M., Raudon Hill*. The blooms were all excellent, and especially so the one marked C. labiata maxima, Backhouse variety, and Nos. 1, 5, 6, and 7. The labellum in these blooms being finer in form or in richness of colour than in the other blooms.

CLIMBERS AND TRAILERS FOR SOUTH AND WEST WALLS: *Abdon*. The flowering plants may consist of *Calycanthus occidentalis*, *Chimonanthus fragrans*, *C. grandiflorus*, *Clematises candida*, Florida, Jackmani, lanuginosa, magnifica, rubella, &c.; *Cianthus puniceus*, *Cydonia japonica*, *Edwardsia microphylla*, *Jasminum officinale*, *J. revolutum*, *J. grandiflorum*, *Lonicera flexuosa*, *L. fuchsoides*, *L. semper-virens*, *L. Standishii*, *Magnolia conspicua*, *M. grandiflora*, *M. Lenne*, *M. purpurea*, *M. glauca*, *Passiflora cœrulea*, Fortune's Rose (the double yellow), *Rosa Banksia*, *Gloire de Dijon*, &c. The plants with evergreen or variegated foliage may consist of *Crataegus pyracantha*, *Coprosma Baueriana*, *Eunonymus japonicus* in variety, green and variegated; *Hedera albobmarginata*, *H. algeriensis*, and *H. a. variegata*, *H. aureo-marginata*, *H. digitata*, *H. hibernica*, *H. h. aureo-maculata*, and many others.

DROUGHT AND THE SOIL: *S. S. W.* The investigations necessary for ascertaining the character of the chemical changes effected by the dryness of the past season would be too costly for us to undertake, and we are unable off-hand to say what those changes are, if any. That the soil has parted with less of its manurial properties, owing to the absence of rain, may be taken for granted; but there may have been more rapid decomposition of animal and vegetable matters within the soil.

EUCHARIS BULBS: *Eucharis amazonica*.—The bulbs are quite unaffected by the bulb-mite, and the appearance noted in the foliage may be due to something in the air of the house, fumes from painted hot-water pipes, &c.

EXAMINATION IN AGRICULTURE: *S. S. W.* You would be obliged by the Science and Art Department to become well acquainted with the advanced stages before sitting for an examination in honours.

FRUIT ROOM: *G. M.* A room situated over horse-stables may be too warm and dry for the proper keeping of Apples, and you may have given too much air, making the evaporation of the juices of the fruit so rapid that the latter becomes shrivelled. The best kind of fruit room is one that is cool and rather damp, and to which just sufficient air is afforded to dissipate excess of moisture, much more for the first month after storing the fruit than is needful after that lapse of time. If you must retain the room as a fruit-store, darken it by putting close-fitting shutters over the windows; and if it be open to the roof, have it boarded over so as to form a ceiling, or employ thatch instead of tiles, &c. as a roof, and make use of no straw or hay in the room.

HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY: *Acorn*. The address of the secretary is W. Collins, 9, Martindale Road, Balham, London, S.W.

JERUSALEM CHERRY: *A. T.* It is not the custom for respectable English journals to insert editorial paragraphs relating to matters of which the editor knows nothing. Nor can we entertain your proposition to insert such a notice on the condition that you advertise in our columns; such a proposal is insulting.

LAMP-BLACK AND BOILED LINSEED OIL: *A. S.* This is the best coating for hot-water pipes.

LATE HYACINTHS: *W. L.* You have done right in placing these in ashes out-of-doors. When they have pushed about half an inch through the crown, remove them to a cold frame, but they must be protected from frost. Treated thus, you will have them until late in the spring.

MARKET FERNS: *G. T.* The strong-growing bluish-green Fern with golden yellow dust on the underside of the frond is *Phlebodium aureum*. *Woodwardia radicans* is also grown for market.

MIDLE MARIE HOSTE: *A. T.* The flowers which you sent for our inspection were white ones, and we consider the judges did wrong in altering their decision.

MIGNONETTE: *E. B.* The word means in French little Mignon, ~~the~~ being the diminutive ending. There is no need for an *é*, as in the mis-spelling

Mignonette; nor of two *n*'s in the middle, another form of mis-spelling. The word is pronounced Meenōnett.

NAMES OF FRUITS: *W. A.* Some of your Pears were named in our issue for October 21, line 8. Some of the fruits were over-ripe before they could be dealt with, and we must remind you that you failed to observe our rules in two instances—first, in omitting to furnish your name and address; and secondly, in sending seventeen specimens instead of six, the number allowed at one time.—*C. H. S.* Your Grape is the Block Hamburg.—*J. T. A.* Apple not known—seems worthless.—*J. G.* 1, Warner's King; 3, Alfriston; 4, Rhode Island Greening; 6, Beurré Diel.—*No Letter*, fruit packed in tin box, the numbers written on tickets about the size of postage stamps. 1, Beurré Rance; 2, Beauty of Kent; 3, Tower of Glamis; 4, Passe Colmar; 5, Beurré Diel.—*H. H.* 1, Bergamotte d'Eperen; 1, Apple Dumelow's Seedling; 2, Scarlet Nonpareil; 9, Lane's Prince Albert; 4, Cox's Pomona?; 8, Beurré Rance?—*W.*, *Subscriber, Hampstead*. 1, Over ripe; 2, Beurré Diel; 3, Glou Moreau; 1, Apple Rhode Island Greening; 2, Not known; 3, Court of Wick.—*W. W.* If not Lord Suffield, we know not what it may be; 3, Court Pendu Plat; 4, Striped Beefing.—*W. T.* Your Pear is not known—a worthless sort.

NAMES OF PLANTS: *J. W. B.* *Bupleurum fruticosum* (Umbelliferae).—*E. J.*, *Botley*. *Datura Stramonium* Thorn Apple. Poisonous, but used medicinally in asthma, &c.—*A. S.*, *Chester*. 1 and 2, *Tropæolum*, garden forms obtained from seeds; 3, *Bignonia venusta*, illustrated in *Gardeners' Chronicle*, March 1, 1879; 4, *Cyperus laxus*.—*W. F. & Son*. *Eulalia japonica*.—*R. M.*, *Paisley*. *Odontoglossum Andersonianum*.—*A. H. H.* The white is *Dendrobium album*, the coloured *Lælia autumnalis Arnoldiana*, of gardens.—*Col. B.* 1, the old stems of *Dendrobium* such as you send pieces of should be cut off close down to the base, and in the same way all shrivelled old bulbs may be removed; 2, we should discontinue the daily sprinkling until the plants started into growth again; 3, the temperature of the house is correct for most of the species.—*E. S.*, *Devonport*. 1, *Adiantum gracillimum compactum*; 2, *Pteris argyrea*; 3, *Adiantum trapeziforme*; 4, *Dieffenbachia nobilis*; 5, *Maranta albo-lineata*; 6, *Phyllanthus nivosus*.—*R. M.* *Forsethia suspensa*, probably.—*C. A. B.* *Cattleya Walkeriana*, of good colour, and a pale form of it valuable as a variety.—*J. H. H.* *Polemonium cœruleum*, variegated variety.—*Robert Birkbeck*. So far as we can tell from the scrap sent, it is *Eucalyptus citriodora*.

QUACK ADVERTISEMENTS: *B. J.* The advertisement to which you refer was cancelled immediately its nature became known, and the contract set aside at our risk. Every precaution is taken, but it is obvious that the publisher cannot know and cannot make investigations as to the good faith of all advertisers.

YELLOW AND DARK-COLOURED SULPHUR: *A. S.* Sulphur vivum or black sulphur is the cheaper kind, and it is as good for garden uses as the yellow kind. It is imperfectly purified sulphur, that is all.

COMMUNICATIONS RECEIVED.—*H. Russell*.—*W. H. D.*—*J. J. W.*—*T. T.*—*A. P.*—*F. W. S.*, Cannes.—*G. S. B.*—*O. T.*—*W. R.*—*Ch. Lorenz*, Erurt.—*W. O.*, Bedale.—*C. G. S.*, Arnold Arboretum.—*W. O.*—*E. T.*—*O. D.*—*J. S.*—*H. J. V.*—*W. G. S.*—*F. W. S.*—*W. L. L.*—*A. T.*—*C. L.*—*Barr & Sons*.—*W. N.*, Johannesburg.—*H. G. S.*—*W. & N.*—*Thos. Smith*.—*N. Z.*—*J. G. B.*—*M. T.*—*Riviera*.—*J. J. Willis*.—*W. H.*—*B. W.*—*J. O'B.*—*M. C. C.*—*J. C.*—*H. M.*—*H. W. W.*—*S.*—*A. P.*—*Osman & Co.*—*A. M. C.*—*E. D.*—*S. & Co.*—*Alex. Morrison*.—*Cassell & Co., Limited*.—*W. C.*—*H. S.*—*F. E. T.*—*C. Shenton*.—*A. D.*—*T. O.*—*E. T. C.*—*J. C.*—*W. R.*

FRUITS RECEIVED.—*C. H.*—*A. W.*—*A. B.*—*Roses*.—*Bowers*.—*Rev. H. E.*—*E. C.*—*J. B.*—*W. E.*, and others.

CONTINUED INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

WHINHAM'S INDUSTRY GOOSE-BERRY, the most profitable Gooseberry in cultivation. Strong 2-year old bushes, 2s. 9d. per dozen.
THOMAS H. COLEMAN, Saffron Walden.

Plants Shipped to all Parts.

WATSON AND SCULL, 90, Lower Thames Street, London, E.C., give special attention to the reception and forwarding of Plants and Botanical Specimens to and from all parts of the World. Be particular, and have them consigned to our Care, and save Expense and Delay.
Dealers in Virgin Cork, Raffia, Bamboo Canes, Garden Sticks, Palm Seeds, &c.

ANDERSON'S RUSSIA MATS

Are the Best and Cheapest.

GARDEN SUNDRIES OF EVERY KIND.

Illustrated CATALOGUE post-free on application.

JAMES T. ANDERSON,

135 & 137, COMMERCIAL ST., LONDON, E.

PRUNING MADE SAFE AND EASY!

THE STANDARD MANUFACTURING CO., DERBY, beg to announce that they have just completed several valuable improvements and additions to their already world-renowned series of Pruning and Horticultural Appliances. One is styled the "FULCRA" Tree Pruner, which is capable of cutting a branch midway between the sizes that the "Standard" and Giant Tree Pruners will cut, and with the same ease and efficiency. Another is arranged to work with a spring and cord, enabling it to be in jointed sections any reasonable length. It can also be supplied without pole, an advantage if required for export. Our new Patent Combined Branch and Vice Pruner and Trimmer and Fruit Gatherer commends itself for being instantly adjustable for the double purpose. Also the new Patent "Easy" Weed Destroyer, for applying weed-killing compounds without stooping or soiling the hands. Illustrated Price LISTS of the above, and our other well-known Specialties in Pruning and Gardening Appliances, will be sent post-free by us or our Agents—The Principal Ironmongers and Seedsmen, the leading Stores, and kindred trades at home and abroad.

STOCK	SIZES
14x12	20x15
16x12	20x16
18x12	22x16
20x12	24x16
16x14	20x18
18x14	22x18
20x14	24x18

20x12 and 15x12 FOREIGN, of above sizes, in boxes of 100 feet & 200 feet super. ENGLISH Glass, cut to buyers' sizes, at lowest prices delivered free & sound in the country, in quantity.

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FOR CONSERVATORIES & PRIVATE HOUSES

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LEAD, GLASS, OIL, AND COLOUR MERCHANTS

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Stock lists and prices on application. Please quote. Chronicle.

ROBERTS'S (IMPROVED) PATENT

STOVES

TERRA-COTTA! PORTABLE! FOR COAL!

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For Greenhouses, Bedrooms, &c.

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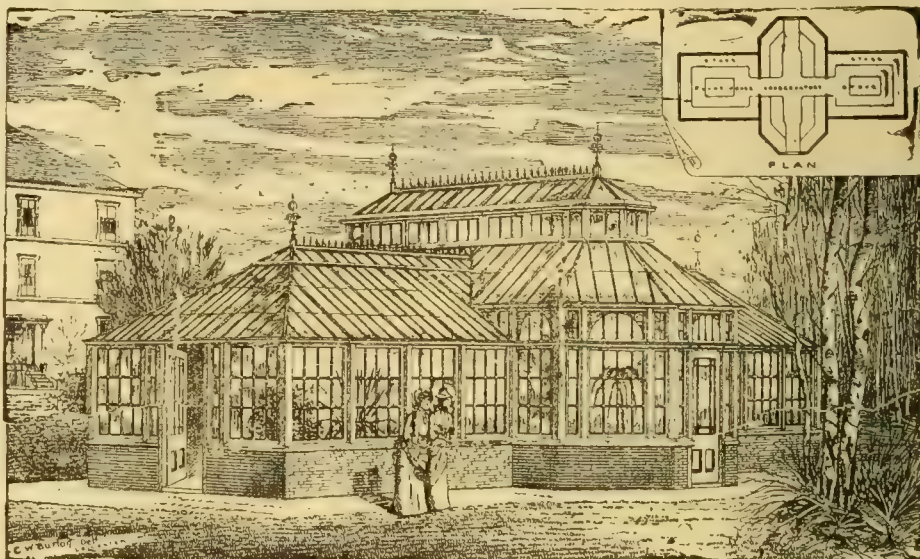
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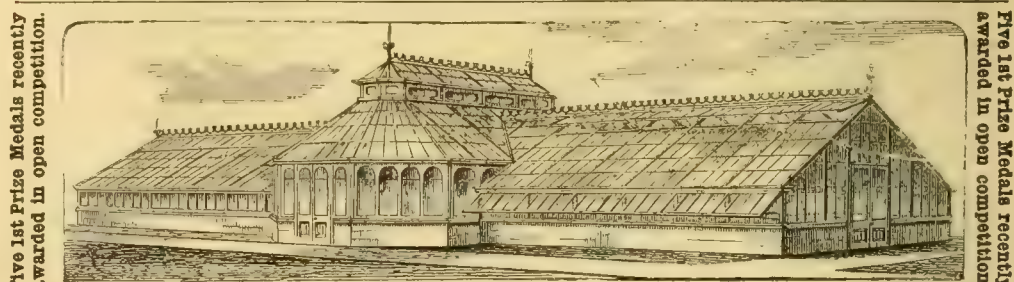


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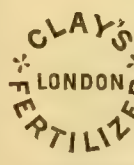
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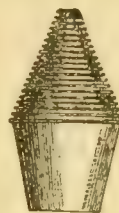
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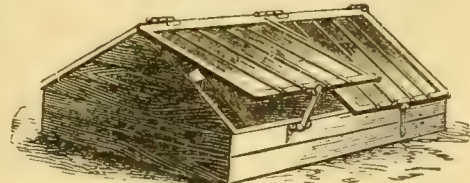
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 The Local Board do not bind themselves to accept the lowest
 or any tender. By order, J. W. BRITTON, Clerk.
 Town Hall, Wood Green, N.—November 9, 1893.

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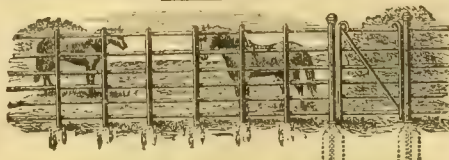
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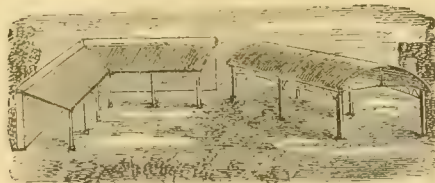
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MR. S. BROWN, late of Pintinsy Park, Malmesbury, as Head
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 General Foreman at Headington Hill Hall, Oxford, as Head
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P.S.—Persons who have applied for a List at any time during the year, need not write again, as I have names and addresses, and one shall be sent in due course.

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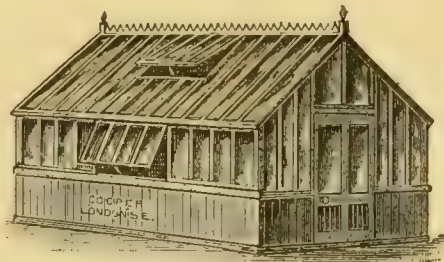
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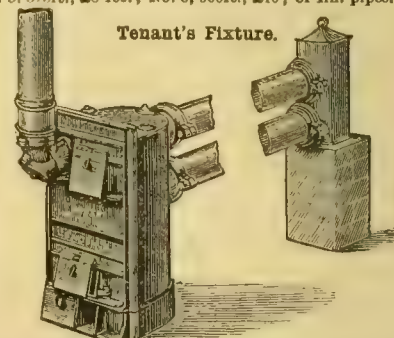
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2760.

No. 360.—VOL. XIV. { THIRD }
SERIES.

SATURDAY, NOVEMBER 18, 1893.

{ Regt. as a Newspaper. } PRICE 3d.
POST-FREE, 3½d.

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"GARDENERS' CHRONICLE."

Continued Increase in the Circulation.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, increased to the extent of 75 per Cent.

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Mixed, per dozen, 9d.
The best named sorts, each separate, per dozen, 1s. and 1s. 6d.

SUTTON'S BULBS GENUINE ONLY DIRECT FROM
SUTTON AND SONS, THE QUEEN'S
SEEDSMEN, READING.

RASPBERRY CANES.—Baumforth's Seed-
ling, 9s. per 100, 70s. per 1000; Norwich Wonder and
Fastolf, 4s. 6d. per 100, 35s. per 1000. Strong Dutch RED
CURRANTS, 2s. 6d. per dozen, 8s. per 100. Free on Rail.
R. H. BATH, Osborne Farm, Wisbech.

CHRYSANTHEMUMS.—Strong cuttings,
now ready, of Beauty of Exmouth, Charles Davis, W.
Seward, Eda Prase, J. Shrimpton, C. Bick, Lord Brooke, Col.
W. B. Smith, White Louis Bismarck, and other best sorts. The
best old sorts from 1s. 6d. per doz., 10s. per 100. Catalogue
one stamp, of W. ETHERINGTON, Swancombe, Kent.

OAKS (English), BEECH, and LIMES,
Standards, all sizes, from 6 to 12 and 14 feet, clean and
good. PRIVET, Oval, all sizes up to 3 feet; EVERGREEN,
1 to 3½ feet. ASH, 3 to 6 feet.
B. R. DAVIS, Yeovil Nurseries, Somerset.

Prize Cob Filberts.

MR. COOPER, Western Elms, Reading (late
of Calcut Gardens), is the largest grower of Prize Cob
Filberts in the Kingdom; 20,000 fine young Trees now ready
for Sale. Pamphlets and Price Lists on Application.

CUCUMBER SEED direct from the Grower.

Selected Telegraph, 5s. per 100 seeds; Ryder's Black
Spine Market, 6s. per 100 seeds; Rochford's well-known
Market Variety, 8s. per 100 seeds. Cash with Order. Special
Quotations to the trade on application.

FELLOWS AND RYDER, Florists, &c., Northumberland
Nursery, Orpington, Kent.

50,000 EUONYMUS, Green and Golden,
all splendid bushy plants.—GREEN: 12 in.
to 15 in., at 30s. per 100; 15 in. to 18 in., at 40s. per 100;
18 in. to 21 in., at 55s. per 100; 21 in. to 24 in., at 75s. per 100;
30 in. to 40 in., at special prices.

GOLDEN: 5 in. to 12 in., at 3s. to 8s. per dozen. Cash with
order. J. J. CLARK, Goldstone, Brighton.

Covent Garden Market.

CHAS. E. COOPER, WHOLESALE FLORIST and
COMMISSION SALESMAN, 33, Russell Street, Covent
Garden, and 370, New Flower Market, W.C., is open to receive
consignments of choice Cut Flowers, Ferns, Foliage, &c. Also
the Provincial Trade supplied at market prices. For terms
and further particulars, apply as above. Price List on applica-
tion. Telegrams, "LAPAGERIA, Lon-on." Bankers, The
National Bank, Limited, Charing Cross Branch.

The Best Present for a Gardener.

VINES AND VINE CULTURE.

The most complete and exhaustive Treatise on
Grapes and their Culture ever published.

Third Edition just out.

Price 5s., post free, 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

To the Trade.

RAPESEED and AGRICULTURAL WHITE MUSTARD.

H. AND F. SHARPE have to offer fine
samples of RAPESEED and WHITE MUSTARD,
suitable for Field Culture. Special quotations and samples on
application.

SEED GROWING ESTABLISHMENT, WISBECH.

WANTED, Six YUCCA GLORIOSA Plants,
4 feet high, with stems not less than 2½ feet. State
price delivered at Lincoln.

C. H. FEARNSIDE, Boultham Hall, Lincoln.

CHRYSANTHEMUMS.—Our new LIST is
now ready. It contains all the most recent introductions,
and they are offered at very moderate prices. Copies free on
application.—DOBIE AND CO., Florists, Rothesay.

LANE'S PRINCE ALBERT APPLE.
A quantity of Maidens for Sale.
Apply to H. T. POTTER, Dunstable.

MAIDENHAIR FERN, cut fronds, packed
to arrive fresh, at 1s. 6d. per 100 fronds; post free for
cash. G. FORBES, Timperley, Cheshire.

Special Trade Offer.

WILLIAM ICLTON has a magnificent Stock
of the leading kinds of PALMS, ARAUCARIAS, and
FICUS, in small pots, to offer cheap. Areca Lutescens, Cocos
Wedd., Corypha Aus., Phoenix rup., Latania borb., Kentias
Fos. and Bel., Araucaria excelsa, Ficus elastica, Dracenas
Lindenii and Doucettii.
Putney Park Lane, Putney, S.W.

Important to Mushroom Growers.

CUTHBERT'S SPECIALITE MUSHROOM
SPAWN. Always alike; most productive. Hundreds
of testimonials. Per bushel, 5s.
R. AND G. CUTHBERT, Seed, Bulb, and Plant Merchant,
Southgate, N. Established 1879.

Grape Vines—Grape Vines—Grape Vines.

B. S. WILLIAMS AND SON
have some extra strong Fruiting and strong Planting
Canes still on hand. Full particulars as to Prices and Varieties
on application.
Victoria and Paradise Nurseries, Upper Holloway, London, N.

RASPBERRY CANES.—Norwich Wonder,
Carter's Prolific, also Fastolf, well rooted.
Not less than 1000 canes supplied.
ALBERT BATH, Vine Court, Sevenoaks, Kent.

ORCHIDS of every description, from 1s. each.
Hundreds of varieties at 2s. Rose plants at low prices.
Satisfaction guaranteed. CATALOGUE free.
THE LEEDS ORCHID CO., Roundhay, Leeds.

To the Trade.

IMPORTANT NOTICE.—When you are in
London, it will be well worth your time to pay a visit to
Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You
can make your notes, and have a business look round, combined
with an outing; you will not be worried to order.

E. D. SHUTTLEWORTH AND CO., LTD.,

Awarded Silver-gilt Flora Medal by the Royal Horticultural
Society; also Gold, Silver-gilt, Silver, and Bronze Medals,
Prizes, and Certificates at other First-class Shows. Our
specialty—really good stuff grown for the Trade.

HORTICULTURAL SHADINGS,
NETTINGS, TIFFANY, WADDINGS,
COTTON WOOL for Packing Flowers, CANVAS, TWINES,
&c., manufactured and supplied wholesale by
JOSEPH COOKSON, 21, New Cannon Street, Manchester.

BONES! BONES!! BONES!!!—Any size
from dust to 1 inch, at 8s. per cwt., at our works; or
10s. per cwt. Carriage Paid; less than 1 cwt. at 10s. per cwt.
at our works. Terms, Cash with Order.
E. S. WILES AND LEWIS, Bone Crushers, St. Albans.

"KILLMRIGHT,"
For Destruction of all Insect Pests and Mildew.

THE STOTT DISTRIBUTOR CO. (Lmtd.),
Barton House, Manchester.

J. WEEKS & Co., Horticultural Builders
to Her Majesty, H.R.H. the Prince of Wales, H.M.
Government, Admiralty Dept., War Dept., Royal Hort. Soc.,
Royal Botanic Soc., Parks and Public Buildings. Patentees of
the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this
Manure is steadily increasing, and it can be had as
formerly of all the leading Nursery and Seedsmen in the
United Kingdom.
London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney.
Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey.
Sole Makers, WILLIAM THOMSON AND SONS, Limited,
Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

Friday Next, November 24.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on **FRIDAY**, November 24, at half-past 12 o'clock precisely, by order of F. Sander & Co., a magnificent importation of

ODONTOGLOSSUM CRISPUM

(The true Pacho variety).

From the same woods whence came nearly the whole of the magnificent large white and splendidly spotted varieties now in cultivation, and imported by us. These woods were leased by us ten years since, so that we might secure for our customers this, the best and very finest of all types of crispum. The collector has just arrived home with a simply grand importation in superb masses, which are in the finest possible condition. From our previous importations, Mirabile, Mundyannum, Cooksonianum, Ballantineanum, Sanderianum, Sanderæ, Hrubyanum, Amesianum, apiatum, and all the finest now in cultivation have flowered, and we recommend with the utmost confidence the present splendid lot. Also

CATTLEYA BROWNII, n. sp., Rolfe.

Distinct and beautiful, combining the chaste and exquisite loveliness of Loddigesii with that of amethystoglossa. The plants have pseudobulbs resembling Cattleya Loddigesii, excepting that they are larger and taller. It is evidently a very free-growing and free-blooming and most desirable new introduction.

The New **DENDROBIUM IMPERATRIX KRANZLI**; flowers rose, white, and purple.

The New **DENDROBIUM VERATRIFOLIUM**, Lindley, now introduced for the first time; flowers pure white.

The New **ONCIDIUM SANDERIANUM**, Rolfe, one of the grandest Oncids ever discovered.

The New **PERISTERIA ASPERSA**, Rolfe, vars. aurantiaca, albidia, purpurea, and atro-sanguinea.

The New **MESOSPINDIUM GRANDIFLORUM**.

ONCIDIUM AUROSUM SPLENDENS, O. HASTIFERUM, New **CELOGYNES**, **ONCIDS**, **ODONTOGLOSSUMS**, &c.

On view morning of Sale and Catalogues had.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.

5000 LOTS SOLD WEEKLY.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION** at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class **HYACINTHS**, **TULIPS**, **CROCUS**, **NARCISSUS** and other **BULBS** from Holland; also **ROMAN HYACINTHS**, **LILIUM CANDIDUM** and other bulbs for early forcing, allotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

Bagshot.

HIGHLY IMPORTANT UNRESERVED SALE of beautifully-grown and well-rooted **NURSERY STOCK**, which has been carefully prepared for removal, and specially selected for this Sale, by order of Messrs. John Waterer & Sons, Limited.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, within ten minutes' walk of the Bagshot Station, on **TUESDAY NEXT**, November 21, and **TWO FOLLOWING DAYS**, at 12 o'clock precisely each day, without reserve, several acres of **NURSERY STOCK**, grown to the greatest perfection, and exceedingly well rooted, comprising a variety of Conifers, splendid specimens, particularly adapted for effective planting; very fine Specimen Gold and Silver Variegated Hollies, 4 to 6 feet; 1000 Green Hollies, 3 to 5 feet; Aucubas, Laurels, very fine English Yews, 2½ to 3 feet, and 5 to 7 feet; Irish Yews, 3 to 4 feet; 2000 named Rhododendrons, 2 to 2½ feet, bushy plants of the best and newest kinds; Ponticum Rhododendrons in quantity, finely-rooted and bushy, and will move well; 1000 Spruce Firs, 2½ to 4 feet; and a quantity of larger specimens, 4 to 8 feet, specially adapted for Christmas Trees; 2000 Standard Ornamental Trees, 8 to 12 feet, including Purple Beech, 10 to 12 feet; 500 Limes, 10 to 12 feet; 500 Horse Chestnuts, 6 to 8 feet; 500 Scarlet Oaks, 6 to 8 feet; 1000 Black Italian Poplars, 8 to 12 feet. Thousands of Flowering Shrubs, large quantities of small Conifers for potting and boxing, and other Stock.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Bagshot Station, being situate on the property, facilities are presented for the conveyance of purchases, and Messrs. John Waterer & Sons, Limited, will undertake to lift and despatch any goods bought at the Sale, simply charging for time and labour occupied. Purchasers can remove their lots at any time up to December 31, 1893.

Friday, December 1.—Special Sale.

CYPRIPEDIUM CHARLESWORTHII, Rolfe, n. spec.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, to offer the above novelty by **AUCTION**, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on **FRIDAY**, December 1, at half-past 12 o'clock, together with several new **ORCHIDS**, from a quite new unsearched locality. Special attention is called to the fact that the plants offered are in exceptionally good condition.

From the information we have now received from our collector, there appears to be a great variety in size and colour of flowers, which is borne out by the distinct appearance of the plant.

See large advertisement in next issue.

Brockley, S.E.—Absolutely without reserve.
IMPORTANT CLEARANCE SALE, the land being required for extension of Lewisham Cemetery.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION** on the premises, Maller's Nursery, Ivy Lane, Brockley, S.E., on **WEDNESDAY**, November 29, at 12 o'clock, the well-grown and thriving **NURSE-Y STOCK**, including large quantities of Cupressus, Thuja, Laurels, Hollies, and other useful Conifers and Evergreens; Standard and Climbing Roses, flowering and Deciduous Shrubs in variety, hundreds of Limes, Poplars, Mountain Ash, Elms, Laburnums, Planes, and other standard ornamental Trees; Standard, pyramidal, and dwarf-trained Apples, Pears, Plums, and Cherries, Red Currants, &c.

May be viewed one week prior to the Sale. Catalogues had on the premises, of Messrs. H. MALLER AND SONS, Burnt Ash Nurseries, Lee, S.E., and 61, High Street, Lewisham, and of the Auctioneers, 67 & 68, Cheapside, E.C.

Sunbury, Middlesex.—In Bankruptcy. Re J. Gough. By order of R. J. Ward, Esq., trustee.

CLEARANCE SALE absolutely without reserve.

MESSRS. PROTHEROE AND MORRIS will **SELL BY AUCTION**, on the Premises, Osborn Nursery, Sunbury (1 mile from Sunbury Station), on **FRIDAY NEXT**, November 24, at 12 o'clock precisely, the whole of the **NURSERY STOCK**, comprising Forest Trees, Shrubs and Conifers, in variety; 1000 Dwarf Roses, 200 Standard and Bush Fruit Trees, Capital HORSE, HARNESS, Two Florist's MARKET VANS, Three CARTS, FIELD ROLLER, PLOUGH, CHAFF-CUTTING MACHINE, and SUNDRIES.

Catalogues had on the Premises, of Messrs. WARD AND WILLING, Chartered Accountants, Bloomsbury Mansions, Hart Street, W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday Next.

100 **AZALEAS** and **CAMELLIAS** in Bud, also **FERNS** and **PALMS** from Belgium, 50 lots of **GREENHOUSE FERNS**, **ROSES** in pots, and other **PLANTS**, 100 lots of very fine English-grown **LILIES**, **BARR'S DAFFODILS**, and other **HARDY BULBS**.

MESSRS. PROTHEROE AND MORRIS will **SELL** the above by **AUCTION**, at their Rooms, 67 and 68, Cheapside, London, E.C., on **MONDAY NEXT**, November 20, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Thursday Next.

18,000 **LILIUM LONGIFLORUM** from Japan, in 125 cases, to be sold one case in a lot as received.

180 Bulbs of the new **GOLDEN YELLOW CALLA**, just received in splendid condition.

40,000 **BERLIN CROWNS LILY OF THE VALLEY**.

200 **SEEDLING CARNATIONS**, choice strain; 360 **Malmesbury**, **Raby Castle**, and other **CARNATIONS**; 3600 **IRIS GERMANICA**, 2000 **PANCRATIUM MARITIMA**.

2500 **GLADIOLUS GANDAVENSIS** and 2500 **G. LEMOINEI**, hardy hybrids direct from the grower, and guaranteed by him to contain a great diversity of colour.

HARDY PLANTS and **BULBS** in variety, **DWARF ROSES**, &c. **MESSRS. PROTHEROE AND MORRIS** will **SELL** the above by **AUCTION**, at their Rooms 67 and 68, Cheapside, London, E.C., on **THURSDAY NEXT**, November 23, at 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

SPLENDID BULBS FROM HOLLAND.

Sales every **MONDAY**, **WEDNESDAY**, **THURSDAY**, and frequently on **SATURDAY**.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will **SELL BY AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice **HYACINTHS**, **TULIPS**, **CROCUS**, **NARCISSUS**, and other **BULBS**, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Wednesday Next.

400 Choice named Standard and Dwarf **ROSES**, a Collection of **BORDER PLANTS**, Choice **DAFFODILS**, Specimen **PALMS**, and **AZALEAS** from Ghent; 40,000 **LILY OF THE VALLEY CROWNS** and **CLUMPS**, **SPIRÆA**, **GLADIOLI**, **LILIUms**, **TREES** and **SHRUBS**, **BEGONIAS**, **GLOXINIAS**, &c.

MR. J. C. STEVENS will include the above in his **SALE** by **AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY NEXT**, November 22.

On view morning of Sale, and Catalogues had.

Wednesday Next.

An Importation of **LILIUMS**, just received in fine condition from Japan, comprising 3000 **LILIUM AURATUM**, **L. SPECIOSUM ALBUM**, and **L. S. RUBRUM**; **L. TIGRINUM**, **L. LONGIFLORUM**, **L. ELEGANS**, and Sacred **LILIES**.

MR. J. C. STEVENS will include the above in his **SALE** by **AUCTION**, at his Great Rooms, 38, King Street, Covent Garden, W.C., on **WEDNESDAY NEXT**, November 22.

On view morning of Sale, and Catalogues had.

November 23.

GREAT SALE OF IMPORTED AND ESTABLISHED ORCHIDS AND OTHER PLANTS, By Order of Messrs. F. Sander & Co., St. Albans.

MESSRS. ALEXANDER, DANIEL, SELFE, AND CO. will **SELL BY AUCTION**, at the BANK AUCTION MART, CORN STREET, BRISTOL, on **THURSDAY**, November 23, punctually at half-past 11 o'clock, a magnificent Collection of New, Rare, and Popular **ORCHIDS** and **OTHER PLANTS**.

Descriptive Catalogues may be obtained of the Auctioneers, Bank Chambers, Corn Street, Bristol; and 34, Old Jewry, London, E.C.

On View Wednesday afternoon and Thursday morning.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold **SALES** at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—
EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.
EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other Bulbs.

EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THURSDAY, at 11.30 A.M.—Azaleas, Camellias, Palms, Dracenas, and other Plants from Belgium; Roses, General Nursery Stock, Carnations, Dutch and French Bulbs.

EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.
EVERY THIRD THURSDAY, at 12 o'clock.—Established and Imported Orchids.

All Catalogues post free.

Messrs. JAMES AND BAXTER conduct Sales and Valuations of Nursery Stock, Live and Dead Farming Stock, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

CLEARANCE SALE of the **GREENHOUSE PLANTS**, also two Cows, a Dingley, and a Skiff.

By Order of Sir Henry W. Peek, Bart., who has removed to Devonshire.

MESSRS. W. M. OGDEN AND SONS will **SELL BY AUCTION**, upon the Premises, Wimbledon House, Wimbledon, on **TUESDAY NEXT**, November 21, at 1 o'clock precisely, the surplus portion of the valuable Collection of **ORCHIDS** and **STOVE** and **GREENHOUSE PLANTS**, consisting of large quantities of Calanthes, Poinsettias, Palms in variety, Bouvardias, Paeoniatums, Gloxinias, Pelargoniums, &c. Also large masses of *Cologwe cristata*, *Callas*, *Adiantums*, and other useful plants; two Cows, a Dingley, and a Skiff, both in good condition.

The whole will be offered, without reserve; may be viewed on November 20, and Catalogues obtained at the offices of the Auctioneers, High Street, Wimbledon.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, The Vineyard and Nurseries Garston. In Liquidation.

The Liquidator wishes to obtain **TENDERS** for the **ENTIRE BUSINESS**, **STOCK**, and **UTENSILS** IN **TRADE**, as a Going Concern, as from the 30th of November inst.

Tenders must include the **Entire Stock**, **Utensils**, and the **Goodwill** of the Business. The Stock consists of Orchids, Grape Vines, Tea Roses in pots, Ferns, and General Stock of Stove and Greenhouse Plants.

The Nursery and Greenhouses can be had on an Annual Tenancy, and subject to a Moderate Rental.

The Liquidator's representative will show the Premises and Stock any day from this date.

Tenders must be marked "Tender for Nurseries," and be sent in not later than November 23 to GEO. NICHOLSON, Esq., Messrs. Harwood, Baumer & Son, 24, North John St., Liverpool.

To **NURSEYMEN**, **FLORISTS**, and **OTHERS**, in the matter of a Deed of Assignment.

Re **REID AND BORNEMANN**.

FOR SALE, BY TENDER, in Two Lots, on **FRIDAY**, November 24, 1893.

LOT 1.—The long **LEASEHOLD PREMISES** known as The Nurseries, Trewharry Road, Sydenham, S.E., occupied by the well-known firm of Reid & Bornemann, held at the annual rent of £52, and comprising about 4 acres of Ground, with five Glasshouses, Show-house, Office, Stable and Sheds; also Tools, &c.

LOT 2.—The valuable **STOCK** of **CHOICE PLANTS**, including newest introductions of *Amaryllis*, Zonal and Show *Pelargoniums*, *Chrysanthemums*, *Cannas*, *Cactus* and Single *Dahlias*, *Tuberous Begonias*, *Carnations* and *Pinks*, and other **GENERAL NURSERY STOCK**.

Printed Particulars and Conditions of Sale may be obtained of Messrs. **PIGGOTT AND SON**, Chartered Accountants, 3, 4, and 5, Queen Street, Cheapside, E.C.; or of Messrs. **LANGHAMS**, Solicitors, 10, Bartlett's Buildings, Holborn E.C.

TO SEEDSMEN.—To be **DISPOSED OF**, in consequence of the death of the proprietor, an old-established **FARM** and **GARDEN SEED BUSINESS**, with a wide connection in a good Market Town in the Midlands, and on Two Railways. This is a rare chance for a desirable purchaser that does not often occur.—Apply to **SEEDSMAN**, Messrs. Hurst & Son, 152, Houndsditch, London, E.

NURSERY TO LET, seven Glass-houses and Cottage.—Rent £40 a year. Small Stock.—Apply to—**T. W. B.**, 5, Beverley Cottages, Church Passage, Lee, Kent.

East Grinstead (near Station).

IMPORTANT TO CUT FLOWER, PLANT, and FRUIT GROWERS.

TO BE LET, on Lease, the **MOAT NURSERY**, with thirty-five Greenhouses, and Cottage; area 5 acres. Very small Stock. Moderate rent will be taken from approved tenant. Full particulars of Messrs. **PROTHEROE AND MORRIS**, 67 and 68, Cheapside, London, E.C.

PROTHEROE AND MORRIS, **HORTICULTURAL MARKET GARDEN** and **ESTATE AUCTIONEERS** and **VALUERS**, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

CARNATIONS.—Gloire de Nancy. Strong layers, 18s. per 100. Cash with order. **A. BARTLEMAN**, New Malden, Surrey.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for LIST, free. **P. MCARTHUR**, The London Nursery, 4, Maida Vale, London, W.

FOR SALE, Standard **DAMSON TREES**, well grown, well rooted, 6 feet stems, fine trees. 700 at £3 per 100. Inspection invited. Apply to **C. WALKER**, Rudgwick, Sussex.

IMPORTANT CLEARANCE SALE.

CLIFFE, NEAR ROCHESTER.

Important to Fruit Growers, Market Gardeners, and Others.

A CATALOGUE OF 50,000 FRUIT TREES, CONSISTING OF 2,000 BEAUTY of BATH (THE COMING APPLE).

This Apple has gained honours at every Exhibition where shown, and was included in the first-class collection of Dessert Apples, at the recent Fruit Show, open to all England, Earl's Court, August 28, 1892, and first in class with thirty-five dishes staged against it. Mr. Horne holds the largest stock in England of this grand variety, and, when better known, it will be more largely grown than any other Apple in commerce.

1000 strong half-standard Worcester Pearmain, 1000 strong half-standard Ecklinville, 500 standard Farleigh Prolific Damson, 500 standard, half-standard, and maiden Bismarck.

5000 Strong Standard and Half-standard Apples, Pears, Plums, and Cherries.

Including the following sorts:—Cox's Orange, Stoue's Loddington, Cox's Pomona, Peasgood's Nonsuch, Duchess Favourite, Stermer Pippin, Lord Derby, Warner's King, Counsellor, Gloria Mundi, Lord Suffield, Nelson's Glory, Beauty of Wilts, Glory of England, Yellow Ingestrie, Wellington, Stirling Castle, Quarrenden, Lady Sudeley, Royal Jubilee, The Queen, High Causton, Gladstone, Morello Cherries, William's Beurre Clairgeau, Pitmaston Duchess, Chalks and Durondeau; standard and half-standard Victoria, Czar, Rivers' Early Prolific, and King of the Damsons.

30,000 1- and 2-year old GOOSEBERRIES, including Whinham Industry, Crown Bob, and Lads; 25,000 Baldwin's one and two-year BLACK CURRANTS; 15,000 Sir John Falstaff PEARBERRY CANES, 20,000 Laxton Noble STRAWBERRY PLANTS, 20,000 Sir John Ruskin, and 20,000 Sir Joseph Paxton; 25,000 two and four-year Connover's Colossal ASPARAGUS; 200,000 Myatt's Offenham, Early Rainham, Thousand-Head KALE, and Drumhead CABBAGE; 30,000 bedded HOP SETS, Bramlings, Fuggles, Petham, and Canterbury Goldings.

MESSRS. PROTHEROE AND MORRIS have received Instructions from Mr. W. Horne to SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester, adjoining Cliffe Station, South Eastern Railway, on MONDAY, November 20, 1893, at half-past 11 o'clock in the forenoon.

Mr. Horne will lift and put on Rail all Lots (after the Sale) free of expense.

NOTICE.—The Auctioneers desire to call attention to this Important Clearance Sale. It is seldom an opportunity offers itself for securing new and rare kinds in such large quantities. The Standards are well-grown and strong. Fruit Growers and others who intend planting are invited to inspect the stock and attend the Sale.

LUNCHEON at 11. SALE at 11.30. CATALOGUES may be had of the Auctioneers, Land and Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Wood Green Local Board.

NURSERYMEN are INVITED to TENDER for the SUPPLY of TREES and SHRUBS for the WOOD GREEN LOCAL BOARD, to be delivered at Wood Green in such quantities as may be required. First List of Plants can be seen at the Office of the Local Board. Three samples of six named plants to remain as standards, to be delivered with the Tender, and such plants to be paid for at a fair rate.

Mr. Milner, of 7, Victoria Street, Westminster, will decide as to the relative merits of the plants, and advise the Local Board. Tenders to be delivered to me, not later than 5 p.m. on the 24th inst., endorsed "Tenders for Trees and Shrubs." The Local Board do not bind themselves to accept the lowest or any tender.

By order, J. W. BRITTON, Clerk.
Towa Hall, Wood Green, N.—November 9, 1893.

Seakale.

FINEST QUALITY FOR FORCING.

Prices and samples on application.

H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

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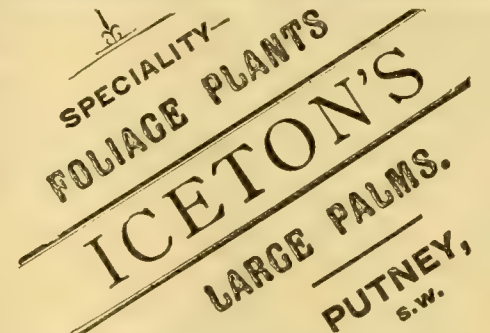
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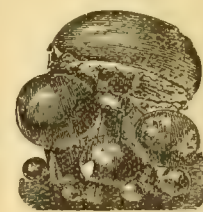
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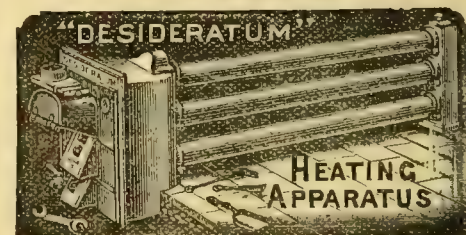
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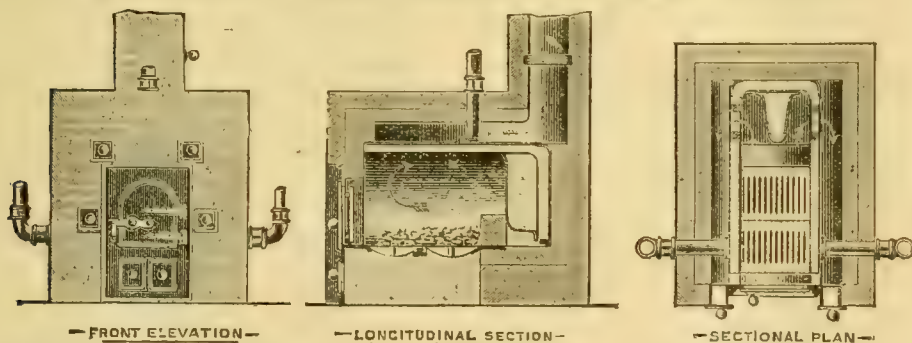
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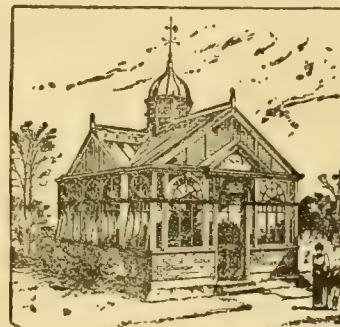
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 18, 1893.

HYGIENE.*

THIS is a collection of essays of varying scope and diverse character, but all tending to one end, the physical benefit of mankind. Most of them have seen the light before, as published lectures or magazine articles, but they are amply worth repeating in their present form. The subjects dealt with include the concentration of population in cities, the defects of some modern sanitary methods, the study of earth, air, and water in relation to sanitation, the practical experiences of the author in town, in country, the story of Bremon tier, and lastly, the disposal of the dead. An appendix and an index materially add to the value of the book. Such is a general statement of the contents. It will be seen that the book has an interest for all of us. We may not agree in all points with the author, but we are in such full sympathy with his objects, that we cordially commend the work to the notice of the general reader, and especially to those in any way practically concerned in the subjects of which the book treats. It is, indeed, a book which every householder should study, and, so far as circumstances permit, act upon. We are not sure that the reasons cited by the author for the choice of the title "rural" are adequate. It may be true that in country places practical sanitary measures can be more scientifically and effectually carried out than they can in large towns where "circumstances" are so powerful in modifying or actually preventing their full application; but the fundamental principles must be the same in town or in country.

Much has to be sacrificed to expediency in towns, but has it not in the country also? Are parish vestries and rural sanitary authorities any less actuated by short-sightedness and self-interest (so called) than the corresponding bodies in urban districts? Is the desire to save the rate-payers any less keen in the country than in town? Are prejudice, ignorance, inability to understand or even to make the attempt to understand first principles any less potent in proportion to numbers in country than in town districts? We fear not. Is there no venality, no jerry-building in the country? or are those unlovely phenomena to be witnessed in crowded cities only? We fear there is a great deal of human nature, whether in town or country. Nevertheless, it is quite true that in many cases it is easier to put sanitary measures in practice in the country than it is in town, and this is probably all the author really means.

The evils arising from over-concentration of the population in large towns is, of course, insisted on; but if the suburban authorities could or would insist upon the due attention to sanitary

* *Essays on Rural Hygiene*, by George Vivian Poore, M.D., F.R.C.P., Longmans (1893).

precautions, would secure broad streets and a multitude of open spaces, besides instituting a rigorous examination of houses in course of construction, and periodical examination afterwards, then the evil effects of overcrowding would be largely obviated. The superior advantages and conveniences of the town districts, as compared with those in the country, would under the circumstances go far to counterbalance the evils of town life.

The pollution of air and water are evils whose magnitude is generally admitted. The author does well by showing that they are often evidences of waste and thriftlessness. So long as a thing is only a nuisance—ah, even a deadly nuisance—it is difficult to get authorities to move; but bring home to individuals that the resources of the breeches-pocket are squandered, and there is a better chance of mending matters. Even then, owing to divided authority, complex legislation, and the want of co-operation, it is vastly difficult to get the proper remedies applied. In the neighbourhood where these lines are penned there exist nuisances which are in some sense typical. A small stream meanders through the meadows, offering formerly delicious effects of scenery, a treasure-place for the naturalist. Kingfishers attested the presence of fish, the banks were lined with wild flowers, lovely Lilies reposed on the surface of the stream, and all this within a very few miles from London.

Gradual deterioration has been going on, increasing proportionately to the increase of population and the establishment of factories, till at length the stream is no better than a sewer, and in places, at times, an excessively foul one. In the same locality foul rubbish heaps and town refuse are "dumped" upon the borders of the canal, and these are sometimes burnt, so that the air is replete with stench sufficient to wake the sleepers at a distance of a mile or two, or more. Happily, of late years, no epidemic has been rife in the district, and it is difficult to prove that any individual case of illness is really traceable to one or other of the nuisances we have referred to. Moreover, there is the question of divided authority—the stink originates in one parish, its effects are felt in the next; there is an active Board in the one, a stagnant one, it may be, in the next district. The fear of cholera may induce the authorities to consider that "something ought to be done," but it takes a very long time even to arrive at that decision, and a very long time to carry it into effect.

Of course many of the topics touched on in Dr. Poore's book have special interest for our readers. The waste of good manure consequent on our present arrangements, the prevention of those changes in the soil which regulate the production of plant-food, the pollution of the air, and its cleansing by means of trees and foliage are all matters frequently discussed in these columns. "The bestowal of refuse is a problem which confronts every individual daily, and almost hourly. We may practically destroy it, so that our native soil gets no advantage, or we may start it upon a round of creative productiveness which will provide food, warmth, houses, and raiment, and in so doing find perpetual occupation for the increasing numbers of the unemployed." This passage is the key-note of Dr. Poore's book. He makes his points clear, thrusts them well home, and does his best to rouse the conscience of the individual, and the moral sense of the nation, for this is not only a physical and material question, it is a moral one—we do not think we should err if we said it was a religious one too.

Dr. Poore preaches what he practices, and by no means the least interesting portions of his book are those in which he narrates how he carried his principles into practice in a country town. We commend to our country readers the account of the manner in which Dr. Poore dealt with his cottage property. So far as the disposal of refuse of all

kinds is concerned, Dr. Poore's plan is to bury it immediately. The cottages are "scavenged" daily, the excremental matters and the ashes (as distinct from the cinders) buried superficially. The result is, that the garden produces all the ordinary fruit and vegetables in a state of perfection, which is clearly above average.

Other practical experiences in a London suburb are cited. Here, in addition to the use of earth-closets, the slops of all descriptions are daily utilised in the garden—the soil being stiff loam overlying brick-earth. How this is done effectually and without nuisance may be read in the book itself. The experience so gained only induces the author to repeat that "Refuse, if properly used, is a source of food and wages; but if improperly used, it merely leads to waste and starvation."

With the author's remarks on burial as opposed to cremation we are not so disposed to agree, believing that for large towns cremation is the method which secures the least amount of risk for the survivors, and, looked at without prejudice, it should be the least repulsive to their feelings, and ensure the greatest amount of reverence for the dead. Here, again, there is a marked difference in the necessities of the case, according to local circumstances. Ordinary burials—still more, burial in vaults or in coffins which do not speedily and readily disintegrate—are of course, from a scientific point of view, utterly objectionable; they can scarcely fail to become equally so from a sentimental point of view, when people can allow themselves to think as well as to feel.

Not to conclude with so gruesome a subject, we may mention that one of the chapters in Dr. Poore's book is devoted to the story of Bremon-tier, and how he made the wastes of Gascony to flourish by the planting them with Pinaster. Instead of uselessly attempting to fight the sand, he utilised it in a manner now familiar to most of our readers. We must also not omit to take note of the appendix on market gardening—the only branch of agriculture which is in a prosperous condition. Ordinary readers are little aware of the enormous extent and value of this system of cultivation. We ourselves, though previously familiar with the matter generally, were surprised at the magnitude of the results we had the opportunity of publishing in the spring, in connection with the representations then made to the Board of Trade in connection with the revision of the railway rates. Those details, and the reports of visits paid at our instigation to several of the principal establishments near London, should be carefully considered alike by sanitary reformers and statesmen.

NEW OR NOTEWORTHY PLANTS.

COLEUS PENZIGII, Hort. Dammann.

THERE are a great many species of Coleus in Tropical Africa, several of which have not yet been anywhere described. In many of them the cymes are compound, but the present plant belongs to the set in which the cymes are congested into umbels, and the leaves are not at all fleshy. It has just flowered at Kew, where it was received not long since from Messrs. Dammann. I presume it is one of the plants discovered by Prof. Penzig, of Genoa, during his recent expedition to the mountains of Abyssinia, a large collection of which I saw growing at Mr. Thos. Hanbury's garden at La Mortola two years ago. Coleus only differs from Plectranthus by its united stamens.

A herbaceous perennial, with stout stems clothed with fine spreading hairs. Leaves ovate, 2 to 3 inches long, crenate, green, pubescent, especially beneath, narrowed suddenly to a winged petiole. Whorls simple, eight-flowered, forming a lax raceme 6 to 8 inches long; bracts small, deciduous;

Coleus Penzigii, Hort. Dammann.—Herbaceous, perennis, caulis subtiliter pilosis; foliis ovatis crenatis breviter pubescentibus in petiolum ad basin alatum cune angustatis; verticillis simplicibus 8-floris in racemum laxum dispositis; bracteis minutis caducis; calycis tubo campanulato piloso dentibus deltoides breviori; corollæ tubo diffracto; labio inferiori magno cymbiformi pulchre violaceo.

pedicels $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Calyx $\frac{1}{2}$ inch long; tube campanulate, very hairy, shorter than the unequal deltoid teeth. Corolla tube bent suddenly at the middle; lower lip deeply cymbiform, bright violet, $\frac{1}{4}$ inch long; upper much smaller, reflexed. Stamens concealed in the lower lip of the corolla. J. G. Baker.

THE CHESTNUT OAK.

QUERCUS PRINUS is by no means a new-comer in our midst, but for all that, it is not nearly so often seen as its merits warrant. A specimen sent to us from the Duke of Northumberland's pleasure-grounds at Albury, near Guildford, has induced us to have an illustration made (fig. 101). It is a handsome deciduous or nearly evergreen tree of large size. The general form of the leaf is well shown in the cut; in texture it is firm, rather thick, and of a rich green colour. The shortly-stalked acorns are rather large and pointed, of a bright shining brown, set in a tubercled downy cup. The species is very variable, hence many names have been given to it, and much difficulty is experienced in sharply defining the varieties. It is sometimes called *Q. Mirbeckii*, though we do not find that name in any authentic list at our disposal. Perhaps *Q. Michauxii* may have been intended, a species sometimes considered as a form only of *Prinus*. *Q. Prinus* has a wide distribution in the Atlantic states, extending from Massachusetts to Ontario, and south to Alabama, and west to Kentucky and Tennessee. According to Sargent, the bark of this Oak is preferred to that of other white Oaks for tanning purposes.

Why the name *Prinus* came to be attached to an American tree is not obvious. The Greek *prinos* is generally considered to have been the Evergreen Oak, *Quercus Ilex*.

LILIES AT KEW.

THE systematic cultivation of Lilies on a large scale at Kew is a somewhat recent development of the outdoor gardening in that establishment. Formerly many attempts were made to grow them in specially-made beds in that portion of the gardens devoted to the cultivation of monocotyledonous plants, but these all failed, and so—with the exception of a few species which thrive even under the most depressing conditions—Lilies played little or no part in ornamental gardening at Kew until within the last six or eight years. The success which has attended the new departure, and the wonderfully fine effects produced by masses of the showier species and varieties, are so great that an outline of the methods pursued may be of general interest.

Most of the Lilies at Kew grow well in peat; some few refuse to grow in peat, but do well in loam; some do equally well in loam and peat. But, generally speaking, the key-note of success was struck when the bulbs were planted among low-growing shrubs. Behind the Palm-house is the so-called "American Garden," containing masses of Ericaceous and other plants in large beds; among these are Rhododendrons—low-growing species—Azaleas, Ledums, Callunas, Ericas, Pieris, Leucothoë, Daphne, &c. These shrubs serve a double purpose: they keep the ground cool about the Lily roots and shelter the young growths from the late spring frosts. Every few years, as the shrubs grow too dense, it is necessary to replant them and space them out properly, so as to give the Lilies a fair share of light and air. Replanting, by the way, is better than pruning, as each time replanting takes place a number of fine shrubs are obtained, which are available for new plantations. At the same time, the Lilies—at any rate, the great majority of them—pay for being lifted and replanted, the smaller bulbs being retained and placed in nursery beds to grow on. *Lilium auratum* is one which prefers being let alone, and, given a well-drained peat bed, should not, if possible, be disturbed. *L. auratum*, by the way, being a taller grower than most of its congeners, we grow in beds of taller Rhododendrons than those which find a place in the "American

Garden," and these can from time to time be pruned in so as to allow the Lilies light and breathing space. In the beds of *Rhododendron*—principally hybrids of *R. ponticum*—along the Broad Walk we have had hundreds of stems of *L. auratum* 6 feet high (many have attained 8 feet or more), with fifteen to twenty, or even more, perfect flowers. This year, however, owing to the excessive drought, few stems have attained the dimensions or have produced the number of flowers just mentioned. *L. longiflorum* does best with us in peat, and must be replanted every second or third year, or there would

lived. An excellent way to keep up a stock of young vigorous bulbs is to make a sowing every year. If treated properly, seedlings arrive at the flowering stage very quickly. The seeds should be sown as soon as ripe—if possible, in prepared beds (not in pots or pans) under glass. A cold frame will do well, but results are more speedily attained if seeds are sown in a bed in a slightly-heated greenhouse. For instance, seeds of *Lilium longiflorum* var. *formosana*, a beautiful variety from Formosa, developed rapidly, some seedlings flowering in little more than a year from time of sowing. The bulbs in that time

bulbil, all that is necessary with the Tiger Lily being to sow the bulbils when ripe in the open ground and leave them to their fate. A slight covering of Fern leaves, &c., during winter is, however, beneficial. With *L. sulphureum*—owing to its being much more uncommon—we act differently, planting the bulbils in pans or beds under glass. The first year these will get as large as small Hazel nuts—after this they are better planted outside; some planted out this spring in an Azalea bed, fully 6 inches deep, have grown freely this past summer, producing numbers of bulbils, which, in their turn,



FIG. 101.—*QUERCUS PRINUS*—THE CHESTNUT OAK: SUB EVERGREEN. (SEE P. 616)

be a falling-off in the size and number of the flowers. The fact is, the bulbs increase so fast that they crowd each other out and impoverish the ground; the small ones are planted at once in other beds or are grown on in nursery beds for stock. *L. speciosum* and its numerous varieties increase so rapidly that they quite exhaust the ground; replanting is necessary every second, or third year at the outside. Fresh peat should be added, and only some of the large bulbs replaced; the others may be at once utilised for forming new plantations.

The bulbs of some Lilies, after flowering well for several seasons, disappear apparently without cause, and the better and the more freely they have grown and flowered the more apt are they to disappoint their possessors. It seems probable that the bulbs of these kinds are in reality always rather short-

had attained about the size of small Hazel-nuts; last year they were planted in the open ground, and during the past summer have flowered profusely.

The former method of propagation—when seeds are not to be had—is one which allows the stock of a given kind to be rapidly increased. A good-sized bulb will furnish a large number of scales, each of which may develop into a good bulb in two or three years. The scales should be planted in silver sand, over prepared soil, and kept in a frame or greenhouse until young plants have developed, when they are better planted out in the open ground. The third year from scales we have had *L. Hansoni* 5 feet high, bearing from nine to twelve flowers on a stem. Bulbils, as of the Tiger Lily (*L. tigrinum*) and *L. sulphureum*, furnish an easy way of propagation; the former will flower the second year from the

will be carefully treated as above described. They will doubtless flower well next year.

The Martagon Lily (*L. Martagon*) and its varieties *album* and *dalmaticum* will not grow in peat at Kew, but do well in loam. The Tiger Lily (*L. tigrinum*) and its varieties, although they will thrive in peat, do well in almost any garden soil. The Pyrenean, or Yellow Martagon, as it is sometimes called, requires loam; if chalky in character so much the better. *L. testaceum* and *L. candidum* like good loamy soil. *L. pardalinum* grows very freely in a damp loam; the third year we have had it 7 feet high, with thirty flowers on a stem. When this species is transplanted, unless clumps are moved with masses of soil attached to their roots, it is never so fine the succeeding year; one must wait until it is thoroughly established before the best

results are obtained. *L. Hansonii* will grow well even in a hot dry spot. The scarlet Martagon, or scarlet Turk's-cap, *L. chalcidonicum*, and its varieties, like a moist, but well-drained, good strong loam; this is not an easy species to manage, but where it does succeed it is one of the most beautiful of hardy Lilies. *L. croceum* (the Orange Lily) does better in loam on a damp subsoil than in a bed, no matter how well prepared, on a dry gravelly or sandy subsoil; it is a beautiful plant, and by no means common in gardens. *L. davuricum* and the numerous forms of the garden *L. umbellatum* thrive admirably in almost any garden soil; among dwarf-growing shrubs, as recommended at the commencement of these notes, the bulbs increase in size and number to such an extent that, although planted originally 6 or 8 inches below the surface, in about three years they will almost lift themselves out of the ground. The Chinese *L. Henryi* grows in both peat and loam; in peat, two years after planting, the stems measured 5 feet in height, and bore as many as nineteen flowers; in loam, however, the second year after planting, the stems had attained a height of 6 or 7 feet, and some bore upwards of thirty flowers. *L. candidum*, as far as Kew is concerned, is one of the most refractory of Lilies; imported bulbs flower well the first season, but afterward, as a rule, fungoid disease attacks stem and leaves, and both dry up and wither before the flowers open. *L. longiflorum* will grow well either in loam or peat, and *L. Szovitzianum* likes loam with a clay bottom.

First and foremost is the Golden-rayed Lily of Japan (*L. auratum*), which has already been mentioned. *L. superbum*, a noble species, with which doubtless our American readers are familiar in a wild state, does best in peat with us; the second and third year after planting it has reached 7 feet in height and upward, bearing from twenty to thirty flowers on a stem. Some seasons many of the bulbs will remain perfectly dormant, but the following season they will start again. *L. Grayi*, from Roan Mountain, does not, as far as my personal observation and inquiries on the spot go to prove, ever attain anything like the proportions in a wild state that it does at Kew. We have had our bulbs since 1891; they were planted early in that year in a bed of *Azalea amœna*, and most of the stems bore but one flower; the following year the flowers numbered from two to five on a stem, the present season the stems have grown 5 feet high and borne from five to twelve flowers each. The little Japanese *L. concolor* (bright scarlet) and its variety, *Cordion* (bright yellow), the second year after planting among dwarf *Azaleas* have grown 2 feet high, and borne from four to six flowers on a stem. *L. speciosum* and its varieties like peat, but soon deteriorate unless replanted and the smaller bulbs removed; with this species not more than two years should elapse without replanting. If arranged in clumps among low shrubs it is easy to move the clumps 1 foot or 2 feet, and so obtain fresh soil for the hungry roots to work in. The second year after planting we have measured *L. speciosum*, and found the stems to be 5 feet high, bearing from twelve to twenty flowers. *L. canadense*, *L. elegans* and its numerous forms, *L. Browni*, *L. japonicum*, *L. pomponium* and *L. sulphureum* are other Lilies which, in Kew at least, do best in peat. *George Nicholson, Kew, in "Garden and Forest."*

HONEYDEN, FOOTS CRAY.

Few gardens can boast of such a great variety of plants cultivated in them as are here to be found, or which benefit by such skilful supervision as Mr. R. A. Todd, the proprietor, gives to the cultivation of his favourite flowers. Hardy plants, bulbs, and especially Irids and Amaryllids, Lilies, Orchids, and Ferns form the larger part of the plants grown; and in every part of the garden, outdoors and in, there is a great number of odd plants, and especially of beautiful species, which used in former times to be more cultivated than at the present time. In a natural hollow, grass-clad, beneath the shade of trees and shrubs, little gardens are arranged, in which

the various Lilies, and especially *Lilium superbum*, *L. canadense*, and *L. pardalinum*, grow and bloom remarkably well. In another bay are *Ericas*, *Menziesias*, *Pernettyas*, and similar plants; further on are clumps of the various species of hardy *Cypripedium*, which thrive in a most satisfactory manner in the cool moist places prepared for them. In another place a collection of the *Oncocyclus Iris* is found, which, now that they are getting established, promise to bloom well.

Forming a garden in itself is a sheltered nook, in which are beds furnished with rockery, among which dwarf-growing alpine plants are planted, which are always giving a more or less good show of flowers; indeed, with these plants, if only a suitable situation can be found in which they will grow well, the production of numerous flowers is certain. The length of time which some of the neat little alpine plants last in bloom is truly marvellous. The border around is planted with the stronger and taller-growing species, the collections of alpine plants being kept together as much as possible. On one side is a collection of the species of *Eremurus*, which are such stately objects when in bloom; and in another part a collection of *Helleborus*, and so on through most of the favourite genera. The edging plants in many cases consists of species of *Crocus*, *Chionodoxa*, *Scilla*, and other dwarf bulbous plants. With bulbs Mr. Todd is very fond of experimenting, and he has succeeded in growing some in the open air which are generally regarded as inmates of the greenhouse or stove. Planted deep in the soil close to the wall of one of the plant-houses are several species of *Crinum* which have proved quite hardy, in addition to *C. longifolium* and *C. × Powellii*, which are generally admitted to be hardy. Among the former were noted *C. Moorei*, *C. longiflorum*, a Jamaica species; *C. campanulatum*, and a probably new *Crinum* from the Zambesi district. It is near to *C. lineare*, and bloomed well last summer, and now seems to be in the right condition to go to rest. With these and other reputedly tender bulbs, deep planting is found to be the chief condition for ensuring success.

The Orchids form an interesting collection, fairly divided between the showy flowering and the curious or botanical genera. The *Cattleyas* and *Lælias* are well grown; the panfuls of *Diasas*, including *D. racemosa* and *D. tripetaloides*, are very vigorous, and, indeed, with but one or two exceptions, everything was doing well. The *Phalenopsis* here, as in many other gardens, are the least satisfactory, but their condition is attributed to their being necessarily shifted about while new glass-houses were being built, and while the painting of the same was in progress. It is only a portion of these plants which is not in good health, viz., the *P. amabilis* and *P. grandiflora*; *P. Schroderiana*, *P. sumatrana*, and others of that class being in good condition, *Schroderiana* and *sumatrana* being in flower.

In the cool-houses, we found *Odontoglossum Hunnewellianum*, a number of *Cypripedium* insigne, *Cologyne fuliginosa*, *Oncidium cheiroporum*, *Lælia præstans*, fine pans of *Pleione Wallichiana*, *P. lagenaria*, *Oncidium varicosum*, *Sophranitis cernua*, the pretty *Masdevallia calura*, and other species in flower; while in the large range of three divisions we found among the genus *Catasetum*, which is a favourite one with Mr. Todd, *C. integerrimum* and *C. purum* in flower, other well-bloomed species being *Rodriguezia secunda*, *Angræcum Scottianum*, *A. Saundersiae*, *Cattleya guttata*, several good *C. Bowringiana*, and many *C. labiata*, *C. Harrisonæ*, *Lælia furfuracea*, with three spikes; *Cologyne Massangana*, *Cymbidium Mastersii*, *Sarcanthus teretifolius*, *Arundina bambusæfolia*, *Dendrobium formosum*, *D. Dearii*, *D. Phalenopsis*, *Coryanthes maculata punctata*, in bud; and fully in bloom one of the most beautiful and largest forms of *Vanda Sanderiana* we have ever seen, and remarkable for the unwonted richness of its colouring.

In the other houses, we found in one a showy and interesting collection of *Nerines*, both species and hybrids, among those in bloom being *N. pulchella*, with five flower-spikes; a large form of, or

hybrid of, *N. undulata*, &c., with seven spikes; *N. curvifolia*, *N. cornusca*, *N. cornusca major*, *N. pudica*, *N. × O'Brienii*, in many varieties; two distinct forms of the new white *N. pancratioides*, one with scapes 2 feet 6 inches in height.

Other bulbs in bloom were the rare *Hæmanthus crassipes*, *Anoanthus luteus*, *Cyrtanthus lutescens*, the delightfully fragrant *Massonia amygdaloides*, *Gladiolus breviflorus*, *Schizostylis coccinea*, and a very fine *Oxalis*, larger than *O. Bowiei*, which Mr. Todd brought from Madeira.

Roella ciliata and other New Holland plants are in bloom, and in the conservatory when *Dendrobium splendidissimum grandiflorum*, *D. nobile nobilissimum* and other deciduous *Dendrobies* have ripened up fine bulbs, there is a show of *Chrysanthemums*, *Epacris*, *Cassia corymbosa*, *Trachelium cœruleum*, a fine *Brugmansia sanguinea*, with red and yellow blossoms; and suspended were some rare greenhouse Ferns such as *Pellea atro-purpurea*, *P. tenuifolia*, *Nothochlæna Marantæ*, and other *Nothochlænas* and *Cheilanthes*.

ORCHID NOTES AND GLEANINGS.

VANDA SANDERIANA.

THIS remarkably showy Orchid is now in flower in the Orchid-house in the Birmingham Botanical Gardens, displaying six fine expanded blooms. The plant is growing in a suspended earthenware basket. *W. D.*

NOTES FROM BELVEDERE, HARROGATE.

A NEW range of glass, erected in the gardens of C. B. Faber, Esq., Belvedere, Harrogate, which I was enabled to inspect recently, consists of eight separate houses, having span-roofs which are in the alignment of north to south, and connected at the northern end by a span-roofed corridor of 164 feet in length and 9 feet in width.

On entering the corridor from one of the ends, a fine lot of *Chrysanthemums* was remarked, and hanging from the roof festoons of *Solanums*, *Jasmines*, *Roses*, and other climbers; the varied flowers of the *Chrysanthemums*, and the foliage of the climbers making pleasing pictures.

One of the houses is a small stove, and whose floor was lower than that of the corridor, the plants in it being chiefly *Crotons* and *Dracænas*. Cool Orchids filled another house, also with a sunken floor, and consisted of *Odontoglossum crispum*, *O. Alexandræ*, *O. Pescatorei*, *O. Halli*, *O. grande*, and other species, besides *Oncidium tigrinum*, *O. macranthum*, and other *Oncids*.

A house is set apart for *Cattleyas* and *Cypripediums*, and it contained healthy specimens, in bloom, of *Cattleyas labiata* and *C. Mossiæ*; *Cypripedium Spicerianum*, *C. Leeanum superbum*, *C. Chantini*, *C. Dauthieri magnificum*, *œnanthum superbum*, *Arthurianum*; and a fine piece of *Vanda cœrulea* carrying six flowers.

The stove proper contained large specimens of *Crotons* and *Dracænas*, viz., *Croton Queen Victoria*, *C. Baron Jas. de Rothschild*, *C. Mortii*, *C. Thompsoni*, *C. Aigburth Gem*, besides a number of smaller plants.

The conservatory which forms the middle of the range contained many specimens, *Kentias*, *Araucaria excelsa*, *Seaforthia elegans*, &c. Two houses are devoted respectively to the forcing of Peaches and Vines. The last house in the range was constructed with special regard to the cultivation of *Nepenthes*, *Anthuriums*, and other plants which require much humidity and warmth. Amongst *Nepenthes* were observed in fine condition *N. Mastersiana* × *N. Dicksoniana* × *N. coccinea*, *N. Hookeriana*, *N. Chelsoni* × (carrying twelve pitchers), *N. Wrigleyiana* ×, and *N. Outramiana* ×. To meet the requirements of the plants an oval tank has been built in the middle of the house, the walls being level with the floor, and the top of this tank rests on pillars

which raise it just above the water-level. Above it large specimens of *Nepenthes* are placed, and across it are thrown strong iron arches furnished with arms on which baskets containing *Nepenthes* are suspended. The centre of each arch stands about 4½ feet from the water-level. The floor is of tiles, and the command of heat is ample. Judging by the healthy appearance of the plants, the fittings of the house exactly meet the requirements of the plants. In a range of cold pits, were noticed excellent *Souvenir de la Malmaison* Carnations that had flowered well this season. It may be mentioned as an unusual accessory to the glass structures that the whole of the houses are furnished with electric light apparatus. The healthy appearance of all the trees, Vines, and plants reflect much credit on Mr. Townsend the gardener, to whom every encouragement is given by his employer, Mr. Faber being a great admirer of plants generally, and especially of the cool-house Orchids, *Nepenthes*, and *Anthuriums*. J. Clayton.

THE FUTURE DEVELOPMENT OF THE VIOLA.

To many the most interesting phase of *Viola* culture is the raising of seedlings. Recently, when lecturing on a kindred subject to the National Amateur Gardeners' Association, I was asked by Mr. Crane, the secretary, to advise the members on what lines to work for the improvement of the *Viola*. It was rather a large subject to deal with off-hand in a satisfactory way, and I have often thought since it is a subject well worth a somewhat extended treatment in your columns. The following groups of *Violas* will require to be treated separately: whites, pale yellows, deep yellows, light blues and lavenders, dark blues or purples, rose and blush coloured, and fancies, the latter say in four sections—striped flowers, white flowers with coloured edgings, yellow flowers with coloured edgings, and those of the Countess of Kintore type. It will be generally admitted, I believe, that the varieties I have selected as being the best in their respective colours are really the best. I admit at once that there is room for difference of opinion in some cases, but those named serve the purpose intended better than any others I know.

SELFS.

Whites.—Countess of Hopetoun, Countess of Wharnccliffe, and Sylvia are three of the best. The habit of the Countess of Hopetoun is perfect, and that of Sylvia is also very fine; but their flowers are rather thin. The flowers of Countess of Wharnccliffe have great substance, are scented, and therefore what should be aimed at is to get these qualities associated with the habit of, say, the Countess of Hopetoun.

Pale Yellows.—Ardwell Gem, Bridesmaid and Lemon Queen are the best, and the latter has a most excellent habit, but what it lacks is refinement in the flower. The habit of Bridesmaid is defective. It has a slight perfume. Something good ought to be got by crossing Lemon Queen with either of the other two.

Deep Yellows.—Bullion, Mary Gilbert, and Lord Elcho, are three good representatives of this class, and I would say unhesitatingly that if the habit of Lord Elcho could be introduced into the other two, without losing their floriferousness, we would have almost perfect yellows. Bullion has a fine perfume; it is a little deficient in substance.

Light Blues and Lavenders.—Favourite and Duchess of Sutherland are as good types as I know of. Lilacina, I believe, is very fine, but I have not grown it. A good light blue, not a lavender, is still wanted in *Violas*; something approaching in colour the old Blue King Panay. The habit of Favourite is good; that of Duchess of Sutherland could be improved.

Dark Blues or Purples.—A. Grant, Mrs. Turner, Holyrood, and True Blue are all good. True Blue has the ideal habit of a bedder, but would be improved with larger and better flowers. The blooms of A. Grant are almost perfect; it is a strong

grower, and in some situations is too tall. Mrs. Turner is very fine, both in colour and habit. I have never noticed any perfume worth speaking of in the dark blue *Violas*.

Rose and blush-coloured.—Sunrise and Dorothy Tennant are dark rose-coloured flowers. The habit of Sunrise is bad, but the flowers are large and fine. Wm. Neil is a pale rosy-lilac, and Blush Queen is of the palest blush colour. Both are perfect flowers, with a first-class habit; and the only forward step to be made in this section will be in procuring new shades of colour if possible, with more substance in the flowers. Wm. Neil is rather thin. Blush Queen is one of the gems of 1893.

FANCIES.

Striped flowers.—York and Lancaster, Dawn of Day, and H. M. Stanley all produce excellent flowers, but they all have bad habits. H. M. Stanley is the best of the three. A compact habit is undoubtedly what should be worked for in this class. All striped flowers have a marked tendency to sport; and in order to keep the stock pure, only those flowers with the best markings should be propagated from.

White flowers, with coloured edges.—Bluecloud or Skylark, White Duchess, Columbine. In Bluecloud the habit is perfect, and the constitution so hardy, that it will stand the severest frosts unburnt. The flowers are very effective. The habit of White Duchess is first-rate, and the flowers are chaste and beautiful, although a trifle thin. Columbine produces fine flowers, but it is always liable to sport, and it has a bad habit. Recently several additions to this class have been made, which, when they become better known, will be popular, but there is still room for improvement; edgings of different colours may be secured, and the depth of the same made to vary, as in the *Picotée*.

Yellow flowers with coloured edgings.—This is comparatively a new class of *Violas*, but it gives promise of producing some fine things, especially for the exhibition table. Duchess of Fife and Peter Barr are the two best known. Duchess of Fife has a good habit, and is very attractive, but the flowers are like those of many others—lacking in substance. Peter Barr is quite a new break, and should be grown by all who are anxious to raise new varieties of *Violas*. I can vouch for its producing from seed some very fine things.

Countess of Kintore Type.—No name could more appropriately designate a section of the *Viola* than this old favourite. The section may be represented by Countess of Kintore, The Mearns, Mrs. Grant, and Mrs. Bellamy. All good so far as bloom is concerned. If improvement could be made, it would be in adding smoothness to The Mearns, but not if that quality were to detract from its freeness. The substance of Countess of Kintore is excellent, and it is an all-weather flower. The best habits are those of The Mearns and Mrs. Bellamy. There is plenty of room in this class for new and striking combinations of colour; but they must be quite distinct from the best varieties in commerce to be of any use.

The *Viola* with the best habit known to me is Bluecloud; the one with the best perfume is Bullion. Hardiness, habit, floriferousness, purity of colour, and perfume are the qualities to be worked for by *Viola* raisers, and in the order named. At least, such is my opinion. William Cuthbertson, of the firm of Dobbie & Co., Rothesay, N.B.

CHRYSANTEMUMS ABOUT LONDON.

(Continued from p. 587.)

MR. NORMAN DAVIS, CAMBERWELL.—For some years past a good show has been annually presented at the Lilford Road Nursery, and its proprietor, who has been connected intimately with *Chrysanthemums* all his life, is well known as a successful raiser of new varieties. The collection this year was quite up to its usual standard, and the plants have carried very fine blooms. It was a fortunate circumstance for

Mr. Jones that Vivian Morel chose his establishment in which to originate the bronze sport called Chas. Davis. We may roughly estimate the demand there must have been last spring for this undoubted acquisition by the frequency we have seen it at the exhibitions, and in private collections. The bloom is exactly similar in shape and size to Vivian Morel, and its colour is very pleasing, especially in the darker forms of it. In constitution, it is apparently identical with its parent. We noticed a good number of plants had been kept at Camberwell, but the blooms were something past their best. A good number of Wm. Seward also had been kept, and these showed, perhaps more clearly than we have seen it elsewhere, the very free habit of this fine variety. Col. W. Smith was another variety especially in favour, if we may judge by the space afforded it; and the magnificent Lord Brooke was present, though in smaller number. Golden Wedding, too, was noticeable; this, a very fine rich golden Japanese, has been much thought of in America, and has lately been certificated here, but it seems to be a thin flower here at present.

Ladrac is the name of an orange-yellow Japanese with very long florets, and will make a large flower. It has not been shown yet, but may be expected to be valuable. Chas. Shrimpton had been good, and Jno. Shrimpton is liked, because its habit is good and dwarf. A curly-white Japanese was named L'Isère, apparently of average merit; but a far greater novelty was an incurved Japanese named Louise. It is a pretty blush-pink, large, and is almost sure to make a popular flower. The yellow sport of Lady Selborne, like in every particular except colour to its parent, will shortly be sent out, a large stock has been worked up, and it will be an acquisition for early decorative work, as no other variety is so popular for that purpose as is its parent. Mdlle. Thérèse Rey was in good form, and its broad florets of a soft white, shaded with cream towards the centre, makes it a truly magnificent bloom. It has another good feature, in that all the flowers are usually good, and it never appears "weedy." Mrs. Harman Payne was large, Mrs. E. D. Adams just opening its curious-looking buds; Etoile de Lyon, an especially good colour; and President Borel in fair condition. Vice-President Calvat, one of last year's Japanese incurved, was not at its best, but it seems likely to take a place among the standard varieties. Several seedlings of single-flowering varieties were pretty and good.

LYONS.

THE Parc Tête d'Or at Lyons was probably the best kept and most interesting public garden which I visited on the continent. In this garden many plants appeared to me in quite new phases. The collections both of hardy and of indoor plants were very rich, and the individual specimens were good and healthy. *Magnolia grandiflora* was here a large tree covered with fruit, represented by many specimens and varieties. *Albizia Julibrissin* was quite hardy, and formed a graceful and elegant tree some 30 feet high. The collection of Coniferous plants was especially rich, but the climate seemed to be unsuitable for some of them, as they lacked the freshness and vigour seen in Ireland. Herbaceous plants and hardy annuals were very well grown. The Palm-house is large and well designed, the Palms are healthy, and many of the specimens are very fine. *Acanthorhiza Warscewiczii*, the *Phoenix acaulis*, although not the largest Palms, were the most remarkable specimens, being finer than I had ever before seen these two Palms. The collection of Orchids is rich in species and varieties of *Cattleya* and *Vanda*, and the plants belonging to these genera attained a state of health and vigour rarely to be seen in cultivation. The collection of succulent plants is one of the great features of the garden. Not only are the plants well grown, but many varieties are to be found represented by good specimens. All the succulents were arranged out of doors in bold masses or in single specimens, but in winter they are brought indoors. The temperature on the day of my visit was 92° Fahr. in the shade.

HYÈRES-LES-PALMIERS.

The Jardin d'Acclimatation at Hyères well deserves the commendations so generally bestowed on it by all interested in horticulture. In it have been brought together plants from many subtropical countries, and they grow and thrive in a manner astonishing to anyone who has only before seen them growing in pots under glass. The large specimens of *Eucalyptus globulus*, and of other species of *Eucalyptus*, are finer than I saw them anywhere else, except perhaps at the "Villa Menier" at Cannes, and they have assumed all the characters peculiar to them in their native homes. The Palms were also very remarkable. The tall straight stems of the Date Palms, *Phoenix dactylifera*, with thin sparse foliage, compare unfavourably with the stout stems, and rich and graceful foliage of *Phoenix canariensis*. The flower spikes in the latter species are also much more attractive. In it they are bright golden yellow, whilst in *P. dactylifera* they are dull greenish-yellow. *Dasyllirion quadrangulum* is also a plant well worthy of attention. It was a larger specimen than I had seen before, and the flower spike which it carried was quite 20 feet high. A group of small trees of the varieties of "Date Plum," *Diospyros Kaki*, were fruiting nicely, some of the fruits being as large as a good *Magnum Bonum* Plum, and the colour a bright yellow. This plant has survived some winters at Glasnevin, but it does not bear fruit. A large well-grown specimen of the Palm known as *Brahea Roezlii*, but which should be *Erythea armata*, was the most remarkable plant in the whole collection. The leaves, in the bright sunshine, seemed to be almost blue, forming a marked contrast to the surrounding foliage. I have found it impossible to get this Palm to assume the tints which I admired so much in several gardens along the Riviera, and a splendid specimen which was brought to Ireland from Nice, almost completely lost its distinctive colour in a couple of years. The collection of Bamboos was also a feature of much interest.

CANNES.

At Cannes I visited several gardens, the most remarkable of which was that belonging to the "Villa Menier." The landscape design in this garden was better than in any other, and there was more originality shown in grouping the plants. Some of the groups of Palms, Bamboos, *Musa Ensete*, and tree Ferns, were really excellent, better than in any other garden visited by me. A magnificent plant of *Eucalyptus globulus* near the entrance-gate is quite a feature in the garden. Other remarkable plants noticed by me, in or about Cannes, were *Washingtonia filifera* and *W. robusta*, both fine; *Ficus elastica*, a tree 30 feet high; *Grevillea Banksii*, a fine specimen nearly 20 feet high; *Sabal umbraculifera*, with a clear stem 15 feet; *Cocos flexuosa*, *Cocos campestris*, and *Eugenia myrtifolia*. The capabilities of the climate and soil about Cannes are apparently not thoroughly tested, and there is still much room for experiment. The proprietors of gardens seem to be content to imitate each other, to plant what their neighbours plant, and to design their gardens as the neighbouring gardens are designed, thus rendering most of the gardens a mere repetition one of the other.

LA MORTOLA.

The most interesting garden visited by me during my journey, was that of Thomas Hanbury, Esq., at La Mortola, on the borders of France and Italy. The situation is very beautiful, the grounds, diversified and undulating, running down to the sea-shore. The natural advantages have been fully utilised, and great taste has been brought to bear on grouping and arranging the plants. There are few botanic gardens which contain a collection of plants equal to that which Mr. Hanbury has got together at La Mortola, and there are no gardens, private or public, where plants are better grown or better tended. From one boundary to the other, rare plants meet one's view at every turn and at every point, and within reasonable limits it would be impossible to do more than to enumerate a few of those which appeared most remarkable at the time of my visit. Immediately beside the dwelling-house stands a magnificent specimen of the rare *Euphorbia abyssinica*, about 25 feet high, much branched, the branches with angular stems, the points of the angles being strongly marked with black. Beside it are other plants from Abyssinia, supposed to be new. Further on, the path is overhung with a dense growth of *Ephedra altissima*, which was covered with innumerable beautiful red fruits, much resembling the fruits of the Yew; a very remarkable sight, and highly interesting. *Russelia*

junea, a somewhat shy flowerer in the stoves at Glasnevin, was covered with red blossoms, the long slender branches hanging gracefully over the paths and banks. *Cocos australis* was in fruit, this being the only species of *Cocos* which I saw in fruit in any of the gardens which I visited. Near it was a fine plant of *Aberia Caffra*, covered with handsome yellow fruits, as large as those of the "Grecian Thorn," and somewhat the same colour. *Brachychiton populnea* forms a distinct evergreen tree, in effect not unlike the Portugal Laurel in our climate, but with a more upright habit.

The collection of Australian Proteads form a very interesting feature. These wonderful plants seem to be quite at home, and were growing freely. Two of the most remarkable were *Hakea Baxteri* and *Banksia grandis*, both rare plants. *Ficus elastica* formed a magnificent evergreen tree, and *Papyrus antiquorum* grew vigorously in a damp spot. A noble group of the black-stemmed Bamboo (*Bambusa nigra*) was bold and effective, the canes being between 20 and 30 feet long. *Maclura aurantiaca* was covered with large and showy fruit. The Norfolk Island Pine (*Araucaria excelsa*) and its relative *Araucaria Cunninghamii*, formed very grand specimens, and grew with astonishing vigour. *Aralia dactylifolia* was also remarkable; it formed a large and symmetrical bush 15 feet high, and as much through, the large deeply-divided leaves being very effective. The collection of succulent plants is perhaps the strongest point at La Mortola.

In this very complete collection are included many unique plants, and from it several new species have been named and described. Not only is the collection remarkable for the number of species represented, but also for the size and vigour of many of the specimens. Nothing that one sees under glass can convey an adequate idea of the grandeur of many of these gigantic and beautiful Agaves, as seen on a high bank at La Mortola, backed by evergreens and trees, in some cases throwing much branched inflorescences, a foot in diameter at the base, at least 30 feet into the air.

FLORENCE.

I was most anxious to have an opportunity of inspecting the collection of Orchids belonging to H. J. Ross, Esq., at Poggio Gherardo, near Florence. I was well repaid for going there. The same thing struck me as at Lyons—that is, the great vigour and strong growth of many plants which are not considered good growers in Ireland. *Aërides Lawrenceæ*, *A. Sanderiana*, and *A. Veitchii* were three plants which have probably no equals in cultivation. The "Moth Orchids" also grew wonderfully. Such rare species as *Phalænopsis Stuartiana*, *P. gloriosa*, and *P. speciosa* were represented by large healthy specimens, and *P. Schilleriana* had leaves of unusual size and substance. The growth of *Bollea* and *Pescatorea* (*Zygopetalum*) was such as to make one doubt if the plants could be the same as those grown under the same names at home. Cattleyas were also much stronger than usually met with. The heat in the Orchid-houses was not excessive, and the additional vigour seems to be due to the free and continual ventilation which the climate admits of, aided by the bright sunshine and the absence of dull, damp, foggy weather, to which of course must be added the attention and cultural skill of the proprietor. F. Moore, Report, Glasnevin Garden.

ROYAL BOTANICAL GARDENS, MANCHESTER.

If useful public services are the test of a society's importance, we have no hesitation in saying that the Manchester Society occupies a foremost place among similar institutions. For the last twenty-five years no horticultural society in the country has distributed such large sums of money in the promotion and encouragement of botanical and horticultural pursuits. Being a cultivator of Orchids, I should like to say a few words about what I saw on the occasion of a recent visit. Entering the show-house one saw at once a very fine display of bloom, chiefly made by *Cattleya labiata* vera. The plants are in fine health, well flowered, and amongst them are some very fine varieties, one or two being exceptionally dark-coloured. A few other good species of Orchids were *Oncidium varicosum*, var. *Rogersii*, the largest form of *O. varicosum*; *O. micro-pogon*, *O. crispum*, *O. C. var. grandiflora*; the beautiful and rather rare *O. Gardneri*, with fine

branching spikes; *O. fuscatum* (*Miltonia Warscewiczii*), fine plant with strong spikes of its brownish-red petalled flowers, with lip of rosy purple; *Vanda Amesiana* having five fine flower-spikes. These were interspersed among a number of plants of *Cypripedium insigne*, *C. i. Chantrieri*, *Odontoglossum crispum*, *O. Hallii*, very fine as regarded the varieties and the flower spikes that they carried; and *O. Harryanum*.

In a large house set apart for the culture of Orchids near the entrance to the garden, stands a noble specimen and fine form of *Cattleya labiata*, carrying twenty-three fine flowers. Arranged round the centre stages are some fifty plants now in flower; and I also observed plants of *C. Gaskelliana*, *C. Mossii*, *C. Mendeli*, *C. speciosissima*, which possessed very large pseudobulbs; *Vanda* was likewise well represented here, viz. *V. tricolor*, *V. t. suavis*, *V. Kimballiana*; besides *Aërides odoratum*, *Angræcum sesquipedale*, *Saccolabium*, and others. A fine plant of *Cymbidium Lowianum*, possesses six fine flower spikes, and two fine plants of *Cypripedium Sedeni*, sixteen flowers spikes each. It was a pleasure to find so fine a collection of species and varieties of *Cypripedium*, which flower freely in the winter months, viz., *Harrisianum*, *Spicerianum*, *Lathamianum*, *veixillarium superbum*, *Arthurianum*, *Niobe*, *Swinburnii*, and *calurum*. Good plants were remarked of *C. Stonei*, *C. Morganii*, *C. Mrs. Canham*, *C. Chamberlainianum*, *C. Germinyanum*, *C. Cleola*, *C. cardinale*, *C. politum*, and a number of others. D.

FLORISTS' FLOWERS.

CHRYSANTHEMUM GROWERS' TERMS.

THE remarks at p. 592 are very appropriate at a time when growers are careful to read, learn, and inwardly digest all that is written about their favourite flower. In the remarks there given, I do not find the first term used by the growers, namely, the "crown" bud. How or when these terms have been adopted I am unable to say; but when I constantly exhibited *Chrysanthemums* some twenty-five years ago, neither of the terms were used; had they been, I believe I should have remembered them, for I annually visited Mr. Salter's collection at the Versailles Nursery, Hammersmith, now built over. The two terms are even now confusing to those who have no practical knowledge of the growth of the plants, and information is constantly wanted about them from visitors when the plants are in flower, but it is easier to explain the difference between the two terms by a practical illustration in August and September than it is in November. For garden purposes, the term "crown" bud does very well, for it is the centre or crown of a group of buds at the end of the growth; indeed, the term can only be fully appreciated by those who have a practical knowledge of "taking" the buds. There is the larger bud in the form of a crown in the centre, and standing above all the others. [The true terminal bud of the botanist.] The question to be determined at this time is, whether the centre bud shall be left or taken out; in some instances it is better to leave it and remove the side buds with the finger-nail; in the case of another variety, the centre bud is removed, and one of the side buds is trained up to take its place, and this bud to all intents becomes the terminal bud, with a number of lateral buds clustering around it; but except that the two terms are in general use, there is no reason why "terminal" should not apply to each. The exhibitor who is successful at flower shows, has learned by experience or from other cultivators the date when the buds of each individual variety should be taken, and also whether it does better on a "crown" bud or upon a "terminal." For instance, the Queen of England section may require that the buds should not be set before the third week in September, but suppose that the crown bud is formed in the first week of that month, it would never do to "take" it, as not only would it be too early for the exhibitions, but

such flowers as would be produced from these early buds would be too full of petals, and lack altogether the symmetry of exhibition blooms. As a general rule, the buds underneath the crown bud are not flower-buds at all, but leaf-buds; if they were flower-buds, they would not form terminals. The grower takes out the flower-bud in the centre, and removes all the other buds or growths except two, his object in leaving two is upon the principle of having two strings to a bow, in case one should break; so in the case of these terminal growths, one may be a failure, but as soon as it is seen that they are both good growths, one of them should at once be removed; or if one is bad and the other good, the bad one must go of course. It is a very simple matter, and can easily be determined. Exhibitors who have had any measure of success, know quite well whether they should take the crown bud or a terminal of the various varieties. I referred to Queen of England and the sports from it as one that the buds should not be taken too early; on the other hand, the Japanese Mrs. Falconer Jameson must be taken from a crown bud. We had several plants of that variety this year, and I well knew that to obtain large fine blooms, one only should be allowed to develop on a plant, and that in each case the centre or crown bud should be selected, but all our buds were abortive except one this year, and we had therefore to train up side-growths, the result being that all the flowers are worthless except the one which was formed in August as a crown bud. Another peculiarity of this variety is, that to obtain flowers of the largest size, one only should be suffered to remain on each plant. Another point not noticed at p. 592 is, the influence which the seasons have upon the quality of the blooms. In some seasons one particular variety will be of high-class excellence almost everywhere, and other varieties will be much below their usual quality. The variety Jeanne d'Arc is good all round this year, indeed, it is much better than I ever saw it. "The Queen" section again has in most collections been inferior to what it is usually seen. I heard the expression used several times amongst exhibitors that this was not a good "Queen" year. Madame Darrier, a rather new buff-coloured variety, has been fine throughout; but Refulgence, a rich crimson or purplish-crimson variety, which was in great beauty last year, has also fallen behind. This is a matter for the physiologist to study, but it is almost as mysterious as the variation of colours in certain seasons. *J. Douglas.* [Will our correspondent kindly give the various dates at which buds may be selected (taken), and the varieties operated upon on those dates, also the varieties requiring exceptional treatment as regards the buds. Ed.]

NURSERY NOTES.

ROYAL NURSERIES, SLOUGH.

MANY who lament that they are unable to grow Violets (and many such there are, even among otherwise successful gardeners) would be astonished at the large and healthy plants, thickly set with buds, which are to be found in Mr. Turner's nursery at Slough. All the best varieties are grown, and all alike thrive admirably, and while giving but little trouble afford quantities of bloom throughout the winter. We purpose inspecting the Violets at Slough from time to time, and hope to give a detailed account of the culture which is there so successful, and which Mr. Turner states would insure success if followed out in every [rural] garden. The 70,000 Carnations, the houses of Cyclamen, Azaleas, Pelargoniums, Camellias, &c., at Slough, are also in fine condition.

The Chrysanthemums are well up to the mark, the span-roofed houses in which they are arranged being brilliant with well-finished flowers. New varieties and established favourites only are grown for show, although most of the others are kept in stock, and may be seen with flowers on them. Among the more striking flowers we noted Primrose League, a Japanese, a fine flower of a primrose

colour, changing to cream-white; Mrs. Walter Cutting, an incurved white, shaded with lilac; Lord Brooke, a fine yellow flower, tinged with bronze, is also magnificent. The white Louis Böhmer is an exceedingly fine thing; W. Tricker, a good bloom showing various shades of lilac; Mrs. Robinson King and The Tribune, fine yellows. J. Stanborough had fine yellow flowers, with a bronzy hue; Lady Lawrence was one of the best, the flowers being of great size; and other favourites showed up to such advantage that it was evident some of them had not been deposed by the newer varieties. Among others Lizzie Cartledge, W. A. Manda, and Chas. Davis were remarkable.



THE CORSICAN PINE.

I SEE by occasional notes in the *Gardeners' Chronicle*, that this Pine is now gaining more favour. It is not at all creditable to foresters that it has been so little planted, or perhaps, I should say, that there have been so many failures in the planting of the tree. Scotch planters have confessed in arboricultural papers that nearly half the number die in the planting, and a mistaken prejudice exists against it on that account. I lately heard a Scotch forester on a large English estate say, that the Corsican was "a brute" to plant, and he would not have it, whereas he could have seen great tracts of it growing on the adjoining estate better than the Scots Fir; and the reason of success in that case was, that not a tree had been planted later than the end of October, most of them weeks before that, and none earlier than the middle of April, while not a few had been planted in May or June. It is certain that an enormous proportion of the Corsicans do die when planted from November till March, but the forester who is not half so judicious as the gardener in selecting his season for planting different subjects, sticks to the rule-of-thumb plan of beginning to plant when he ought to finish, or leaving off when he ought to begin, which will not do with Pines, which should be treated like the Holly. Some years back, I saw a quarter of Hollies in a home-nursery that had been moved in December, and I did not see one live one in the lot. In May and August they would have been safe. I have moved thousands of Hollies up to forty years of age in every month between April and September, and lost few, and have them now to show. Another fault the forester has against the Corsican Pine is the quality of its timber, a question that should always be gauged by the uses to which it can be most profitably put. One, for example, of our collieries here uses between 4000 and 5000 cubic feet of Norwegian Spruce pit-props every month in the year at from 7½d. to 9d. per foot, and all the coal-pits in the country use the same props because we have no timber at home so suitable. Yet the Corsican makes a model pit-prop because it makes a clean pole of even girth, and I could dispose of hundreds of thousands of feet of it to-morrow if I had them, and on fair land a good crop can be raised in thirty years or less. No tree will bear crowding better. I believe I have one of the biggest stocks of growing Corsicans in the country, but the crop is not old enough to reap. Of less size than the Scots when alternately planted, they are now "nursing" the Scots. The only tree that competes with the Corsican is the Larch, when it escapes the disease, but the Corsican puts on bulk sooner, and can be produced cheaper. Besides, when dry, it is light—a great recommendation in a pit-prop. The Norwegian Spruce prop is light, but very perishable and weak. I see them coming up in tons out of the pits, smashed and broken, and going for fire-wood. Yet we have some thousands of acres of woods, and cannot sell 1 foot for props to the lessees of our own pits. The pit hands would probably

strike if any less handy and portable timber was used. It does not matter to them how many are used. Yet in Scotland, at least, they profess to have been growing Spruce and other Firs scientifically for a longer period than the age of the present Norwegian pit-props, scaffold and ladder poles, fencing rails, &c., and yet even then the foreign props are everywhere stacked by hundreds of thousands, girthing generally from 3 inches to 6 inches in the middle. The length of the prop and its thickness depends on the thickness of the seams of coal and the roof of the pit. I am not here speaking of the profits from planting, but if I had an estate I was obliged to plant, I would plant the Corsican, and let grow them like seedlings in a hotbed, and sell the crop in blocks. My next best favourite for the same purpose would be the Wellingtonia, but the conviction is fast forming in my mind that some of the Thuias and Cupressus would produce a greater number of saleable poles to the acre than any tree yet tried in this country. These species at an early stage throw up from four and five to as many as twelve limbs, that grow within a few inches of each other in a cylindrical manner—one yard or less covering the diameter of the bundle, all remarkably straight and clean. We have some unnamed examples of these (Lawson's Cypress, I think), between 20 and 30 feet high, and growing fast, each containing small poles as described, just exceeding or approaching the pit-prop size. About 8 feet covers the widest diameter of the branches of these trees, so it can be easily reckoned how many an acre would produce. It is by studying the minutiae respecting tree growth that one can reckon the profits or losses of planting, and any experienced woodman should be able, even in a strange locality, to calculate with approximate correctness what an acre of land will produce of measurable timber. Finally, as to planting the Corsican, we have hundreds of thousands of it from a young stage up to thirty years, few of the last in situations from about 200 feet above the sea to 1100 feet, and in a variety of soils and exposures, all doing well. Foresters have seen our almost unbroken rows of Corsicans, who could not be persuaded, except by seeing, and some of them seemed as if they would have been better pleased if their condition could have been attributed to some climatic peculiarity or the like, rather than that preconceived prejudices should have been upset. I have been referred also to authorities on the Conifer for corroboration of the Corsican's bad character as a transplant and carrotty rooter, but that character has been derived from unskilful planters. Rooters like the Corsican certainly do not succeed by the miserable "notch system" of planting, by which the roots are exposed to alternate frosts, and thaws, and droughts, when they can least bear a check, but if the long roots are dibbled straight down, as tap-roots should be, like Cabbages, they will be out of the reach of these evils, and the lateral roots will take care of themselves. Preparing the pits before-hand, exposing the soil to frost, turning the sod in, and all the rest of it, is quite needless. Apologising for encroaching so much on your space. *S., The Woods.*

FOREIGN CORRESPONDENCE.

COOKING THE LIMA BEAN.

YOUR correspondent, Mr. S. Courtauld, in his interesting notes of rare vegetables, on p. 424, speaks of cooking the Lima Bean in the pod. This Bean is a very popular vegetable in America, but it is never cooked in the pod; indeed, its outer covering is very tough, as well as bitter. It should be shelled, and boiled, just as one would cook green Peas. It is usually served with drawn butter, or else a portion of the water in which the Beans are boiled is retained and thickened with flour and butter, this last being the usual American mode of serving either Beans or Peas. Mixed with green Corn, the Lima Bean makes delicious "succatosh." In any form, it is the

most delicately-flavoured legume I know, and would certainly be a great acquisition to English gardens, if the climate will permit. *E. L. Taplin, Chicago.*

GRAMMATOPHYLLUM SPECIOSUM.

I send you a photograph of *Grammatophyllum speciosum* growing in the Botanic Gardens, Penang, mention of which was made by Mr. J. Veitch, in his "Traveller's Notes" in your issue of November 26 of last year. At the time of Mr. Veitch's visit, the plant measured 42½ feet in circumference, but it has grown somewhat since then, and this year produced twenty-four flower-spikes from 7 to 8 feet long. At the time it was photographed it had about 1000 fully-expanded flowers. It is growing on a mound 3 to 4 feet high, where it gets the full sun all day after about 9 in the morning. Once or twice a year half a cartload of leaf-mould is scattered among the roots, and this is the only attention it receives. This plant is rather widely distributed throughout Malaysia, but, so far as my observation goes, it is nowhere abundant. The finest plants are generally found high up in the forks of not very leafy trees, where it gets an abundance of sunlight. What is *Grammatophyllum Sanderianum*, figured in the *Gardeners' Chronicle* last July—*Grammatophyllum speciosum* without leaves? *C. Curtis.* [We are greatly indebted to our correspondent, but having already figured the plant on more than one occasion, there is no need to do so now. The gigantic pseudobulbs alluded to are those of *G. speciosum*; the name *Sanderianum* was a provisional name only, and should be disused in future. *ED.*]

WASHINGTONIAS (PRITCHARDIA).

At last the *Washingtonia filifera* has flowered in the Riviera gardens at the Villa "Les Delices," at Cannes. This is the first time, as far as I can ascertain, that it has flowered, although I recently saw in the *Lyon Horticole* that it had flowered and fruited at Palermo last year. The plant which has just recently flowered is decidedly not the largest specimen or oldest which exists here, but at the same time it is a very fine plant, measuring 12 feet in circumference at the base of the trunk, with a clear stem of about 20 feet in height. It bore two spikes, which resemble very much the Sabal in appearance.

It is comparatively of recent date that the *Washingtonia* has been introduced to the Riviera gardens, but it is nevertheless surprising to see the gigantic proportions which the trees have already attained. It was about the year 1878 that they were planted for the first time, originating, I am told, from the firm of Haage & Schmidt, of Erfurt. The largest specimen supposed to exist on the Riviera is at the Valetta Gardens, Cannes, which measures just over 13 feet in circumference at base of the trunk. The tallest I have seen are at Villa Madrid, some of which measure quite 28 feet in height.

Washingtonia robusta grows even faster than *W. filifera*, as may be seen by the accompanying photo [not received], which is of a plant which was planted in 1885, and was then only about 5 feet in height. It has now a clear trunk, 23 feet in height, with a beautiful head of foliage. *Washingtonia macrocarpa* is to be found occasionally in the eastern part of the Riviera, but in the west it is rather too cold. I saw this year at the Villa Riquet, near Mentone, a very fine specimen carrying an enormous head of foliage, and the picture of health.

The *Washingtonia* is decidedly one of the finest Palms to be found here, and is to be seen chiefly on the western part, whilst on the eastern very few are to be met with in villa gardens. *Riviera.*

THE ROSARY.

BOURBON ROSES.

With the exception of Madame Isaac Pereire and Mrs. Paul, all of the Bourbons of any merit are very old varieties. Although by no means a small class, there are only a few which are worthy of cultivation among the present-day Roses. Sir Joseph Paxton

(Laffay, 1852), Guilietta (Laurentius, 1860), Mrs. Bosanquet (Laffay, 1832), Souvenir de la Malmaison (Beluze, 1843), Baron Gonella (Guillot, 1859), Leveson-Gower (Beluze, 1846), syn. with Malmaison Rouge, and Queen of Bedders (Noble, 1878), being the best of some eighty or ninety varieties on our list. Turning to the newer varieties, we find Kronprinzessin Victoria (Spath, 1888), the white Malmaison, and Eurydice (Ketten, 1887) taking first place. The hybrid Bourbons cause considerable confusion, and if the class grows at the rate it promises, it will give some trouble to classifiers of Roses. Already we have Madame Isaac Pereire figuring with the hybrid perpetuals in many catalogues. The National Rose Society take it as a Bourbon, and I have little doubt this is correct; but many growers place it as a hybrid Bourbon. I think all will agree that Roses are over-classified, there being scarcely any class in which examples may not be found which would be equally well included in some other class. Hybrid Chinas, hybrid Bourbons, Bourbons, hybrid perpetuals, and some few of the hybrid Teas, might well be placed together under one heading. Even if for no other reason than easy reference, I think this suggestion is worth consideration. Mr. F. Cant and a few more catalogue these classes alphabetically, and thus render their Rose lists much less confusing than those which retain each variety in its class. Some few of the best hybrid Chinas and H. Bourbons, in addition to those named, are Blairii No. 2 (Blair, 1845), Coupe d'Hébé (Laffay, 1840), Paul Ricaut (Portemer, 1845), and Charles Lawson (Lawson, 1853). Paul Verdier is another H. Bourbon which frequently figures among the H. Perpetuals. I shall be very glad when some more simple method of classifying Roses can be decided upon; certainly the present classes are confusing, and have approached one another so closely, that very few if any could draw the line between selected varieties of several classes. *A. P.*

FRUIT REGISTER.

APPLES, COX'S POMONA AND ECKLINVILLE SEEDLING.

We have in these two varieties very good croppers, and Pomona is of a beautiful colour, of fair size, and it seldom fails to crop, whilst the tree, as a rule, grows freely. The fruits of Ecklinville are usually gathered and sent to market, or consumed direct from the trees. Both of these varieties are largely grown, but they are not good travellers, which is much against them as market fruits. I have been told that Ecklinville, although an early and heavy cropper, was about the worst when unpacked in the market, owing to its softness; the same is likewise true of Cox's Pomona. For home consumption, or for the supply of neighbouring markets, both sorts are very suitable ones.

CORNISH GILLIFLOWER.

In this variety we have one of the best-flavoured dessert Apples, though a somewhat shy bearer, but it sometimes fruits well, and usually at the points of the shoots. The fruits are not as fine in appearance as some others, but in quality there are few, if any, that equal it. The tree appears to fruit best when grown as a standard, and in soils that are not made too rich. *H. Markham.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By H. O. PRINSEP, *Gardener, Buxted Park, Uckfield.*

JERUSALEM ARTICHOKE.—The stalks may now be cut down and burnt, and a few roots lifted in fine weather, storing them for use in frosty or very wet weather. If litter be not objected to, the roots left in the soil may be covered with about 6 inches of decayed leaves or loose litter, so as to exclude frost.

STORE-HOUSE OR CELLAR.—Take advantage of bad and showery weather to look over all roots stored away, for on account of the mild autumn some of these will be starting into growth; and if these are allowed to remain in the store, their juices and their flavour soon deteriorate. Potatoes that were early lifted are already starting into growth, especially the more forward varieties, so that every precaution should be taken to keep the temperature of the store as cool as possible. Leave nothing that has

begun to decay, as decay soon spreads, and much mischief is done. Tubers intended for use in planting next season should be spread out thinly on a dry cool floor, and if possible exposed to light and air, thus promoting sturdy growth.

FORCED VEGETABLES.—These will soon be in request, and therefore the supply of them should be equal to the demand. French Beans growing in frames will require careful attention, dampness having a bad effect on the blossoms if the temperature is low, and air not freely admitted; but an arid atmosphere must be avoided, or red-spider will soon show itself on the leaves. Make fresh sowings of Beans at intervals of twelve to fifteen days, or according to the demand and the amount of space available for growing them; more space, however, will be required for these sowings than for sowings made in February, the flowers not setting freely during the winter months, nor the pods attaining so large a size.

POTATOS planted on slight hotbeds, if the shoots have grown 1 foot high, may be earthed-up with light fresh soil made warm, and the job performed on a mild day. It is a good practice to mix a small quantity of finely-powdered Kainit with the earthing-up soil, and to water the bed previously, allowing the foliage to get dry before nightfall. But little moisture is necessary after the earthing-up, as it spoils the flavour of the Potatoes.

ASPARAGUS that has started into growth should have a top-heat of 60° to 65°, anything exceeding the higher figure causing weakly growth. If water be needed, afford it at the same temperature as that of the soil, which should be tested with a plunging thermometer.

CARROTS, &c., if they have pushed through the soil, should be thinned to 1 inch apart; but if snails are troublesome, it is well not to thin before the plants have acquired some degree of strength. Some kind of slug or snail-trap should be improvised for catching them. Radishes and Onions, the latter especially, must receive early attention, or they soon get spoiled. Seakale and Rhubarb must be put into the forcing-pits in quantity, as may be required. Roots in the open ground should be covered lightly with litter or half-rotted leaves, after clearing away decayed leaves, and some of them taken up in readiness for forcing, storing them in cold sheds, &c.

GENERAL WORK.—At this time of the year fresh plantations of bush fruits, involving the trenching of the ground, have sometimes to be made, and there should be no delay in getting on with such operations. The Celery and other tender vegetables must receive attention, Pea-stakes be got in and trimmed, and Birch obtained for broom-making, &c., in bad weather, not forgetting label-making for all kinds of purposes.

PLANTS UNDER GLASS.

By B. WADDS, *Gardener, Birdsall Gardens, York.*

THE WINTER MANAGEMENT OF THE STOVE.—Much carefulness must be exercised in watering plants and in cleaning and re-arranging them from time to time, always putting those which are showing flower in the best positions. Those which are likely to be useful at the Christmas season, viz., *Eucharis amazonica*, *Euphorbia jacquiniæflora*, *Plumbago rosea*, *Eranthemum pulchellum*, *E. Andersonianum*, *Pancretium fragrans*, *Pentas carnea*, *Linum trigynum*, *Libonia floribunda*, *Thysacanthus ruticans*, *Centropogon Lucyanus*, *Centradenia floribunda* roses, and such *Gardenias* as are furnished with flower-buds, should be also well attended to, and accorded light positions not far from the glass, and be kept in a clean, well-cared-for condition. The water or manure-water afforded them should always be tepid. *Gardenias* in a pot-bound condition are benefited after they have been allowed to get rather dry at the roots by having the pot plunged to the rim in tepid manure-water for ten minutes. Continual waterings about the stem of a plant, or on the surface of the soil, sometimes makes channels through which the water passes off, leaving some portions of the ball in a dry state. If ½ oz. of Standen's, Clay's, or other well-known fertiliser be put in one pail of water, the plants derive much benefit, and sometimes for a change the same quantity of nitrate of soda may be made use of. Syringing overhead should now be done early in the day. Gesneras which are gone out of flower may be gradually ripened off and be stowed away with the *Caladiums*, *Gloxinias*, *Gloriosas*, and *Achimenes*, in a dry warm place. *Caladiums*, *Crotons*, *Dracænas*, *Aralias*, *Palms*, and other fine foliage plants should be kept quite clean from all

insect enemies. If thrips or mealy-bug are present on any of them, syringe weekly with Lemon-oil or petroleum emulsion.

PLANTS KEPT IN SMALL POTS FOR TABLE DECORATION.—These must in a general way be kept well in the light, and afforded a liberal supply of plant food. Plants of *Allamandas*, *Clerodendrons*, *Bougainvilleas*, and *Dipladenias* should now be at rest, and in this state may be placed in a cool part of the house, or removed to an intermediate-house. *Poinsettias* must have a good supply of manure-water to help them to form fine heads of bracts; *Ixoras*, *Stephanotis*, *Rondeletias*, and other evergreen plants must not get very dry at the roots, or they will lose their foliage, and they should be placed in the colder part of the stove where they may stay for the next two months. See that red-spider does not infest them, and to prevent its attacks well syringe the foliage on the underside at times. *Epiphyllums* ought to be very beautiful at this season in moderately-warm stove or intermediate-house. They are plants not requiring much water. Some of the best varieties are *E. truncatum*, *Hookeri*, *E. t. magnificum*, *E. t. coccineum*, *E. t. spectabile*, *E. t. tricolor*, *E. t. aurantiacum*, *E. t. Makoyanum*, *E. t. superbum*. They are mostly grown as worked plants on *Pereskia aculeata*, or some strong-growing *Cereus* or other *Cactus*, but for basket-work they do well on their own roots. The temperature of the stove should now range from 60° to 65° by night, 70° to 75° by day, with a small quantity of air afforded by the side-ventilation during mild weather.

HYACINTHS, TULIPS, NARCISSUS, and other bulbs that were potted last month and placed under fine coal-ashes, should be brought under glass, after cleaning the pots and the surface of the soil. Afford them water, and place in a cool pit or greenhouse for a time; see that they do not get drawn by being too far from the glass. *Lilium auratum*, *L. Harrisii*, and *L. candidum* bulbs starting to grow should be brought into a cool-house, and potted in rough loam three-quarters, dung one-quarter, and coarse sand. Several bulbs may go into a large pot, or one bulb into a small one, putting the bulbs half-way down in the pot, and only half-filling it with soil.

MIGNONETTE coming into flower should be neatly staked, and well attended to for water, keeping the pots in a cool-house or in a brick pit, on a bed of soil or ashes if possible. The plant does not like fire-heat, but the potting soil should be rich and porous, being made very firm by ramming it.

AURICULAS should have careful watering, and much air night and day for the next three months. Exclude frost, and do not let the soil in the pots become quite dusty before affording water.

CHRYSANTHEMUMS.—During the time these are in flower care should be taken to have them rightly named. If cuttings are to be taken from them, and as soon as flowering is past, cut them down, and place the pots in an unused forcing-house, but keeping the frost from them, giving air, and watering as they may need.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

CATTLEYA-HOUSE.—Plants of *Cattleya Trianaei* having now made and matured their pseudobulbs for this and next year flowering, will now be resting in some cool and airy part of this house, getting no more water than is really needful to prevent shrivelling. Some of the earliest flowerers will soon be showing flower-buds in the sheaths, in which case they do not often start again, but the flower-buds come steadily on. *Cattleya Percivalliana*, an early-flowering variety, comes into flower about the new year, should be carefully watered, and kept resting for a short time longer, but not allowed to become dust-dry, or the flowers will be small and thin. It is a species that requires a few degrees more warmth when at rest than *C. Trianaei* needs. *Cattleya Mossiae*, *C. Mendeli*, and *C. Schroderae* have made up this year's pseudobulbs, whilst others have only partly done so, and the latter will need to be watched, and as they finish their growth should be moved into a cool, airy, light part of the house. *Cattleyas* which have not finished growing should be placed where the temperature is warmer. We use our plants to this kind of treatment from this date onwards, so as to get the growth early completed. *Cattleyas*, as they finish growing, should have the dust and white scale sponged from the leaves with tepid soap-suds—a safe and cheap insecticide. Any pseudobulbs growing out of place, should be tied to neat stakes, but do not twist them, as this would cause crippled flowers. *Cattleya*

Warneri, *C. speciosissima*, *C. aurea*, *C. gigas* types, *C. Schilleriana*, *C. Gaskelliana*, if placed at the cooler end of this house, as advised in previous Calendar, and gradually ripened by giving them all the light and air that is safe, and careful watering, will need but little more water until January. Plants of *Odontoglossum citrosimum* and *O. grande*, placed in this house during the resting period, if growth be completed, should be very sparingly watered for a time, and then withhold water altogether for a time, to check the formation of new growth in the winter. *O. grande* will keep plump for a long time without any water at this season, and a good drying-off causes them to flower freely. Place these plants on a shelf close up to the roof. The flower-spikes of *O. Inseayi* will now be advanced, and enough water should be afforded as well, to keep the material about the roots moist. *O. coronarium*, and its fine variety, *O. miniatum*, may also be grown in this house, and as these make their new growths during the winter, they require to be very carefully afforded water, only just sufficient to keep the sphagnum moss in a fresh state.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

PRUNING PLUM TREES.—The pruning and training of Plum trees on walls and fences should be proceeded with as soon as the Cherries are finished; and this is of more importance if the trees are aged, or have long spurs, or these have become crowded. Bearing in mind the necessity of leaving spurs sufficient in number to carry a good crop of fruit, the longest, most bare, and worst-placed ones should be pruned-back to within 1 or 2 inches of the base. When spurs are allowed to extend 1 foot or more out from the wall, not only is the protection afforded by walls to the trees when in bloom to a certain extent lost, but the further protection of them by means of netting and other contrivances made difficult, and the dealing with aphids is also increased, long spurs affording a good harbour for them.

DRESSING THE TREES.—Plum trees infested with brown-scale should have their branches and twigs loosened from the wall, and be treated in the same manner as recommended in last week's Calendar for sweet Cherries, using the same insecticides, &c. Where the trees have been infested with aphides only, after finishing the nailing, &c., (which by the way should be closely examined, and tight fastenings made easy, and unnecessary ones removed), the trees should be well syringed with the soap-suds and petroleum emulsion, directing the spray behind the branches, which will be nearly certain to exterminate the aphides. It will, however, be advisable to again syringe the trees in mild weather in the winter and in the spring before bloom opens.

THE BORDERS.—The digging of the Plum tree borders may be undertaken as early as pruning, nailing, &c., is finished. Plums being surface-rooters, where it is the custom to deeply dig and crop such borders with vegetables, the check must be less to the trees if it be done at this season than in the spring. Should the trees be much restricted in the matter of space, the hard pruning-back of the roots with the spade may be considered as being beneficial rather than otherwise. But for high walls my practice is to deeply trench the border, and where the subsoil is of an unsuitable nature to remove a good portion, replace it with fresh loam, chalk, old mortar, or lime, and afterwards crop the borders with such subjects as will succeed with single digging only. In no case must the borders be dug deeply closer than 4 feet from the wall.

THE FLOWER GARDEN.

By T. H. CRASP.

ROSES.—During the present month the planting of Roses should have been completed, but where that is not the case, Roses may be planted in mild weather, care being taken to mulch them with litter. Where the tops are large, slightly prune the shoots, to prevent wind-waving. Standards should be staked and loosely tied immediately after planting.

BEDDING PLANTS.—Either store-pots or others must get constant attention, especially where housed in pits, affording them plenty of air in open weather, not any more water than they really need, picking off decaying foliage, and pricking up the surface of the soil if caked. Fire-heat may be used on mild days to dry the air in the pit or house. Keep a sharp outlook for mildew, and use flowers-of-sulphur

wherever it is noticed. Unheated structures must be well protected from frost by several thicknesses of mats. The work of planting the flower-beds with spring-flowering hardy plants and bulbs should now be finished, and the beds mulched with Cocoa-nut fibre refuse or leaf-mould. This year *Hyacinths*, *Crocus*, *Snowdrops*, and other bulbs are starting very early to grow. Clumps or beds of *Anemone japonica* should be afforded a dressing of decayed manure, before the stalks die off.

GENERAL WORK will consist of clearing-up fallen leaves, repairing and re-gravelling walks and roads, rolling lawns, taking-up, pricking over, and levelling the land, and relaying the turf; and in the case of lawns which are getting bare, a dressing of soil finely sifted, or of manure, if it be not objected to, may be afforded. Nothing is better for poor light land than a dressing of finely-sifted heavy loam three-quarters, and one-quarter wood-ashes or burnt garden refuse; and in the winter two or three drenchings with farm-yard manure, diluted if it be strong.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

EARLY FORCING OF THE PEACH.—Where the early forcing of Peaches and Nectarines is practised, and there are any old trees declining in bearing, these should be removed, together with the soil in which they grew, sparing the roots of the trees on each side; and if the drainage is in good order, fill in the station with pasture or other good loam, and mortar rubbish and soot in equal ratio, making these thoroughly firm for a depth of 6 inches at the bottom of the hole, which will stop the young roots from going downwards; then put in the soil prepared for the trees. This upper portion of the soil may consist of one part in ten of charred soil or lime rubbish, well broken, but no rank manure, as it is one of the causes of canker and of gross unfruitful shoots. The total depth of soil should not be less than 18 inches, and the deepest roots should not be more than 6 inches below the surface. After planting and watering, a mulch of Mushroom-bed materials may be allowed, but no rank manure whatever. If any trees are brought into the peachery from the open walls, or the nursery, they should be in perfect health and without knotty roots. If canker is apparent on the wood, or there are snags which have been often cut back, discard such trees, healthy maiden trees being preferable. I prefer to plant early Peach trees when a Peach-house is started, as they then become fit for forcing the following year. Our houses are about to be started, which will be slowly; and the trees in this house have fruited abundantly for the past ten years, ripening in the month of May and onwards.

VINES.—The placing of a long heap of fermenting stable-dung to aid the Vines in starting is of much service, and it is a very old practice, but much mischief has sometimes been done by the material being placed directly on the soil in which are the roots of the Vines. Where there is a border in the vinery, the manure had better be placed on a wooden platform raised above the soil, if a forcing-pit does not exist in the vinery. Take the canes down from the trellis, and slightly bend the tops to a low level, so as to induce the buds to break regularly, dousing them with tepid water. Vineries which may have been closed for fifteen to twenty days may be kept at 50° at night, with an increase of warmth of 10° by day with sun-heat. Slow forcing at the beginning is productive of short-jointed wood and compact bunches. The outside borders must have careful attention. Vines in pots now started must not have an excessive amount of heat, or too much moisture, either at root or top. By day, with sunheat, the temperature may rise to 60° or 65° in the afternoon.

CUCUMBERS.—As the days become shorter, the temperature in the Cucumber-houses and pits should be proportionately reduced, and when the weather is severe, the thermometer may fall to 60° in the early morning, and need not be more at any time than 65° to 70°, except by sunheat. The moisture in the air may be also modified according as the pits are heated, by fermenting dung or hot-water pipes. The former method gives much trouble, and an ever-watchful eye must be kept on the steam always arising from the materials. Heavy cropping must be avoided, and surfacing afforded as roots come through the soil. Those in pots may require liquid manure when well established and bearing.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Plants, Fruits, &c., to be Named.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be good ones, carefully packed and numbered, and not more than six should be sent at one time. Leaves only, or Florists' varieties cannot, as a rule, be named.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	Nov. 20	Rotherham and District Chrysanthemum.
TUESDAY,	Nov. 21	Dalkey (Dublin) Chrysanthemum, Manchester Royal Botanic Soc., Chrysanthemums and Hardy Fruits.
WEDNESDAY,	Nov. 22	Newbury Chrysanthemum.

SALES.

MONDAY,	Nov. 20	Important Clearance Sale of 50,000 Fruit Trees, at Perry Hill, Cliffe, near Rochester, by order of Mr. W. Horne, by Protheroe & Morris, Plants from Belgium, Roses, Ferns, Hardy Bulbs, &c., at Protheroe & Morris' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Nov. 21	Highly Important Unreserved Sale of Nursery Stock, at the Nurseries, Bagshot, by order of Messrs. John Waterer & Sons, Ltd., by Protheroe & Morris (three days).
WEDNESDAY,	Nov. 22	Dutch Bulbs, at Protheroe & Morris' Rooms. Roses, Plants, Shrubs, &c., at Stevens' Rooms.
THURSDAY,	Nov. 23	Dutch Bulbs, at Protheroe & Morris' Rooms. Lilies from Japan, Carnations, Gladioli, &c., at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.
FRIDAY,	Nov. 24	Dutch Bulbs, at Protheroe & Morris' Rooms. Orchids, at Protheroe & Morris' Rooms. Clearance Sale of Nursery Stock, at Osborn Nursery, Sunbury, re J. Gough in Bankruptcy, by Protheroe & Morris.
SATURDAY,	Nov. 25	Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°·6.

Where not to Plant Roses.

We all admit that the Rose should be planted in a sheltered spot, so that its foliage and lovely blooms do not get whipped to death by wind and rain, and the plant lose its branches and be generally rendered ragged and not an object of beauty; but those who have visited many gardens in this country are well aware of the vagaries of planters. There are exposed, bleak, wind-swept terraces in gardens everywhere, which owners have endeavoured to beautify with

standard and other Roses, but without avail; the Roses remain merely as a monument of misapplied labour, no change or addition of soil, manure, or anything else bringing beauty of leaf or bloom to them. We have in our mind's eye several such on terraces with a southerly exposure, the view in front stretching over many a mile of down and field. On a quiet summer day no spot is more delightful, but let the wind and rain come in furious gusts from the south-west, for perhaps forty-eight hours unceasingly, what of the poor Roses! they are but rags and shreds. And owners of gardens, when a plan of planting is their own, are often so crass as not to see it is not the gardener who is to blame for the ill-luck attending the Roses planted in such wind-swept places, but he who insisted on putting them there. A sunny spot, and an open one, is good for the Rose, but it must have shelter from the wind, or it will do no good. This shelter may be 20 or 30 feet away; or if it be high and thick, such as might be afforded by a thick belt of trees, or a thicker plantation, it may be 50 to 80 yards away. Beds of dwarf Roses are often effectually sheltered by a turf-bank 3 or 4 feet high, or a bed of American plants or other shrubs of a comparatively dwarf kind. In fact, Rose-gardens proper never look so well furnished as when they are surrounded with a continuous belt of tall and dwarf evergreen shrubs, with beds of these and deciduous shrubs sparingly introduced amongst the beds of Roses, allowing a good stretch of turf or gravel to intervene between the shrubs and the Roses; failing this, the former send their roots into the Rose-beds, greatly to their impoverishment. In this respect, American plants commit no injury.

In affording shelter, never put a Rose in a place closely surrounded by trees or shrubs, or in close proximity to a tree or big shrub. The Rose needs the fullest sunlight, and cannot bear a canopy of foliage stretching over it; and the only exceptions are the strong-growing Ayrshire Rambler and Prairie Roses, &c., which make enormous annual shoots, and really look well when allowed to ascend small trees and large bushes, and grow quite wild and unrestrained. Thus grown, they make for the outside of the supporting plant, clambering about the sunniest parts of the crown, and sending out strong shoots. The Roses of smaller growth soon become starved, and fall a prey to mildew if planted too near to trees and large-growing shrubs.

Equally as important as air, absence of overhanging shade, and complete shelter from tormenting winds, is good drainage of the land. Without this, all other efforts are useless. The soil may be clayey, but it can be lightened by the addition of road-grit, rough manure, burnt garden refuse, by working into it quick-lime, old mortar, burnt ballast, and various other substances; or, if light, it can be made heavier by the addition of clayey loam, clay rendered workable by the action of frost, and marl. For getting rid of stagnant water, pipe-drains at a depth of 4 feet are the best; and if a good outlet for the water collected in the Rose-beds or garden cannot be found, a dry well should be made, that is, an excavation some 8 or 10 feet deep, filled to the height of the inlet with gravel, clinkers, briekbats, and the like, and into this the outfall drain should be conducted.

The Shanking of Grapes.

KNOWING how prevalent is the evil known as shanking in this country, we are desirous of contributing our quota to the solution of this at present inscrutable subject. Why is it that on vines in vineyards abroad

the grapes do not shank, whilst here under glass with our Muscats and other varieties, shanking takes place in spite of every supposed precaution? We have observed the behaviour of vines in a great many vineyards in Central Europe, including many varieties of dessert grapes, and even the Muscat of Alexandria. This last named variety used to be grown at Carlbarg, Graf Henkel's place, near Pressburg, as a wall grape, and we have seen very fine bunches of deliciously-flavoured grapes lying on the ground at the foot of the vines, which in September were quite ripe, as shown by their bright golden tint, and those hanging on the wall needed only a week's more sunshine to make them as ripe as those.

Now, as to the supposed causes of the non-liability to shank in these vineyard and garden grapes. Most vineyards—at least, those that we have seen, which were intended for the cultivation of grapes for wine-making—are placed on sunny hill-sides, the flavour of the wine being much finer when the grapes are grown in such situations than that made of grapes from the lowlands, however good the soil.

Sometimes the slope of the vineyard is so steep that no wheel-barrow or cart can be employed, and everything—grapes, trimmings of the vines, manure, and stakes—must be carried on the shoulders of women generally, and excessively hard labour it is, as only those know who have tramped all day long up a steep slope with $\frac{3}{4}$ cwt. in a tub carried on the back. Naturally these hill-sides have a very shallow soil, and in some districts it appears to be merely a stony detritus, all the finer particles of soil, the humus and manure lying at or near the surface being carried to the bottom of the slope, unless stopped here and there by terrace walls, as may be seen at Kloster Neuburg, the Institute for Viticulture near Vienna, about Pressburg, and in many parts of the Rhineland, Burgundy, Spain, and Italy. This loss is constantly going on, entailing much labour to the cultivator in carrying the accumulations up the hill again, and in manuring. We see, therefore, that good grapes can be grown on very shallow soils with excessive drainage, as those overlying gravel or rock, thus showing clearly enough that our deep borders of rich soil are quite needless, if not detrimental to the vine and the soil, which is accentuated by our cool summers. May not, therefore, the deep border be a contributory cause of shanking? It cannot be lack of warmth in the surface-soil or of sunlight in the vineries, as the sun's rays in our glass-houses are of greater power there than out-of-doors in the vine-lands, as is shown by the excellence of our hothouse grapes, which are never equalled by out-of-doors in any country, however favoured by climate.

Will some gardener who has to do with shanked grapes give a shallow stony border placed on a bottom impervious to water and the roots of the vine a trial for a few seasons? We might then arrive at some results in arresting shanking, for which gardeners would be profoundly thankful. Another point in which we seem to err is, in cropping too heavily vines pruned on the single-rod and short-spur method. Do we allow foliage proportionate to the excessive crop of twenty to twenty-five bunches of $1\frac{1}{2}$ to 2 lb., which it is no uncommon thing to take from a small vine? This heavy crop is, in maturing, a source of weakness in the vine that no amount of root and aerial feeding can arrest. And it is very often just at the critical point when sugar should begin to form in the berries that shanking is first observed, i.e., in the last three weeks or a month before perfect ripening. A crop of twenty-five or even twenty bunches is more than a vine restricted in quantity of foliage and rooting space can carry without lessening its vigour, at least for a long series of years; whereas, it could carry twelve to fifteen bunches for many years in succession. We know of vines in favoured soils in this country which have done as much, and are still doing it; but that only proves the rule, and these vines are notable exceptions. A vineyard vine, on the con-

trary, carries six to eight or ten bunches of grapes, and the foliage carried by the five or six summer shoots of 5 feet long that are retained is commensurate with the needs of the vine in developing and maturing a crop of this size. We do not alter the nature of a vine merely by putting it under

from what we have seen of the immunity of vineyard vines from the disease, there would appear to be good grounds for this currently-held opinion.

The grape vine is not a denizen of fat pastures, but of the lean and hungry soils of the hills and mountains, of warm, temperate, or sub-tropical

—say, cow, pig, or horse—should be partially decayed, in which condition it may come almost close to the roots; and besides solid manures, there are liquid forms which may be applied during growth.

If the hints given in the above note should induce



FIG. 102.—CITRUS TRIFOLIATA: A HARDY ORANGE.

glass; but it is a question if the cultivation of the vine in this country under glass has not weakened its pristine vigour. That is another matter that only a course of experiments extending over several years would settle; and we may at length find that we have an inherited weakness in the vine to contend with. Our best writers on the vine have always considered over-cropping to be one of the causes which induce shanking, and if we may judge

countries, where it is in the main, a surface-rooting plant. It likes free exposure, and the fullest ventilation, with great sun-heat (summer-time) by day, and a comparatively low temperature by night—say, from 45° to 50°—an ample water supply in the spring and winter, and perfect drainage. The obtaining of fine bunches and berries is a question of manuring just before and during growth, and for this purpose the manure, if it be that of animals

some gardeners to make experiments with grape vines, and leave the beaten track, we may in time arrive at a better solution of the cause of shanking.

CITRUS TRIFOLIATA.—A hardy Orange ought to find favour in this country, but nevertheless the shrub, of which we now give an illustration, is not much known. Independently of its hardness, its singular appearance warrants its cultivation. It is a green-

branched Japanese shrub, with formidable spines, fragrant white flowers, and tri-foliolate leaves, the latter being deciduous. At Kew it has proved hardy during the severest winters. A few miles off, on a different soil, the plant was so injured that it was removed as unsightly, though not as dead. Under ordinary circumstances, then, we believe the shrub to be perfectly hardy, as indeed it is in the more rigorous climate of Antwerp, as illustrated by specimens sent us by Mr. C. VAN GEERT. But until this year, we have not seen it produce ripe fruit. It is to Canon ELLACOMBE that we owe the privilege of figuring the fruit. Mr. VAN GEERT has also sent ripe fruit from Antwerp. The illustration tells its own tale—we have only to add that the fruit is covered with a velvety down.

LINNEAN SOCIETY.—On the occasion of the meeting of the above Society, on Thursday, November 2, Professor STEWART, President, in the chair, Messrs. W. G. AXFORD and C. H. NICHOLLS were admitted Fellows, and Mr. H. M. BERNARD was elected. The Secretary having read a list of donations to the library since the last meeting, the President moved that the thanks of the Society be given to the donors, and to Lady ARTHUR RUSSELL for the valuable collection of engraved portraits of naturalists, which she has been so good as to present to the Society in the name of her husband, the late Lord ARTHUR RUSSELL, a motion which was passed unanimously. The President then referred to the improvements which had been carried out during the recess in the Society's apartments by the introduction of the electric light, for which they were indebted to the liberality of the Treasurer, Mr. CRISP, who on former occasions had shown himself so generous a benefactor, and moved that the hearty thanks of the Society be given to Mr. CRISP for his munificent present. The resolution was carried by acclamation. Referring to the death of Fellows which had occurred since the last meeting, the President alluded especially to the Rev. LEONARD BLOMEFIELD, whose connection with the Society, extending over seventy years, had recently been made the subject of a congratulatory address; to Mr. F. PASCOE, the distinguished entomologist; and to Mr. GEORGE BROOK, whose lamented decease had caused the vacancy in the Council which they now had to fill up. The ballot having then gone round for the election of a new councillor, in the place of Mr. G. BROOK, deceased, Mr. H. SEEBOHM was declared to have been elected. Dr. PRIOR exhibited a fully-developed fruit of *Pyrus japonica*, from Rogate, Sussex, seldom seen, although the plant is common enough; and alluded to its use as a conserve if it could be obtained in sufficient quantity. Mr. SPENCER MOORE read a paper on the "Phanerogamic Botany of an Expedition to Matto Grosso," upon which he acted as botanist. Starting from Cayuba, the expedition first visited the Chapada Plateau, to the east of that city, where many plants were collected. Thence a journey was made to the new settlement of Santa Cruz, on the Paraguay, about half way between Villa Maria and Diamantino. The flora here is of a mixed character, nearly 37 per cent. of the plants being common to tropical South America, upwards of 27 per cent. occurring in the N. Brazil Guiana province of Engler, with 20.5 per cent. common to that province and the S. Brazilian, and only 13 per cent. of S. Brazilian types. From Santa Cruz a party penetrated through the primæval forest lying to the north, and reached the Sierra de Saporapan. The forest flora is markedly Amazonian in character, nearly 50 per cent. of the plants being natives of Amazonia, or of the neighbouring countries within the N. Brazil Guiana province, or related thereto; while the proportion of species common to tropical America falls to rather more than 28 per cent., the S. Brazilian element being present only to the extent of 9.5 per cent. Returning to Santa Cruz, the Rio Braciato was partly explored, and the Paraguay ascended to the neighbourhood of Diamantino. The party then came down the Paraguay to the Corumba, where many plants of interest were found. The expedition was partly

disbanded at Ascension. Among the Amazonian plants found at Santa Cruz or in the forest may be mentioned *Randia Ruijeana*, *Bertiera guianensis*, the *Loranthad Oryctanthus ruficaulis*, *Cattleya superba*, *Epidendrum*, *Imantophyllum*, *Rodrigueziasacunda*, &c. The collections comprise close upon 700 species, of which rather more than 200 were considered to be new, and referable to eight new genera. The southward extension of the Amazonian flora to a latitude well within the Paraguay river system was regarded as a noteworthy feature.

THE TADCASTER PAXTON SOCIETY, held on Friday last, November 10, its second annual Chrysanthemum show, which was opened by H. H. Rily-Smith, Esq., and was largely attended. Although the gardeners' classes were badly represented, the show on the whole was a decided improvement. Three nice groups were put up (not for competition) by T. Fielden, Esq., Grimston Park; H. Bromet, Esq., Tadcaster; and Miss L. Bethel, Newton Kyme. The vegetables shown by cottagers were very fine; also the Chrysanthemums shown by amateurs. An Award of Merit was given to Mr. Grix, gardener to J. M. Dawson, Esq., Wighill, for a fine sport from Mrs. Shipman; also to Mr. William Green, of Garforth Nurseries, near Leeds, for his fine display of home-grown fruit.

LANTERN-SLIDES—ELEMENTARY BOTANY.—We are frequently asked where illustrations of botanical subjects can be obtained for lecture purposes. We are now enabled to answer the question, as Messrs. GEORGE PHILIP & SON, of 32, Fleet Street, London, have issued a catalogue of about 150 slides, illustrative of vegetable structures. The illustrations may be purchased or hired. The specimens themselves form the best of all illustrations, but in many cases they are not obtainable or available, and then these slides are very valuable, especially those devoted to microscopic structure.

NOVEMBER HORTICULTURAL MEETING AT GHENT.—Certificates of Merit *par acclamation* were awarded as follows:—To M. Jules Hye, for *Vanda cœrulea*, a plant remarkable both for cultivation and blooming, with two fine clusters of from fifteen to twenty flowers each, flowers very large, fully developed, of a beautiful tender blue colour; to MM. Duriez Frères, for a collection of Carnations, of which the following were the principal varieties—*Nicois*, flower white and flesh-coloured; *Jeanne Chevalier*, flower yellowish-slate, very distinct, and choice; *Madame Labrayère*, large orange flower; *Margottin père*, deep carmine, flower very large; *Raphael*, striped rose. Certificates of Merit *à l'unanimité* were allotted to M. Alex. Dallièrre for *Nepenthes Morganæ* ×, a splendid plant bearing thirty-five well-grown and coloured pitchers, claret in hue; to MM. Edm. Vervæet et Cie., for *Cypripedium Dautthieri Vervæetianum*, a valuable variety of great beauty, differing much from the types, the superior sepal is green bordered broadly with white; the two petals are yellow, the upper parts are edged with brown, the lip is a beautiful yellow. Certificates of Merit were awarded to M. Alfred Van Imshoot (*par rappel*), for *Odontoglossum Inleayi* splendens, the lip yellow, well marked with spots of clear red, which distinguish this variety from the type; to M. L. Desmet Duvivier (also *par rappel*), for *Cypripedium Chamberlainianum*, a sturdy plant, the flower of brilliant colouring in comparison with those hitherto seen; to M. Edm. Van Copenolle, for *Chamaerophyllum argenteum plumosum* [?], a very dwarf variety, the fronds finely cut, very silvery underneath; to M. H. Schmitz, for *Cattleya labiata autumnalis*, bearing a fine cluster of large purplish-red flowers, the lip very dark; to M. Léon Poelman Maenhout, for *Vriesia Aurora Leodiensis*, a variety obtained by M. Maréchal, Director of the Liège Botanic Garden; it has handsomely-coloured red and yellow flower-spikes, the flower-stem has eight branches, each bearing many blooms, which is a thing rarely seen. To M. Jules Hye, for *Cattleya exoniensis* ×, the lip remarkable for its fine white and red colouring; to M. L. Desmet Duvivier, for a

species of *Encholirion*, from the red centres come red stripes, which render the leaves very beautiful; to M. Bedinghaus, for *Echinocactus Grusoni*, a fine imported specimen; also for *Aloe Greeni*, a large cluster of a hundred rose-coloured flowers; to M. F. Desbois, for *Carex japonica*, a seedling variety with elegant green leaves; *Cypripedium miniatum* (*Spicerianum* × *Fairieianum*), with the characteristics of both parents, the upper sepal and lip of *Spicerianum*, the petals of *Fairieianum*; to M. Jules Hye, for *Cattleya labiata autumnalis* var., an unusual variety, the sepals and petals rose-coloured, marbled distinctly with deeper rose, the lip very dark. Cultural Commendations were awarded to M. E. Bedinghaus, for *Abutilon Thompsoni* fl.-pleno; M. Jules Hye, for *Odontoglossum macrophyllum*, many flowers, pure white, much spotted with red; M. Jules de Cock, for *Cypripedium Haynaldianum*, with twelve fine flowers. Botanical Certificates for a hybrid of *Skimmia japonica* by *Aucuba japonica* [?], obtained by M. François Desbois; the plant is interesting because, unlike *S. japonica*, the flowers are hermaphrodite. *Ch. de B.*

THE DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of the above on October 14, the Floral Committee awarded:—First-class Certificates: to Mr. C. G. Van Tubergen, jun., of Haarlem, for *Hæmanthus* sp., *Transvaal* (new plant), and *Anemone japonica*, Sieb. et Zucc., var. *Lady Ardilaun* (new plant); to Mr. G. Blankensteijn, of Heemate, for *Begonia Baumannii hybrida* (new plant). Second-class Certificates: to Mr. C. Van Tubergen, jun., of Haarlem, for *Nerine pulchella*, Hort. (new plant); to Messrs. E. H. Krelage & Son, of Haarlem, for *Kniphofia hybrida Lachesis* (new plant), and *Cactus Dahlia Harry Freeman* (new plant); to the Nursery "Tottenham," of Dedemsvaart, for *Chamaecyparis Lawsoniana* var. *aurea nova* (new plant); to Mr. L. Duval, of Versailles (through the agency of the Botanical Garden at Leiden), for *Vriesia fulgida* (new plant). Botanical Certificates: to Mr. C. G. Van Tubergen, jun., of Haarlem, for *Kniphofia modesta*, Bkr. (new plant); and *Drimiopsis Kirki*, Bkr. (insufficiently-known plant); to Messrs. De Graaff Brothers, of Leiden, for *Kniphofia modesta*, Bkr. (new plant); to the Nursery "Tottenham," of Dedemsvaart, for *Chamaecyparis Lawsoniana lycopodioides* (new plant).

"VAGABOND."—We regret to state that, owing to ill-health, our correspondent Mr. CARMICHAEL, writing over the above *nom-de-plume*, has been advised to betake himself to the more salubrious climate of South Africa.

THE EXPORT OF FRUITS, ETC., FROM OPORTO.—Of fruits, &c., which constitute regular articles of export from Oporto, we are told by Consul GRANT in a report to the Foreign Office that Onions, Apples, and Oranges, are the goods sent in the larger quantities to the British fruit markets. London, Hull, Bristol, and Liverpool, are the ports to which these articles are shipped, the last-named taking about two-thirds of the whole amount exported. The Onion season generally commences about the end of June, and shipments are made up to February, though the bulk is made up from July to the end of September. The yearly exportation of these Onions (for the good quality of which Oporto enjoys a certain reputation) may be taken roughly at about 120,000 cases in an ordinary season; a fair quantity is also sent to Brazil. The 1892 crop was a large one, and the shipments were expected to reach 150,000 cases. The Apple crop begins about the end of June, and the average exports may be put down at between 15,000 and 20,000 cases. This season, however, owing to the crop having been an unusually large and early one, and there having consequently been more time for the shipment before the English fruit was ready for the market, the export of Apples during the latter part of June, July, and August, was about 30,000 cases. The shipment of Oranges from Oporto

has been for some years on the decline, as the fruit is of a poor kind, and unable to compete successfully with that from Valencia and other sources, the exports being, therefore, limited to a few thousand cases during the months from December to March.

ORCHIDS.—M. LUCIEN LINDEN has in the press a treatise on exotic Orchids and their culture. It will form a volume of 800 pages with numerous illustrations.

SEED MERCHANTS TO THE QUEEN.—We learn that Messrs. DICKSON, BROWN, & TAIT, seed merchants, of 43 & 45, Copenhagen Street, Manchester, have been appointed seedsmen to Her Majesty the Queen.

—Messrs. DOBBIE & Co., Rothesay, N.B., also desire us to inform our readers that they have been appointed seed growers and florists to the QUEEN.

"THE ORCHID REVIEW" this month is rich in hybridisation lore. It is very important that an accurate record be kept. As to the nomenclature of artificially-produced hybrids—we think there is, for garden purposes, a great deal to be said in favour of a purely vernacular system of naming. For scientific purposes, it may be well to adopt scientific names, but now that hybrids are increasing so rapidly, we think it undesirable to mix up the history of a plant with its name, and to complicate matters by a cumbersome and embarrassing system of nomenclature. Although there are some few cases where a composite name, indicative of the nature of the plant, is for a time very convenient, yet speaking generally, it is much more convenient in practice to let a name be a name, and a name only. The history, structure, and synonymy of any plant are much better dealt with separately. It is not every gardener who cares to know anything about these things, and the botanist, to whom they are of primary importance, knows where to obtain information about them.

"COTTAGE GARDENING."—We have received a copy of the second volume of this publication, which is edited by Mr. W. ROBINSON, and issued by Messrs. CASSELL & Co. In these days of allotment gardens and technical education, this publication, the cost of which is one-halfpenny weekly, should meet with a large circulation. It comprises not only cottage gardening, but poultry, bees, and simple cookery. It is exceedingly difficult in such a publication to avoid "shooting over the heads" of the readers, and to supply them exactly with what they want, but this publication is well adapted for its purpose.

COSTOS IGNEUS.—If the merits of this sub-shrubby stove plant were more generally known, it would be oftener seen, it being of easy cultivation, and its period of blooming so prolonged. We are indebted to Mr. LINDEN for its importation from Brazil. It somewhat resembles a Ginger or a Hedychium in growth, but is shorter jointed, and of sturdy habit, growing from 18 inches to 2 feet high, and as much through, and to some extent dying away in winter. A fine specimen of the plant has been in bloom in the Botanical Gardens, Birmingham, for several weeks, and will continue in flower some time longer; and the colour of the blooms is a brilliant orange, and these appear in small clusters, each bloom being 2 to 3 inches in diameter.

TOADS.—The history of toads and the ideas which have prevailed about them is very instructive, for it shows how the beliefs of one generation may be scouted by another, and again re-established on a firmer footing many years afterwards. I remember reading as a child, a story of how King John was poisoned by a friar, who dropped a toad into his wine, but sober books of natural history forty or fifty years ago, scouted the idea of toads being poisonous at all. A little while ago, however, Dr. LEONARD GUTHRIE sent me an interesting account of a wicked Italian woman whose husband was dying of dropsy. He took so long about it that his wife became tired

of the process, and thought that she would help him on. She accordingly caught a toad and put it in his wine, so that he should drink the liquid and die, but instead of doing this, to her astonishment and disgust, he completely recovered. Forty years ago this story would have been scouted as equally mythical with that of King JOHN, but now we know that it is precisely what the woman would have expected, if she had only been acquainted with the researches of modern pharmacology. For the skin of the toad secretes a poison, the active principle of which—phrynin—has an action very much resembling that of digitalis, which is the remedy, *par excellence*, for dropsy depending on heart disease. It is quite possible that, some of these days, we may get some enterprising firm advertising essence of toad as of superlative virtue for the cure of dropsy. In the same way as one formerly laughed at the idea of toads being poisonous at all, one may sneer at the exactitude with which rules were laid down for the collection of herbs, so that the witches were careful to collect the root of the hemlock at night. But the researches of SACHS, and more recently those of HORACE BROWN, have shown that starch is formed in the leaves of plants during the day, and is consumed during the night. I do not know whether a similar process goes on in the root or not, but, if so, a given weight of a plant collected during the night, would be more active than the same weight collected during the day. It is just possible, then, that SHAKESPEARE'S witches showed more wisdom in their mode of collecting plants than we moderns do, but even if this be so, we are far ahead of them in knowing the active principles to which the plants owe their physiological and remedial action. Dr. Lander Brunton in "The Pharmaceutical Journal and Transactions."

WILLOWS.—The determination of the species of Willow is a weariness to the spirit, so that any alleviation of the difficulty is sure to be welcome. Such alleviation has been furnished, so far as regards the Atlantic American species, by Dr. GLATFELDER, who, in a communication to the fifth annual report of the Missouri Botanical Garden, utilises for this purpose the venation of the leaves. Dr. GLATFELDER is careful to point out that his scheme is not perfect. Variations occur in some cases, whilst in others, species really distinct, have the same mode of venation. The author establishes three main groups according as the secondary veins are regular or irregular—or, and here is the *crux*, partly irregular. The paper is illustrated by photographic reproductions.

CATTLEYA LABIATA.—M. LINDEN sends us a flower with four sepals, two petals, two lips, and a double column. The presumption is that two flowers are welded into one.

PUBLICATIONS RECEIVED.—*To-Day*, by JEROME K. JEROME. Price two-pence weekly. — *The New Era*, a dairying periodical, edited by the Disc Churn Co., office, 39, Coleman Street, London, E.C.

PLANT PORTRAITS.

BIGNONIA RODIGASIANA, L. Lind.—A stove climber, with opposite, stalked, simple, ovate-lanceolate leaves, mottled with white on the upper surface. The flowers are not described, but the appearance does not appear to be that of a Bignonia. It probably belongs to some quite different order, but in any case it is an attractive stove climber. *Illustration Horticole*, t. 183.

CAMPANULA MACROSTYLIS, Boiss. et Heldr., Garten Flora, t. 1395.

CATTLEYA GUTTATA VAR. PERNAMBUCENSIS, Rodigas.—Flower-segments greenish-yellow, almost destitute of spots, lip with the front lobe rich crimson, edged with white. *Illustration Horticole*, t. 184.

CERASUS CAPULI, Revue Horticole, November 1.

COTYLEDON QUITENSE, Garten Flora, t. 1396.

LYCASTE AROMATICA, Garten, October 28.

RHODOCHITON VOLUBILE, Neubert's, Garten-Magazin, n. 19, 1893.

SCHIZOCODON SOLDANELLOIDES, Garten, November 4. A beautiful illustration of a remarkable plant figured in our columns, April 8, 1893, p. 415.

BOOK NOTICE.

BULBS AND TUBEROUS-ROOTED PLANTS, &c.
By C. L. ALLEN. (New York and London: Kegan Paul, Trench, Trübner & Co., Charing Cross Road.)

This is an excellent guide to the knowledge and cultivation of bulbous plants, taking the term in a very wide sense—one, however, that is physiologically correct, if not morphologically unimpeachable. The author evidently writes from practical experience, and with a freshness and confidence not given to the hack-compiler. The directions given are suitable to the climate of the Atlantic States of the Union, and require modification in our relatively sunless and moister climate. Mr. Allen calls attention to the circumstance that Loddiges, in the *Botanical Cabinet* as long ago as 1820, gave a coloured engraving of an almost perfect flower of the variety of *Canna* known as *Madame Crozy*. Mr. Allen is hardly correct in his references; but after some search we find that, in 1822, in the 5th volume of the *Botanical Cabinet*, t. 449, a variety is figured under the name "aura-vittata," i.e., a name which, as Messrs. Loddiges tell us in the Index, at the suggestion of Mr. Roasco, they changed to *limbata*. That *Madame Crozy* has some points in common with *C. limbata* may, of course, be admitted, but no one surely can endorse Mr. Allen's statement that it is the same, or that Loddiges' figure correctly represents an almost perfect flower of *Madame Crozy*! Those who are partial to popular names, may be interested in knowing that *Muscari botryoides* is known under the name of "Baby's Breath." We hope that name will not deter any prosaic reader from doing justice to this book, which we can fully recommend to the cultivator.

KEW NOTES.

STAPELIA GIGANTEA.—The following plants of interest are now flowering in the houses at Kew:—*Stapelia gigantea*, several plants, some of the flowers measuring 12 inches in diameter; *Lonchocarpus Barteri*, a climbing Legume, from West Tropical Africa, with pinnate leaves, and large compound racemes of pink and purple flowers. It extends up a wire to the highest point in the Palm-house, mingling its rope-like stems with *Aristolochia brasiliensis*. *Crinum Hildebrandtii*, one of the most elegant of the white-flowered species from Tropical Africa, and exceptional in its growing and flowering freely under ordinary stove treatment. *Dracæna thalioides*, a plant a yard high, with an erect branched spike of greenish-white flowers; the same plant flowered last year; *Dracæna floribunda*, a handsome tree *Dracæna* from Mauritius, with a large, drooping, dense raceme of white flowers; *Xanthorrhæa quadrangulata*, a tall plant, with a charred stem 6 feet high, bearing a tuft of rush-like leaves, from which springs an erect spike like a Bullrush; *Aristolochia odoratissima*, a West Indian species, with hastate green leaves and flowers not unlike those of *A. elegans*, but less attractive; this plant was obtained from a continental nurseryman under the name of *A. Duchartrei*; *Hillia tetrandra*, a *Clusia*-like plant, with long-tubed white flowers, not unlike *H. longiflora*, figured in *Gardeners' Chronicle*, 1885, vol. xxiii., p. 527; *Dombeya Burgessiae*, a robust, large-leaved shrub, not unlike *Abutilon vitifolium*, with axillary clusters of white, flowered with a crimson eye-like blotch at the base of the cup formed by the petals: it is a native of South Africa, and has lately been introduced from Barberton; *Pentas purpurea*, a new introduction from East Tropical Africa: it is not unlike the well-known *P. carnea*, but it has larger leaves, and the flowers are shorter in the tube; *Coleus Penzigi*, a succulent green-leaved species, about a foot high, with long terminal spikes of dull blue flowers. It is a native of Abyssinia, and we owe its introduction to Messrs. Dammann.

Brownea Crawfordii ×.—Several fine heads of flower have been developed by this plant during the

week. It is one of the very best of the Brownes. It is a hybrid between *B. grandiceps* and *B. macrophylla*, having been raised by the late Mr. W. H. Crawford, of Lakeland, Cork. The heads are spherical, fully 9 inches in diameter, and composed of a large number of rich scarlet flowers.

Among Orchids in flower may be noticed *Cynorchis grandiflora*, a pretty terrestrial plant from Madagascar; *Maedevalia triglochium* and *M. Carderi*, *Dendrobium*, *Cattleya*, *Cypripedium*, &c. There are several good forms of *Lælia furfuracea* in flower, one bearing a spike with ten flowers, and another flowers of a deeper shade of rose-purple than is usual. These plants were purchased a few months ago for *L. majalis*. By the way, is there any good reason why the plant called *L. Eyermaniana*, by Reichenbach in 1888, and supposed by him to be a natural hybrid between *L. majalis* and *L. autumnalis*, should not be called simply *L. furfuracea*?

HOME CORRESPONDENCE.

THE FRUIT-ROOM.—In many good gardens after the fruit is gathered and stored away in the fruit-room, a good deal of the interest shown in it whilst it was growing is lost to many employers, the fruit-room being a not very inviting place or one into which their friends could be shown. A good fruit-room is one in which the fruit may be tastefully arranged, properly labelled, and everything kept scrupulously clean, and then instead of interest in the fruit being lost, it would be increased. Frequently a fruit-room is too small for the fruit to be stored, and that makes matters worse. The fruit-room at this place is span-roofed, 12½ feet wide; and instead of the usual series of shelves in the middle space with a path all round, and narrow-side shelves, there are only side-shelves, which are 3½ feet wide, this leaving a space of 5 feet in width where one may stand with comfort to inspect the fruit on the shelves. *T. Turton, Maiden Erlegh.*

EARLY SEVERE FROSTS IN WARWICKSHIRE.—The thermometer in the gardens here registered on the mornings of October 30, 31, and November 1, 6°, 11°, and 11° of frost. I should like to know if it is usual to have these frosts in the early autumn, and if other gardeners in this district have experienced the same. *G. H. S., Myton Grange Gardens, near Warwick.*

PEARS IN YORKSHIRE.—I have seen several notices in the *Gardeners' Chronicle* of heavy Pears grown in the South, but nothing from the North. I send you a box by train to-day containing two Pitmaston Duchess Pears, the last I have out of seventy-eight, grown on a tree planted seven years. The two I send you weighed 27 and 28 oz. each when gathered; in ripening they have lost a fraction or two of an ounce. I also send Triomphe de Jodoigne, weighing 1 lb.; this is rather a new Pear, and will be a great acquisition to us, as, if carefully managed, it will come in later than Marie Louise. I send one taken from a graft on a spur of Bergamotte d'Esperen—very like the latter. I also send a North Yorkshire specimen of Beurré Diel, Beurré Hardy, and Bergamotte d'Esperen. *Wm. Culverwell.* [Fine specimens, the Duchess ripe and well flavoured. Ed.]

LATE RED CURRANTS.—The Currants which I gather to-day and send you were ripe on July 15, and they have hung on the bushes, or rather standards, till the present time. *A. Corps, Hensell, Hawkhurst, Kent.* [The fruit was of good quality, considering the length of time since it ripened. Ed.]

TREE GUARDS FROM VERMIN.—I have not seen anywhere a simpler method of protecting the stems of fruit trees from the attacks of hares, rabbits, &c., than was found in a large orchard the late Mr. James planted at Farnham Royal. This orchard stands close to woods and Burnham Beeches, and is surrounded by cover for vermin, and yet, so far as I have seen, his simple protectors proved most efficacious. These consisted of pieces of smallish mesh wirework, perhaps 1 foot in length, and some 2½ to 3 feet in height. Each piece was fixed round the stems of the trees, and so secured by the cut ends that it could not be readily removed. It was loose, and whilst allowing the stems full expansion, yet entirely prevented the vermin from getting any access to them. All wood protectors they could

gnaw, [but do not], and not in vain, but against wirework they were helpless. The cost was comparatively small, and the result most satisfactory. As to tree supports, the suggestion that these should be of iron, and have at least three spreading claws, seems to indicate a costly method. The objection raised to stout wooden stakes, which are relatively so cheap and accessible, seems based on the supposition that in driving them into the ground the tree-roots might be injured. If, however, the stakes be fixed in the ground where the trees are to be planted first, that trouble is obviated. At the outset that would be the common-sense method. Then after a couple of years, when new stakes may be required, they could be fixed in the same holes as were the old ones, as, of course, the new stakes should be stouter; a secure yet loose tie with tar-cord, a small wedge of straw being inserted between the tree-stem and the stake to prevent chafing, seems to present the simplest and best possible method of supporting the trees. *A. D.*

FROST IN NOVEMBER.—Your correspondent "H. E." p. 568, will find Sir Robert Christison's open winter prognostication recorded in *The Life of Sir Robert Christison*, vol. ii., p. 207 (W. Blackwood & Sons, 1886). *R. L.*

STEERING POTATO SETS.—This spring there was a good deal of discussion as to steering Potatoes in nitrate, &c., to make them start well, and give a bumper crop; some said it did well, some said it did badly. I told my grieves to try it, and now enclose you his report, as he has just lifted the Potatoes; he tried different varieties, but the haulms of all of them in summer were most miserable, and now the crop is the same. The soil is stiff clay, well dunged for two years running with policemanure, i.e., ashes-firing, manure, &c.—"The Potatoes at Millholme, which we steered by way of experiment last summer, have only proved, as I thoroughly expected, a real failure; first, there was not two-thirds of a crop, and of these one-third was diseased, whereas, in the unsteered ones, the crop was an excellent one of all the varieties, viz., Sutton's Abundance, Reading Hero, Magnum Bonum, Champion, it was all the same; so that, on the whole, it must be considered a failure."—Report by Mr. Robert More, Grieve to Mr. J. R. Haig of Blairhill, Rumbling Bridge, Perthshire, November 10, 1893. *J. R. Haig.*

READING HERO POTATO.—It may interest some of your readers to know that I have just lifted one root of this variety consisting of twenty-six Potatoes, and weighing 21 lb., the largest tuber being 3½ lb. in weight. I may add that we grow about 1 acre of this quality for household use, and, considering this very dry season, we have lifted an excellent crop, and the quality is all that could be desired. *T. Oldham, Stoughton Grange, Leicester.*

THE WEATHER IN SUSSEX.—The weather at the beginning of the month was very changeable. On the morning of November 1 the thermometer stood at 17°, or 15° of frost. The soil was frozen so hard that it was difficult to dig the first thing in the morning. The morning was bright, but it became dull, and then rainy. The ice was three-eighths of an inch thick. We have since had very mild weather, accompanied by showers. The rainfall, however, is still considerably below the average in this part, and the springs are very low. This morning (November 6) there was a change again to cold weather, 12° of frost being recorded. *H. C. Prinsep, Buxted Park, Uckfield.*

POTATOS AND DROUGHT.—Late varieties of Potatoes are more affected by super-tuberation ("growing-out," as it is termed) than early ones. When copious rains follow a long period of drought, the tubers of late sorts are almost certain to make a second growth. It is possible, however, to obtain a good crop of Potatoes without a drop of rain falling upon them from the time of planting to lifting the tubers. Such an occurrence as this did take place in a garden not far from Torquay last year. The variety, Myatt's Prolific, perfected a crop in the manner described. In deeply cultivated soil the tubers are less likely to make a second growth than in soil but lightly moved, for the simple reason that in the former, moisture is not so readily evaporated and absorbed, the tubers do not receive such a check, and do not make a second growth so early. *E.*

THE ROYAL GARDENERS' ORPHAN FUND.—Being one of the subscribers from the commencement of the

Gardeners' Orphan Fund, and after reading the note from "One of the Founders," I am not very much surprised to hear of the miserably small collection realised by the cards. For my part, I must admit that I do not approve of the card collections; it becomes a nuisance year after year to have to go begging with a card in your hand, and the public get tired of such a way of begging. I am sure more good might be done in each county by the local secretary, if he formed a local committee, and let them raise funds in the best manner they thought proper, by concerts, bazaars, flower shows and galas. I am sure more money would be forthcoming, and with a deal greater pleasure in raising the funds than by begging cards. Unity is strength, and a great deal more can be done by a body of men than by individual effort. I enclose you statement of account of a concert got up by a number of gardeners, just to show you what can be done by working together. *An Old Subscriber.*

THE BLEEDING OF VINES.—Many cultivators go in fear if their Vines "bleed," yet it is very rare that a Vine is lost from this cause, unless it be very old. There can be no doubt that the loss of sap at the time just previous to growth recommencing (and that is the only stage at which bleeding occurs) checks growth for that season; but beyond doing this, it does not usually seem to have further consequences which can be called injurious. Moreover, we seem to have here a hint as to one of the methods which may be employed to check a too-exuberant growth, and having the same results as root-pruning or lifting, which are operations that always mean root-pruning, i.e., loss of roots, however careful the gardener may be in doing the work. A check of this kind delivered to growth would mean a consolidation of wood both old and young, and there is no reason why it should not tend to better fruit-bearing, by reason of the earlier date at which such wood would ripen. It is known that tapping Conifers in order to obtain turpentine from them does not weaken them injuriously if they are planted in a soil that suits them, although it retards growth, and has a favourable effect on the timber, as has been proved by numerous tests made by the U. S. Agricultural Department. Might not some similar result occur in a Vine, Fig, &c., which bleeds? *A. Y. E.*

OSTEOMELES ANTHYLLIDIFOLIA.—This plant, referred to on p. 522, is in cultivation at Kew, where it is grown out-of-doors in summer, and wintered in a cold greenhouse. It forms a loose shrub, clothed with elegant silvery-green pinnate leaves (evergreen at Kew), and in spring it produces numerous bunches of white Hawthorn-like flowers on the ends of short lateral branches. The fruit is like that of *Coton-easter*. A figure of the Kew plant will shortly be published in the *Botanical Magazine*. Meanwhile, the following note, from Hemsley's *Botany of the Challenger*, will interest those who have obtained this plant either from Kew—where it has been propagated and sparingly distributed, or from M. Lemoine of Nancy, who includes it in his catalogue of new plants. For its introduction we are indebted to M. Cornu, of the Jardin des Plantes, Paris, who raised it from seeds sent from Yunnan by Delavay:—"Osteomeles is an outlying genus of Rosaceae, of which there are about eight or ten species inhabiting the Andes, and *O. anthyllidifolia*, which is restricted to Polynesia. This was first collected in the Sandwich Islands by Menzies, and the genus was founded upon it (Lindley in *Trans. Linn. Soc.*, xiii., p. 98). It is the only one with pinnate leaves, and is thus of very different aspect from the Andine species. Besides Cuming's Pitcairn Island specimen, and numerous specimens from the Sandwich Islands, there are in the Kew herbarium two or three from the Bonin Islands, and one from Maingai, so that it practically ranges across the Pacific. The Haw-like fruit is described as being of a pleasant flavour." Since this was written the plant has been found wild in Japan and China. A plant is being tried at Kew out-of-doors against a wall, to test its hardiness. *W. W.*

PRIMULA FLORIBUNDA.—At the Birmingham Botanical Gardens this lovely winter-blooming *Primula* is at the present time to be seen in full beauty, a quantity of plants having been in bloom in the conservatory for four or five weeks past, and will continue flowering throughout the winter. These plants are from seed sown in February last, and grown on until they could be placed in cold frames through the summer, and the plants, being perennial, can easily be kept growing on from year

to year. It needs protection from frost in winter, else it is of a hardy character, of dwarf habit, and yielding through the winter months a profusion of rich golden-yellow small flowers in clusters on short stems. Size can readily be obtained from these plants, so that strong-flowering plants can easily be obtained in a few months. *W. D.*

COMET ASTER: GIANT WHITE.

ANOTHER form of the Comet Aster strain previously introduced by Mr. C. Lorenz, of Erfurt, and said to be an improvement. The flower-heads are larger, the florets broader; the central florets are at first slender, and yellow in colour, but subsequently become white. For the illustration, we are indebted to Mr. Lorenz.



FIG. 103.—COMET ASTER: GIANT WHITE.

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 14.—The meeting in the Drill Hall James Street, Westminster, on Tuesday last, was held under very unfavourable weather. The day was damp and foggy, and in the building itself it was almost impossible to see the proper colours of the flowers. Long before the time for closing—4 P.M., the gas was lit throughout the building, and its appearance had every indication of midnight, rather than early afternoon. The principal exhibits were Chrysanthemums and Orchids, and in these were found most attraction, whilst a good collection of varieties of Celery from the Society's gardens at Chiswick, was also favoured with much attention.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. R. Owen, H. Herbst, C. T. Druery, Geo. Stevens, W. C. Leech, F. Ross, J. Jennings, C. Jeffries, W. Bain, W. Furze, T. Baines, H. Cannell, J. D. Pawle, H. Bennett-Poë, E. Mawley, G. Paul, J. H. Fitt, H. H. D'Ombain, C. E. Pearson, Owen Thomas, C. E. Shea, and Peter Barr.

Two competitive classes for Chrysanthemums had been arranged, one for a collection of cut blooms, distinct, each bloom to be shown as cut from the plant, without dressing, and to stand well above the moss covering the box, and open only to amateurs. There were six entries, and the 1st prize went to Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, for a good collection of Japanese and incurved blooms. The prize was first given to a larger and fine collection put up by Mr. J. F. McLeod, gr. to J. Spencer Morgan,

this variety, and all the others were exceptionally large. Mr. Geo. Wythes was 2nd with good blooms of smaller varieties.

Mr. Robt. Owen exhibited a capital stand of new varieties of Chrysanthemums, including some first-rate blooms. Awards of Merit were given to the following:—Wilfred Marshall, an English seedling Japanese, incurved, having extremely broad florets, large flower of a lovely pale yellow colour, centre not very full, as shown; Rose Wynne, another English seedling, having very broad florets, white, marked with red, a Japanese incurved; Golden Wedding, an American seedling Japanese of very fine rich yellow; Niveus, another white one from America, flower very full, and florets large; Robert Petfield is an English seedling incurved, and Lord Rosebery also, the latter very deep, and both promising to make capital additions to the section; John Bunyan is a capital large Anemone variety. The colour of bloom is yellow, and the cushion is slightly darker than the outer florets.

Mr. R. Parker, Impney Gardens, Droitwich, had a group of Chrysanthemum blooms, very tastefully arranged with an abundance of Fern and Ficus. The blooms were good and representative of the different sections (Silver Banksian Medal). Another collection of cut blooms came from Mr. C. E. Shea, The Elms, Fooks Cray, including a few blooms of the lovely white Japanese with creamy centre, named *Mlle. Thérèse Rey*, which was granted an Award of Merit. Many more of the newer ones were also included (Bronze Banksian Medal).

Messrs. Jas. Veitch & Sons, Chelsea, put up a grand group of Chrysanthemum plants, carrying capital blooms of the newer and choicer varieties, *Chas. Davis*, *Golden Wedding*, and *Mlle. Thérèse Rey*, received Awards of Merit and Silver Flora Medal.

Mr. William Slogrove also staged some cut blooms of first-rate excellence, including about half-a-dozen blooms of *Thunberg*, as good as ever we saw it (Cultural Commendation and Bronze Banksian Medal).

Mr. W. Wells, Earlwood Station, near Redhill, showed another collection, which included a new seedling Anemone flower named *Mrs. C. J. Salter* (Award of Merit). The flower is very pretty, of orange-buff, and possessing a good cushion (Bronze Banksian Medal). Another collection of good blooms was staged by Mr. Geo. Wythes (Silver Banksian Medal). Messrs. James Carter & Co., High Holborn, had two Chrysanthemums, one called *Rosy Giant*, and the other *Mrs. Christopher Moore*, but no award was made.

Messrs. H. Cannell & Sons, Swanley, had a large stand containing a good number of Chrysanthemum blooms, well grown and of the newer and seedling varieties, including two that were distinguished by an Award of Merit, also shown by other exhibitors, viz., *Golden Wedding* and *Duke of York*. This latter variety, which was exhibited only by Messrs. Cannell, is a large Japanese magenta, with silver reverse. Also a quantity of flowers of *Zonal Pelargoniums*, arranged in bunches, including the fine double scarlet *Raspail Improved*, *New Life*, a small scarlet double, with petals striped with white; and a lot of the best of the new single varieties; *Eucharis*, *Albion*, and *White Lady* are all good whites; *Maud of Wales*, the most lovely of the pinks; *Madame de Bordeville* and *A. F. Wootton*, very fine salmon-pinks; *King of the Purples*—the best purple, and *Sunbeam*, *Miller's Favourite*, and *Hyacinth*, bright and good scarlets; *Etoile de Lyon* is one of the shaded varieties, very delicate rose, with shaded white centre (Silver Flora Medal).

Messrs. Jas. Veitch & Sons, Chelsea, obtained a First-class Certificate for *Dracæna Jamesii*, a pretty ornamental narrow-leaved and highly-coloured specimen. A basket containing a quantity of the dwarf-growing winter-blooming *Begonia John Heal* was also shown (Vote of Thanks); also a plant of a new tuberous winter-blooming *Begonia* called *Mrs. John Heal*, and obtained by crossing one of the tuberous varieties with *B. socotrana*; the plant was blooming freely, flowers were scarlet, fair size, and the plant about 12 inches high—a very interesting and promising break.

Sir Trevor Lawrence, Burford Lodge, Dorking, showed a basket containing plants in flower of the delicate and pretty *Primula Forbesii*; the spikes of small pink flowers are produced in wonderful profusion, and are about 18 inches to 2 feet high (First-class Certificate).

Messrs. Hugh Low & Co. were awarded a First-class Certificate for an ornamental *Croton*, named *Croton Russellii*.

Mr. J. Crook, gr., Forde Abbey, Chard, showed blooms of what was described as a seedling *Primula*

Esq., Dover House, Roehampton, but it was afterwards noticed that this exhibitor had duplicated one or more varieties, instead of each being distinct. The collection was therefore disqualified. It consisted of two large boxes of Japanese blooms, one of incurved, and one arranged with Pompon and decorative varieties exhibited in sprays. The 2nd prize was awarded to Mr. Thos. Osaman, Ottershaw Park, Chertsey, Surrey, who had also a meritorious collection.

In the other class, which was for eight new varieties, distinct, sent out in 1890, 1891, or 1892, the 1st prize was taken by Mr. W. Slogrove, Gatton, Reigate, who staged magnificent blooms of *G. C. Schwabe*, *Excelsior*, *Charles Davis* (Award of Merit), *R. Flowerday*, *Mrs. Libbie*, *Wm. Seward*, *Mrs. Harman Payne*, and *Lord Brooke*. The latter was the largest bloom we have seen exhibited of

obconica. Mr. W. C. Rossiter, Paignton, had a spray of a gold-variegated Rosemary.

Mr. Walter Salmon, Ivy Cottages, Elder Road, West Norwood, had a stand of tastefully-arranged bouquets, wreaths, &c. (Bronze Banksian Medal).

Mrs. Crawford, Reigate, was awarded a Bronze Banksian Medal for a collection of Chrysanthemums.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. J. O'Brien (Secretary), Dr. M. T. Masters, F.R.S.; C. J. Lucas, T. Statter, E. Hill, H. Williams, H. Ballantine, and T. W. Bond.

The Hall was brightened by several good groups of Orchids, one of the best and richest in good things being that contributed by R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Henry Chapman), and which was specially rich in rare Cypripediums, which were arranged with specimens of *Cattleya labiata*, *Sophronitis grandiflora*, &c. Foremost among the Cypripediums stood *C. insigne* Sanderæ, and with it was *C. i. Ernestii*, of which it is the best of praise to say that it very closely approaches *C. i. Sanderæ*. It has, however, a few purple dots on the white of the upper sepal, and the tint of its clear yellow flowers is somewhat darker. Other fine Cypripediums in Mr. Measures' group were *C. insigne*, Cambridge Lodge variety, *C. × Celenus* (insigne Chantini × villosum), *C. × Carrierii* (venustum × superbiens), *C. insigne radiatum*, *C. × Diana* (barbatum superbum × Spicerianum), *C. × Indra* (callosum × villosum), *C. × Bellona* (villosum × Spicerianum), *C. × Leeanum*, with seven flowers, and *C. Spicerianum* with ten flowers. The group was awarded a Silver Flora Medal.

Messrs. F. Sander & Co., St. Albans, staged a good group in which the varieties of Cypripedium × Leeanum were very fine. *C. × Leeanum* James Hamilton (Award of Merit), was perhaps the richest coloured form of it yet shown, and its flowers were of perfect shape. *C. × Leeanum virgale* was a very fine form of the *C. × Leeanum giganteum* type. Other Cypripediums in Messrs. Sanders' group were *C. × Leeanum excellens*, *C. × L. superbum*, *C. × L. reticulatum*, *C. × picturatum*, *C. × Burberryanum*, *C. × Alcides superbum*, *C. × Joseph Donat*, *C. × polystigmaticum*, *C. Chamberlainianum*. With these were arranged some three dozen plants of *Cattleya labiata*, *C. gigas* Sanderiana, *Lælia autumnalis alba*, the new and pretty white and crimson *Cymbidium pulcherrimum*; the pretty little white *Dendrobium Fairfaxii*, *Lycaste Skinnerii* alba, *Calanthe × Sandhurstiana*, *C. × Cooksoni*, *C. × rosea*, *Odontoglossum Humeum*, *Restrepia antennifera aurea*, &c. (Silver Flora Medal).

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., also had a fine group in which the beauty and utility of the hybrid Cypripediums was well exemplified. Among them were *C. × Harrisianum superbum*, *C. × Dauthieri* and its bizarre variety, *C. × D. striatum*, *C. Spicerianum*, *C. × Arthurianum*, *C. × Osbornii*, *C. insigne* Wallacei, *C. i. violaceo-punctatum*, *C. × Enfieldense*, *C. × Huybrechtianum*, *C. × vexillarium superbum*, *C. javanicum majus*, *C. tonsum*, *C. × selligerum rubrum*, and that noble variety *C. × Pitcherianum*, Williams' variety. With these were skilfully arranged forms of *Cattleya labiata*, *C. Harrisianae* delicata, *Odontoglossum asperum*, *O. Harryanum*, *O. Rozellii*, varieties of *Lycaste* Skinneri, and plants of the pretty pink-spotted *Compæretia macrolepton* (Silver Flora Medal).

Messrs. Hugh Low & Co., Clapton, staged an interesting group of Orchids, the central plant being one of their new *Stanhopea Lowii*, a striking species of the *S. ecoriata* section, and differing from their pure white *S. Amesiana* in having a purple-spotted interior to the hypophylla, and buff sepals and petals (Award of Merit). Another magnificent plant was one of *Cattleya Massiana*, with three flowers, resembling *C. Hardyana*, but with white and crimson-marbled sepals and petals. The forms of *Miltonia Rozellii*, too, were fine, and the pretty *Cynorchis Lowii*, *Lælia purpurata Russelliana*, *Cypripedium bellatulum*, and forms of *Cattleya labiata* appeared to advantage (Silver Banksian Medal).

Messrs. W. L. Lewis & Co., Chase Side, Southgate, N., sent a group of Orchids, among which *Cattleya maxima*, Lewis' var.; forms of *C. Bowringiana*, *C. Warcewiczii*, a very large light variety; *Dendrobium Phalaenopsis Schroderianum*, with richly-coloured flowers; *Trichosma suavis*, *Cynorchis grandiflora*, and various Cypripediums, were good (Silver Banksian Medal).

Messrs. Jas. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, contributed a selection of

their new hybrid Orchids, the most remarkable of which was *Lælio-Cattleya × Statteriana* (*Lælia Perrinii* × *Cattleya labiata*), a very fine novelty; the flowers are as large as those of *C. labiata*, which it resembles much in the form and colour of its sepals and petals; the broad and showy labellum gives evidence of *L. Perrinii* in the deflected lip of the front lobe, which is of that rich dark purple seen in *L. Perrinii*; the base of the lip is white, with crimson lines—the whole flower very showy and attractive (First-class Certificate).

Another fine exhibit of Messrs. Veitch was *L.-C. × Pallas*, which had previously been awarded a First-class Certificate, but the plant now bearing three flowers, it seemed even better than before; it is the result of crossing *Lælia crispata* with *Cattleya Dowiana*, and its long and beautifully crimped lip, of the colour of that of *C. Dowiana*, is very striking; *Cypripedium × Euryades* (*Leeanum* × *♀*, *Boxalli* × *♂*), *C. × Cænone* (*Hookeræ* × *superbiens* × *♂*), *C. × T. B. Haywood*, *C. × microchilum*, and *C. × Leeanum* were also staged in good form by Messrs. Veitch.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed a grand hybrid in *Cypripedium × southgatense superbum*, which was readily accorded a First-class Certificate. It is *C. bellatulum × Harrisianum*, and its rich yellowish-white flowers, profusely blotched with the darkest purple, make it among the very showiest of its class. *C. × Swinburnei*, Stand Hall var. (Award of Merit), a great improvement on the original; *C. × Ariadne* (*Spicerianum* × *selligerum majus* × *♂*), *C. × rubescens* (*cananthe superbum × Boxalli*), and a spike of a fine form of *Lælia tenebrosa* were also shown by Mr. Statter.

E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, showed *Cypripedium × Ashworthii* (*C. Leeanum superbum × selligerum majus* × *♂*), and which seemed to be a remarkable improvement on *C. × Leeanum*, and very distinct and handsome, although the traces of the male parent, *C. × selligerum*, were not apparent. But the suppression of characters when hybrids are used for again crossing is not uncommon. Its upper sepal was very large, and pure white, the base emerald-green, with a few violet spots, the rest of the flower like a large dark form of *C. × Leeanum* (Award of Merit).

Frederick M. Burton, Esq., Highfield, Gainsborough, showed four hybrid Cypripediums. F. S. Moseley, Esq., Flaxley Lodge, Avenue Road, N.W., showed *Cypripedium × Regnaldianum* (insigne × *Siamense*), and *Lælia Dormaniana*. E. H. Woodall, Esq., St. Nicholas House, Scarborough, sent a fine plant of *Cypripedium insigne* var. *albo-purpureum* of the *C. i. Chantini* section; G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester, showed a fine pan, with a dozen flowers of the white form of *Pleione maculata* (Award of Merit).

Mr. Fitt, gr., Penshanger, Hertford, exhibited *Cypripedium × Leeanum*, and a plant from the same seed-capsule which had reverted very near to *C. Spicerianum*; J. Forster Alcock, Esq., Northchurch, Berkhamsted, sent *Odontoglossum Wilckeanum*; G. Hardy, Esq., Pickering Lodge, Timperley, Cheshire (gr. Mr. W. Holmes), sent spikes of good forms of *Cattleya labiata*, and a variety of *Lælia anceps*, probably *L. a. Amesiana*.

Walter C. Clark, Esq., Orleans House, Sefton Park, Liverpool, sent flowers of *Cypripedium × Wallærtianum aureum*, and *C. × Harrisianum* (*Harrisianum* var. × *Leeanum superbum* × *♂*); and Messrs. Linden, l'Horticulture Internationale, submitted to the committee a drawing of their new hybrid *Lælio-Cattleya × Cawenbergiana*, a very handsome plant.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. Jno. Lee, T. Francis Rivers, G. Tabor, T. J. Saltmarsh, W. Warren, J. A. Laing, H. Balderson, F. Q. Lane, J. Smith, R. Hogg, H. J. Pearson, and J. Willard.

The only award made by this committee was that of a Silver Banksian Medal to Messrs. H. Cannell & Sons, Swanley, for a grand exhibit of Potatoes, including seventy dishes; one of the tubers of a variety named Bruce weighed as much as 2½ lb. Mr. T. Edmunds Uckfield, Sussex, sent a dish of Apples, Edmunds' Seedling. Mr. J. Godfrey, Exmouth, sent some examples of the second growth which has taken place on Apple trees this year; such varieties as Worcester Pearmain, Grenadier, and Lord Grosvenor had fruit quite half grown.

J. T. Hopwood, Esq., Ketton Hall, Stamford (gr. Mr. W. H. Divers), showed a dish of Barnack Beauty Apples. A dish of Monmouthshire Beauty Apples came from Mr. W. Jenkins, The Willows,

Abergavenny (Vote of Thanks). Mr. J. Crook, Forde Abbey Gardens, had a dish of Coe's late Red Plum. A basket of good specimens of New Wonder Apples, grown within the 5 miles' radius, was shown by Mr. W. Roupell, Harvey Lodge, Roupell Park, S.W. Mr. J. H. Ridgewell sent tubers of four seedling Potatoes; and tubers of two others were from Mr. C. W. Howard, Bridge, Canterbury. A dish of Ladies'-finger Bananas was exhibited by Mr. John Fitt, Penshanger, Hertford; and M. W. C. Leach, Albury Park Gardens, showed some of his Leach's All the Year Round Parsley, which appeared to be very robust and large. An interesting collection of Celery, embracing two or three sticks each, of twenty-three varieties, was from the gardens of the Royal Horticultural Society at Chiswick.

Lecture on Chrysanthemums.

In the afternoon, Mr. R. Parker of Impney Gardens, Droitwich, read a paper on "Chrysanthemums." In commencing what proved to be a most practical paper on the culture of the plant, Mr. Parker compared the newer varieties with their parents, declaring that improvement had been achieved, not only in colour and size of blooms, but in habit of plant also, instancing many of the new ones as being very much more dwarf than the varieties they supersede. Small growers next received attention, and they were advised to grow only such a number as they could thoroughly look after; and further advice was given as to the propagating and culture of the plants. The lecturer recommended small plants with a large number of blooms upon them, in preference to tall plants with only a few, and these large ones. Mr. Parker then dealt with the culture of Chrysanthemums for exhibition, and said that success followed close attention to detail, and attention at the proper time, and was not the reward of some great secret that has been learned. They should be struck in December or January, and should be potted into good open compost, with but little manure. Half-inch bones were condemned either for soil or drainage, but crushed ones might be used with moderation. The lecturer recommended no particular kind of manure, as he believed that success was not obtained by using this or that, but by the proper and judicious application of that chosen. Chrysanthemums were frequently checked by chemical manure given in undue quantity. Potting should be made firm, and in moderately rich soil, and good, well-ripened, short-jointed wood would result. The plants might be top-dressed two or three times, and richer compost could then be given them. The plant required no feeding whatever until after the buds had set. Mr. Parker summarised as follows: Never coddle the plants at any period of their growth, never allow the roots to become dry, syringe freely on all bright days, use good soil, but not too rich in manure, and pot firmly.

Some further remarks were made by Mr. Owen Thomas, Rev. W. Wilks, and others.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 7, 8.—On the occasion of the great November show, the Floral Committee of the above, in order to relieve the pressure of work on the opening day, November 7, met at the Royal Aquarium on the above dates, Mr. R. Ballantine in the chair, a very large number of subjects being staged for consideration, and they occupied the committee for a considerable time. First-class Certificates were awarded to Golden Wedding, an American seedling, rich golden yellow in colour, the petals broad and long, deep and fully double, a Japanese variety of great excellence from Mr. W. J. Godfrey, nurseryman, Exmouth. This variety was also shown by other exhibitors, but as it is the rule of the National Chrysanthemum Society the Certificate should be awarded to the exhibitor of the best blooms, it went to Mr. Godfrey, whose examples were very fine. The same award was made to single Japanese Elsie Neville, a remarkably fine and striking variety, bright orange-red, with a golden disc, from Mr. W. Seward, The Elms, Hanwell, who had other seedlings of his own raising, of a decidedly promising character. To Pompon Anemone Mrs. C. J. Salter, somewhat large in size, and self-coloured, golden-buff; from Mr. W. Wells, Earlswood Nurseries, Redhill, Surrey. To Japanese Colonel Chase, an American variety, delicate blush, with a deep citron centre, very fine and distinct, from Mr. E. Beckett, gardener, Aldenham House, Elstree, Herts. To G. W. Childs, a crimson

Japanese from America by Mr. H. J. Jones, Lewisham. To Japanese Rose Wynne, a large broad-petalled delicate pink variety, a little thin in substance. To Anemone-flowered John Bunyan and W. W. Astor, two very promising buff-coloured varieties, quite distinct, from Mr. Robert Owen, nurseryman, Maidenhead. Also to Carnation Mrs. Leopold de Rothschild, an improved Miss Jolliffe, almost a perpetual bloomer, excellent habit, very free, the flowers opening pale pink, deepens with age to pinkish-rose, very fragrant, and does not split its calyx until the flowers become old, and then not to any great degree, from Messrs. W. Cutbush & Son, nurserymen, Highgate. A bloom of a very fine large-flowered Japanese Anemone, named Ernest Gaille, was shown by Mr. Ives, gr. to E. C. Jukes, Esq., Hadley Lodge, Barnet, will be certain to secure a Certificate when two blooms are shown; Duke of York, a large incurved Japanese, amaranth-crimson, with a silvery reverse; from Messrs. H. Cannell & Sons, Swanley, narrowly escaped obtaining a Certificate; William Mease, a large Japanese, like W. Tricker, but not so bright, the committee wished to see again. A Commendation was given to a very fine bright-coloured spike of *Renanthera coccinea*, from Mr. Joad of Patchbury.

SOUTHAMPTON CHRYSANTHEMUM.

NOVEMBER 7, 8.—The committee of the Royal Southampton Horticultural Society again held an autumn exhibition in the Victoria Hall after a lapse of several years, which had occurred from lack of funds. From the exhibitors' point of view the show was a success, and we hope it may so prove financially. Cut blooms was the more important part of the show. Mr. Ingfield, gr. to Sir J. Kelk, Bart., Tedworth, Marlborough, won easily the 1st prize for twenty-four cut blooms, half of which were Japanese and half incurved; and Mr. Hughes, gr. to A. Baring, Esq., Norman Court, was 2nd.

The best twenty-four, not to consist of more than two of any one variety, were those shown by Mr. Ingfield, 1st; 2nd, Mr. Hughes. The first-named was likewise the winner of the 1st prize in the classes for twelve incurves and twelve Japanese varieties; with Mr. Hughes as 2nd in each.

The best specimen-plants were shown by Mr. Rose, gr. to Dr. Alden, The Firs; and by Mr. Caer, gr. to W. A. Gillett, Esq., Fair Oak Lodge.

Mr. Busby, gr. to F. Willan, Esq., Thornhill Park, had the best group of Chrysanthemums.

A creditable group of miscellaneous plants was shown by Mr. Peel, gardener, Sidford Lodge. Fruit was abundantly shown.

THE BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL.

NOVEMBER 8.—The thirty-fourth annual exhibition of this well-known Society was opened on the above date at the Town Hall, Streatham, by the president, T. Gabriel, Esq., J.P., and Mrs. Gabriel. The numerous special prizes attracted keen competition. Those offered by Miss Sherwood for baskets of Chrysanthemums, &c., were awarded to Miss Ethel Whittard, Mrs. Strugnell, and Miss C. Hicks. The *Gardeners' Magazine* Medal went to Mr. Cherry, gr. to Mrs. Gabriel, Norfolk House, for six plants of Chrysanthemums. The prizes offered by the president for broad-petalled incurved Japanese Chrysanthemums were gained by Mr. Mursell (gr. to Mrs. Burton), Mr. T. Stevens (gr. to B. F. Smith, Esq.), and Mr. Howe (gr. to H. Tate, Esq.), in the order named. Those offered by Mrs. Fletcher Bennett for collections of vegetable went thus:—Mr. Pearce (gr. to Mrs. Bennett), Mr. T. Stevens, Mr. Ouseley (gr. to R. Lyell, Esq.), and to Mr. Cherry. The prizes offered by the same lady for Black Alicante Grapes, were won by Mr. Howe, Mr. Pearce, and Mr. Guyett (gr. to Thos. Gabriel, Esq., J.P.). The special prize offered by C. T. Cayley, Esq., for a group of Chrysanthemums, was awarded to Mr. Mursell.

For twelve cut blooms of Japanese Chrysanthemums exhibited as grown, the prizes offered by J. Margetson, Esq., were won by Mr. Howe, Mr. T. Stevens, and Mr. Mursell. The special prize offered by Messrs. John Peed & Son for Primulas went to Mr. Mursell. Messrs. Peed also offered prizes for six dishes of Potatoes, which were awarded to Mr. Pearce and Mr. Ouseley. The special prizes for Palms offered by Mr. J. W. Silver were gained by Mr. Guyett and Mr. Ranson, gr. to John T. Gabriel, Esq. The special prizes for Black Hamburgh Grapes offered by N. N. Sherwood, Esq., were awarded to

Mr. Mursell, Mr. Surman (gr. to W. Glover, Esq.), and Mr. Ouseley.

The numerous prizes of the society were the subjects of keen competition, and the exhibits of Chrysanthemums, Orchids, stove plants, Ferns, fruits, and vegetables were remarkably fine.

The Certificates of the National Chrysanthemum Society were awarded to Mr. Cherry and Mr. Howe. The society's Certificates were given to W. Roupell, Esq., for Muscat Grapes and Cox's Orange Pippins. Awards of Merit were given to Dr. Strugnell, for six cut blooms of Japanese Chrysanthemums; and to Messrs. John Peed & Son for bouquets and a collection of Apples; also to Mr. J. W. Silver for floral designs, to Mr. Ranson for *Cattleya labiata* superba, to Mr. Guyett for *Asparagus deflexus*, and to Mr. Owden for six cut blooms of *Vivian Morel*. The judges were Messrs. James Hudson, Charles Gibson, W. Bates, and G. W. Cummins.

TORQUAY HORTICULTURAL.

NOVEMBER 8.—This exhibition was held on the above date in the Bath Saloons. Owing to a variety of circumstances, and especially the great reduction of the number of prizes in the cut-bloom classes, there was a great falling off in the competitions, but the nurserymen of the locality came to the rescue of the Society, making an excellent display. For cut blooms, Mr. Foster, gr. to Hammond Spencer, Esq., was 1st, with a splendid lot of blooms in the class for eighteen Japanese and eighteen incurved. Mr. Veale, gr. to the Rev. A. H. Simons, was very successful in most of the classes, staging a lot of very creditable blooms.

The groups were not quite so good as usual, probably owing to the very dry season, and very trying for the Torquay district.

Fruit and vegetables were very good.

BROMLEY (KENT) DISTRICT CHRYSANTHEMUM.

NOVEMBER 8.—The exhibitors were numerous and tested the staging accommodation of the hall to its fullest extent, an overflow of vegetable exhibits being shown in the corridor.

The exhibits were generally speaking, of unusual excellence. This was particularly noticeable in the three classes devoted to Chrysanthemums grown naturally, J. Blackburn obtaining 1st prize in each class. Mr. Shoesmith, gr. to Mr. Hodgson, Croydon, succeeded in obtaining the Silver Cup presented by the Society for thirty-six blooms, distinct varieties, eighteen incurved and eighteen Japanese. This class was productive of keen competition and unusual interest. The 1st prize for a collection of Chrysanthemum plants, grouped for effect, within 50 square feet, was obtained by G. Buister, whose grouping was very effective. A pleasing variety to the brilliant colours was afforded by the groups of flowering and foliage plants; the competitors for this class were not very numerous, but that obtaining 1st prize, exhibited by J. Lyne, was the most artistic both in arrangement and selection.

The light at the Grand Hall was very defective, which must have added materially to the arduous duties of the judges.

BATH.

NOVEMBER 8, 9.—At this show plants generally were not quite so numerous as at previous shows, nor were they up to the usual standard of excellence.

For six Chrysanthemum plants, distinct varieties, and grown standards, Mr. Southard, gr. to W. J. Brown, Esq., was 1st, with creditable specimens. The same exhibitor had also the finest specimen plant in a well-trained and flowered plant of Mrs. George Rundle, about 6 feet across the flowers, of fine size, evenly distributed, and fresh. The Medal of the National Chrysanthemum Society was deservedly awarded to this exhibit. For six plants for conservatory decoration, 1st Mr. Southard, staging dwarf, well-trimmed plants of Princess of Wales, Mrs. Dixon, Dr. Sharp, Blanche Pigny, Mrs. G. Rundle, and Lord Wolseley.

Groups of Chrysanthemums.—Out of three groups, each covering a space of 12 feet square, Mr. W. Davis, gr. to S. P. Budd, Esq., was a good 1st. Mr. Tate, gr. to W. Humphrey, Esq., was 1st for a group of miscellaneous plants edged with *Panicum variegatum* and Maidenhair Fern, and tastefully arranged.

Mr. R. B. Cater was easily 1st for an effective bank

of miscellaneous plants on a length of staging consisting of Crotons, Caladiums, Dracænas, Pandanus Veitchii, various Palms, Orchids, Maidenhair Fern, and with the front of the staging completely covered with the trailing shoots of *Panicum variegatum*. It had a very pretty effect. Among the Orchids employed in the arrangement were well-flowered pieces of *Dendrobium Phalaenopsis Schroderianum*, *Odonoglossum grande*, *Cypripedium insigne* (having sixteen good slippers), and *Cymbidium Mastersii*, with ten of its beautiful white flowers open.

Orchids.—For six plants, of not less than three varieties, 1st Mr. J. T. Holmes, with three plants of *Cattleya labiata*, two of these having sixteen and seventeen well-developed flowers each, of good form and colour; *Dendrobium formosum*, *Cattleya gigas*, with eight flowers, and *C. Bowringiana* having four spikes supporting from five to six brightly-coloured flowers each. Mr. R. B. Cater was 2nd, his half-dozen plants including a finely-flowered *Oncidium Forbesii*, having two spikes—one containing twenty-three large flowers, *Dendrobium Phalaenopsis Schroderianum*, and *Vanda cœrulea* having a spike of its beautifully sky-blue flowers (nine) open. Mr. Holmes was 1st for a single specimen, showing a well-flowered plant of *Cattleya labiata*.

Table Plants were shown largely and well. 1st, Mr. Strugnell, gr. to W. H. Long, Esq., M.P., Rood Ashton Park, Trowbridge, showing two Crotons, two Pandanus Veitchii, and two Dracænas, about 20 inches high each, in 6-inch pots, being model plants for table decoration in every way.

Cut Flowers.—These made a fine display. The chief prize for twenty-four blooms of Japanese Chrysanthemums, distinct, being £5. Five good stands of blooms were put up in this competition. Mr. John Aplin, gr. to W. Meath Baker, Esq., was 1st, with large, excellent blooms; and Mr. P. Mann, gr. to W. H. Laverton, Esq., Leighton House, Westbury, was a good 2nd; and Mr. Robinson, gr. to Lord Justice Lopes, Westbury, was a close 3rd.

Eight stands of twelve Japanese, distinct, were staged, Mr. P. Mann securing the premier position with uniformly large, excellent blooms.

Incurved varieties, twenty-four blooms, distinct varieties.—Out of seven stands staged, Mr. John Aplin secured 1st place with good all-round blooms of Lord Alcester, John Lambert, Lord Wolseley, Golden Empress, Empress of India, Lady Dorothy, Hero of Stoke Newington, &c. Mr. Copp had the best stand of twelve blooms, distinct varieties, in a good competition. Mr. Robinson had the best dozen blooms of large-flowered Anemones.

Premier Bloom in the Show.—A bloom of Mrs. Robinson King secured the National Chrysanthemum Society's Medal for Mr. John Aplin.

Fruit made a fine show of itself, the Grapes, Apples, and Pears shown in the several classes set apart for them being everything that could be desired.

Grapes.—Four stands of four bunches, in not less than two varieties of Grapes, were staged in competition for the premier prize in the Grape classes. Mr. William Taylor, gr. to Mr. Alderman Chaffin, Bath, taking 1st honours with Muscat of Alexandria, medium-sized compact well-coloured bunches, and fine specimens of Black Alicante, two bunches of each; Mr. William Nash, gr. to the Duke of Beaufort, Badmington, Chippengham, was a good 2nd.

In the Black Alicante three-bunch class, three grand clusters—the centre one being about 8 lb., and the other two about 5 lb. and 6 lb. each—were shown from the vineries of Miss Marriott, Henrietta Park, near Bath. The berries were of good average size, and beautifully coloured. Mr. Nash was 1st in the class for any other black Grape than Alicante, with perfect bunches of Gros Colmar; Mr. Taylor being 2nd, with Gros Maroc.

Three stands of Muscat of Alexandria were shown, but the bunches were loose, and the berries somewhat shrivelled.

Apples and Pears (about 240 dishes of the former, and 55 dishes of the latter), were shown in fine condition, the fruits being of good size, well selected, perfectly free from blemish, even and highly coloured. Out of twenty-five exhibits of four dishes, six fruits to a dish, Mr. H. Taylor was 1st, with perfect fruits; Mr. E. Hall had the best out of twenty-nine dishes, eight fruits to a dish, staging grand uniform well-coloured fruits of King of the Pippins. Mr. John Ricketts, in a competition of forty-seven single dishes of culinary varieties, was 1st with grand fruits of Emperor Alexander. Out of seventeen dishes of ripe Pears, eight fruits to a dish, Mr. E. Hall was a good 1st with extra fine fruits of Beurré Diel.

Collections of Six Kinds of Dessert Fruit (Pine excluded), were shown by Mr. Nash, Mrs. Gouldsmith's gardener; and Mr. Gibson, gr. to Earl Cowley, Draycot House, Chippenham, who took the prizes in that order.

Miscellaneous Exhibits.—Messrs. George Cooling & Sons, Bath, and Mr. A. Walters, Kensington Nurseries, Bath, contributed good banks of decorative plants, including Heaths, Crotons, Dracænas, Orchids, &c., and which, being tastefully arranged, had a very good effect when viewed in connection with the banks of cut flowers, &c., close by.

ROYAL MIDLAND FARM-ROOT AND VEGETABLE SHOW, LEICESTER.

NOVEMBER 8, 9.—The well-known firm of Messrs. Harrison & Sons held their annual show on the above dates, by kind permission of the Leicester Corporation, in the Market Hall, and liberal prizes are offered by the firm for various roots and vegetables grown from seed supplied by them. Fine heads of Harrison's Leicester Red Celery, and Harrison's Early Rose, an excellent early kind, were shown. The competition was strong in this class, and in that for the Carrot, the latter being of very fine quality, especially the Selected Intermediate. Of this form of Leeks it would be impossible to speak too highly. The whole of the exhibits of the sixteen competitors were of high order of merit. There were good specimens shown of Autumn Giant Cauliflower, but the competition was not quite so strong in this class. Savoy as usual were represented in great numbers, and some were very large. Brussels Sprouts were also of excellent quality, and the competition was keen, as it was in the competition for Onions and Beetroot. Amongst the varieties of Beetroot might be seen some fine-shaped specimens of Cheltenham Green-top. Potatoes, of course, take a prominent part in the show, and some very fine tubers were staged by various exhibitors.

Farm-roots were of very fine quality, considering the unpropitious season, but we can scarcely suppose that the samples seen were indicative of the usual run of the crops.

GUILDFORD CHRYSANTHEMUM.

NOVEMBER 8, 9.—The ninth annual exhibition was held in the County and Borough Halls, at Guildford, on the above dates, and was an improvement on all previous exhibitions. This Society is affiliated with the N. C. C. and is managed by an efficient staff. There were three non-competitive exhibitors, viz., Messrs. Hart & Son, who showed fruit, flowers, &c., vegetables, all excellent of their kind, and a big group of plants, consisting of Palms, Crotons, Dracænas, Ferns, mixed with flowering plants in variety. The other exhibitors were Mr. Pullen and Mrs. T. J. Hireson, who showed stands of floral ornaments, fruit, &c.

In the class for the best group of miscellaneous plants, the prizes went to Mr. Gilbert, gr. to the Rev. J. R. Flood; Mr. Cook, gr. to the Rev. F. Poynton; and Mr. Lampard, gr. to J. Anderson, Esq., in the order named.

The contest for the best Chrysanthemum groups was exceedingly keen, the groups of plants showing good cultural skill, and they were effectively arranged. The 1st prize, a Cup, value 5 guineas, was awarded to Mr. Paddon, gr. to Col. Ricardo, and Mr. Cook taking 2nd. Mr. Pullinger, gr. to General Waterfield, and Mr. Lampard were respectively 1st and 2nd in the smaller group class.

The best feature of the show was the cut blooms, and the 1st prize for twenty-four Japanese, distinct varieties, for which there were six entries, was taken by Mr. Paddon, with some of the best old and new varieties. Mr. Nash, gr. to C. J. Ramsden, Esq., showed the best twelve blooms of Japanese, Mr. Paddon being 2nd. For six blooms of Japanese, there were eight competitors, Mr. Barrow, gr. to Mrs. Hugonin being 1st, and Mr. Clark, gr. to F. Arbuthnot, Esq., 2nd. Two competed in the class for eighteen incurved varieties, and here also Mr. Paddon was 1st with excellent blooms, with Mr. Powell as 2nd. The first-named exhibitor was likewise 1st in the class for twelve blooms, and Mr. Tucker 2nd. In the smaller classes the competition was keen, and rivals numerous.

The amateurs' and cottagers' exhibits were very good, and the groups of plants and the cut flowers of the former remarkably so.

Some fruit was shown, as well as much flowering stuff and small foliage plants.

BOURNEMOUTH CHRYSANTHEMUM.

NOVEMBER 8, 9.—The above Society held its exhibition in the winter gardens of the Hotel Mont Doré, on the above dates.

Cut blooms.—For thirty-six, eighteen Japanese and eighteen incurved blooms, a Silver Challenge Cup, value £10 10s., was 1st prize, together with a money prize. This was won by Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Fareham, with excellent fresh-looking blooms of the finest varieties, C. Davis, Lord Brooks, Vivian Morel, Etoile de Lyon, Gloire du Rocher, Golden Bronze, Col. C. B. Smith, incurved, Empress of India, Golden Empress, Queen of England, John Lambert, M. A. Haggas, and Mrs. Robertson King. A Medal, offered for the most meritorious exhibit in the show, was also awarded to this stand of blooms. Mr. Thomas Wilkins, gr. to Lady Guest, Inwood House, Henstridge, was the winner of the 2nd prize. There were eight competitors in the above class.

Out of four stands of twelve distinct Japanese varieties, Mr. T. Wilkins was 1st, staging fine blooms. Three good stands of twelve blooms, incurved, distinct varieties, were shown, and here Mr. N. Molyneux secured the 1st place, with blooms uniformly good. Mr. W. J. Grace, gr. to W. A. Neave, Esq., Fordingbridge, had the best stand of Anemones, twelve blooms in not less than eight varieties. Mr. W. Woodford, gr. to Mrs. T. Goff, Lymington, had the best twelve reflexed blooms in eight varieties. Mr. Arthur J. Allaop, gr. to Viscount Portman, Bryanstone, Blandford, had the best specimen incurved bloom; and Mr. T. K. Ingram, the Nurseries, Parkstone, showed the best Japanese bloom, staging a grand one of Mrs. Alpheus Hardy.

Local Classes.—Mr. G. W. Taylor, gr. to Mrs. Elphinstone, Christchurch, was 1st for twelve incurved blooms, distinct varieties; and he had also the best twelve Japanese, thereby winning the two Silver Medals offered by the National Chrysanthemum Society.

Groups.—The best group of 60 square feet was won in the open class by Mr. T. K. Ingram, with very well-grown, well-furnished dwarf plants; and the Silver Cup was very properly awarded to it. Three good groups (local classes) of 50 square feet were arranged in competition for the Silver Challenge Cup, value 6 guineas, and the winners were Messrs. Eldridge, J. Stretch, and C. W. Barrett, and to whom the three prizes were awarded in the order of their names.

Fruit was on the whole well shown, and consisted of Apples, dessert Pears, black and white Grapes. Vegetables were shown in large quantities, including some for prizes offered by leading seedsmen. Cottagers were not forgotten in these classes, and their productions were generally good.

FINCHLEY CHRYSANTHEMUM SHOW.

NOVEMBER 9, 10.—A successful show of a small character was held on the above days at this suburban village. There were the usual shows of cut blooms, of groups, of specimen plants, of fruit, bouquets, table plants, &c. The principal prize-winners were Mr. D. Hayter, gr. at Tenterden Hall, Totteridge, for cut blooms and table plants; Mr. Walker, gr. Goldbeaters, Mill Hill, for a collection of fruit; Mr. Eason, gr. to B. Noakes, Esq., Highgate, for specimen plants. Other prize-winners were Messrs. Sandford, Burch, Cooke, Wooster, and Page.

WINDSOR.

NOVEMBER 10.—Mr. Finch, the hon. secretary, deserves great credit for the manner in which he managed the details of this successful show. There was but one class for groups of Chrysanthemums, and five growers competed, the 1st prize falling to Mr. J. Edge, gr. to Lord Harlech, Ascot, with well-grown dwarf plants, carrying excellent blooms and foliage; 2nd, Mr. H. Wood, gr. to Lord Boston. Mr. N. Skeet, gr. to Sir H. D. Gooch, Bart., Windsor, was the only exhibitor of specimen plants, and he had some grand examples of Japanese and incurved varieties, neatly trained and well-flowered.

Cut Blooms.—Mr. Thorne, gr. to Major Joicey, Sunningdale Park, Ascot, was 1st in the class for thirty-six. Mr. J. Williams, gr. to F. Ricardo, Esq., Ascot, was 1st for twenty-four incurved in not less than eighteen varieties. Mr. G. Lane with a really good lot of blooms, won the premier award for

twelve varieties. Mr. Skeet, with Mrs. Heales, won 1st place for six of any one incurved variety. For twenty-four blooms (Japanese), there was a strong competition, and Mr. A. Sturt, gr. to N. L. Cohen, Esq., Ascot, won the 1st prize, Mr. Williams following. Mr. E. Johnson, gr. to A. Gilliat, Esq., Windsor, was 1st for twelve distinct varieties with flowers that were perhaps the best in the show. Anemone-flowered varieties were well represented, as were reflexed flowers. Messrs. Sturt and Williams winning in the former, and Messrs. Popple and Thorne in the latter class.

DEVON AND EXETER HORTICULTURAL.

NOVEMBER 11.—An exhibition of Chrysanthemums of a most successful character was held in the Victoria Hall, Exeter, on the date above given. The entries were so numerous on this occasion that other rooms besides the Victoria Hall were requisitioned to enable the exhibits to be staged, the quality of the plants, cut flowers, and fruit was much above the average—in fact, the groups of Chrysanthemums arranged for effect were most excellent. The 1st prize in each class fell to Mr. Rowland, gr. to W. Brock, Esq., also in that for the group for miscellaneous flowering and foliage plants. His plants were in every case fresh, well-grown, with perfect foliage, and the usual arrangement of Chrysanthemums in groups was departed from, and the evenly packed method gave place to the more irregular style of arrangement which Mr. Rowland manages so well.

Cut Flowers.—Competition in the classes for cut flowers was keen in every case, and brought together a grand display of bloom, that has never been equalled at Exeter. In the Cup class for thirty-six Japanese varieties, distinct, there was a great number of competitors. Mr. Foster, gr. to Hammond Spencer, Esq., Teignmouth, came off victor with a splendid lot.

Groups.—For groups of Chrysanthemums in pots, not fewer than eighteen varieties, arranged for effect in a circle having a diameter of 9 feet, Ferns and other plants for the bordering, Mr. Rowland 1st, and the National Chrysanthemum Society's Certificate; 2nd, S. Rogers, gr. to G. Randall Johnston, Esq.

Groups of Chrysanthemums, with foliage plants, arranged for effect: 1st, Mr. Rowland, and 2nd, A. C. Williams, gr. to W. C. Simon, Esq.

For a miscellaneous group of plants: 1st, Mr. Rowland; 2nd, A. C. Williams. Mr. Rowland also took 1st prize for Bouvardias and Poinsettias.

Cut Blooms.—For thirty-six Japanese varieties, distinct (Silver Cup and National Chrysanthemum Society's Certificate): 1st, Mr. Foster, gr. to H. Spencer, Esq., Teignmouth, which included Vivian Morel, Sundowner, Colonel Smith, C. Schwabe, Golden Wedding, Beauty of Exmouth, Robert Owen, Excelsior, Mr. Bromhead, Dorothé Shea, W. K. Woodcock, Princess May, V. P. Audiguier, C. Blick, W. Lane, Violet Rose, Marie Hoste, Mrs. L. Allen, Mrs. G. Jameson, Lizzie Cartledge, Mr. A. H. Neve, F. Davis, Puritan, Mr. R. C. Wheeler, Ruth Cleveland, J. S. Dibbin, Mrs. E. D. Adams, Gloire du Rocher, Madame Baco, Boule d'Or; all in excellent condition. 2nd, Mr. Dawkins, gr. to W. H. Flower, Esq., Taunton.

For the best eighteen Japanese varieties, distinct: 1st, Mr. Jas. Lloyd.

For the best twelve Japanese varieties, distinct: 1st, Mr. W. H. Veale, gr. to Rev. A. H. Simons. Mr. Hawkins had the finest six white with Beauty of Exmouth; Mr. Veale being 2nd best with Florence Davis. Mr. Veale had the best six Japanese yellow in W. H. Lincoln. The best six of any other colour were shown by Mr. Hawkins with E. Molyneux. The best Japanese flower in the show was Robert Owen, shown by Mr. Style.

The best twenty-four incurved varieties, distinct, were shown by Mr. Foster; and the 2nd best by Mr. Jas. Lloyd.

The best incurved variety was Baron Hirsch, a beautiful specimen, shown by Mr. Style.

For twelve reflexed varieties, distinct, Mr. Heath was 1st. For twelve Anemone-flowered varieties, distinct, Mr. Protheroe, gr. to Mackenzie Bradley, Esq., was 1st.

The fruit classes, as might be expected, were well-filled, more than a thousand dishes were staged; and as this season the fruit has assumed more colour than usual, and ripened earlier than usual, the display of Apples and Pears was magnificent.

Amateur Classes: Cut Flowers.—Mr. G. B. Lansdale and Mr. Crabbe shared the honours between them with very creditable exhibits.

Miscellaneous.—The county and Exeter nurserymen, and some from Herefordshire and Somersetshire, contributed much fruit, decorative plants, cut blooms, new varieties of Chrysanthemums, Carnations, &c.

EASTBOURNE.

NOVEMBER 14, 15.—About sixty classes were well represented. Pretty and varied as the autumn queen is, a few Ferns have a grand effect among the blooms, oftentimes far too closely packed to do them justice.

For a group 10 feet by 6, to consist of Chrysanthemums only, Mr. J. Carpenter, gr. to H. Dewhurst, Esq., Highfield, was 1st, with a very pretty lot, containing some really good specimens, and a grand selection of colours; Mr. J. Morley and Mr. J. Burr following. For a group of similar dimensions, but with a bed of Ferns to aid the appearance, Mr. T. Fuller, gr. to J. Hooke, Esq., who had an exceedingly pretty combination, was 1st, and Mr. J. Jupp, gr. to G. Boulton, Esq., 2nd.

Specimen plants were fairly well represented, Mr. Carpenter having very good examples of Mrs. Dixon, Peter the Great, Source d'Or, and another, which easily gained the 1st prize. Other prize-winners were Messrs. C. S. Archer, Brooker, Jupp, Morley, Griffin, and Fuller.

Cut Flowers.—Thirty-six blooms, eighteen Japanese and eighteen incurved, placed Mr. Jupp 1st; Mr. J. Blake, gr. to F. C. S. Roper, Esq., was a good 2nd; the 3rd prize going to Mr. Griffin. Mr. Blake was awarded 2nd for twenty-four incurved, and was the only exhibitor, although other classes were well represented. Other prize-winners were, Messrs. Jupp, Holding, Blake, Griffin, Fuller, Mills, and Archer.

Fruits and vegetables were very prominent, and fairly good, the collection of culinary Apples from Mr. Morley, gr. to J. G. Langham, Esq., being first class. Mr. Morley was also 1st for six dishes of dessert Apples.

Mr. W. Breach was 1st for a collection of vegetables in the open class, and also in that confined to amateurs; both lots were clean, and of first-rate quality and size, without coarseness.

BECKENHAM.

NOVEMBER 14, 15.—Mr. Thos. Crosswell was awarded the majority of First Prizes, which included a Silver Medal and Certificate of Merit. The 1st Prize for three button-holes was awarded to C. Boatwright, who received also 1st prize in classes 27 and 28 for two bunches and one bunch of Grapes respectively; he was, in addition, highly commended for his groups of miscellaneous plants. First prize in classes 16 and 17 for ladies' sprays, and class 21 (four Palms), Mr. Webster. A good selection of Plants was exhibited (not for competition), by J. Laing & Sons.

PLYMOUTH.

NOVEMBER 14, 15.—Cut blooms formed the most attractive part of the show. For forty-eight specimens, in not fewer than thirty-six varieties, half Japanese, and the remainder incurved, £15 was offered for 1st prize, with other prizes of proportionate value. Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Fareham, Hants, beat the Messrs. Drover, nurserymen, Fareham, by a trifle for premier place. The Japanese possessed much quality; the most striking blooms were Mdle. M. Hoate, Princess May, G. C. Schwabe, and Etoile de Lyon. The incurved were not large, but of perfect symmetry, and as fresh as possible.

In the class for twenty-four incurved, Messrs. Drover won with faultless blooms; Mr. N. Molyneux followed uncomfortably closely.

For twenty-four Japanese, Mr. Stiles, gr. to Miss Fripps, Teignmouth, won with a stand of noble blooms.

For twelve, Mr. Molyneux gained the premier award with a level lot of blooms.

For six blooms of any white variety, Mr. Veale led with Florence Davis; Messrs. Drover 2nd.

Mr. Stiles, with Vivian Morel, won premier position for six, any coloured variety; Mr. Foster 2nd.

Mr. N. Molyneux, with Mdle. M. Hoate and Etoile de Lyon, won for six, any two varieties; Messrs. Drover 2nd.

Anemone and reflexed were but moderately shown. Groups of Chrysanthemums were represented by nine collections. Mr. F. Upsher, 18, Connaught Avenue, Plymouth, 1st, with a most creditable lot of plants; while their arrangement left little to be desired.

TREES AND SHRUBS.

DECIDUOUS MAGNOLIAS.

As this is the planting season, two Magnolias may be pointed out as worth more attention than they usually get. The Yulan, or *M. conspicua*, is one of the finest of the genus; it belongs to the Chinese group, and puts forth its splendid flowers often before winter is past, the bare branches presenting a mass of white. There are several good specimens in the vicinity of London, notably at Syon House, Gunnersbury House, and Kew. This species was introduced into England from the southern provinces of China in 1789 by Sir Joseph Banks. It is planted freely in the Emperor's gardens, and not only used for the enrichment of the landscape, but forced also, so that a perpetual supply of the fragrant flowers is maintained. In China, it grows about 40 feet in height, and in England some very fine specimens are recorded. The Gunnersbury plant before mentioned is a large tree in a sheltered part, where the cold winds and nipping frosts of early spring do not reach it; and to obtain the full beauty of the large waxy white flowers, the tree must be in a sheltered spot. The flowers are useful for cutting; moreover, they are not too strongly scented. It is usually grown as a standard, but is beautiful as a wall plant. The soil should be a deep sandy loam, and occasionally enriched with a top-dressing of manure. When the flowers are over, the leaves appear. *Magnolia Soulangeana* × is similar to the type, except in the flowers, these being more like those of *M. purpurea*, and tinged with purple, whilst they appear later in the season. It was raised in the garden of M. Soulange Bodin, at Fromont, near Paris, and arose through the crossing of a plant of *M. conspicua* with one of *M. purpurea* that stood near to it. The hybrid plainly indicates the parentage. There is a still deeper form of *M. Soulangeana*, named *nigra*, in which the flowers are of a rich shade of purple. *M. speciosa* is probably a variety of *M. Soulangeana*, and it is like that hybrid in growth and leafage. The flowers are similar, but appear later, and they are not so deep in colour. They last over a long season. *M. Norbertiana* is also a variety, with flowers of white and deep purple.

The other deciduous species too little seen is *M. stellata*, or *M. Halleana*, a Japanese Magnolia, introduced by Dr. Hall. It grows about 7 or 8 feet in height, and opens its flowers very early in the spring, before the leaves expand. The petals are white, except in the rose-coloured variety, and narrow. It is sometimes used as a pot-plant for the conservatory, but there is no reason why *M. stellata* should not be planted in the garden, it being very hardy, and only needing a sheltered position to protect it. A small group of it would be pleasing. V.

TRADE NOTICE.

WM. CUTHBERTSON & ROBERT FYFE, sole partners of the firm of Dobbie & Co., inform our readers that on November 11 they assumed as partner Mr. Archibald M. Burnie. Mr. Burnie is a prominent member of the Institute of Bankers in Scotland, and has long been associated with the business of the Clydesdale Bank, Limited, in Rothesay.

MARKETS.

COVENT GARDEN, November 16.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

PRICES rule as last week.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, per bush.	... 1 0-6 0	Pine-apples, St. Michael, each	... 3 0-7 6
Cobs, per 100 lb.	... 32 8-0		
Grapes, per lb.	... 1 0-3 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	6 0-12 0	Ferns, various, doz.	4 0-9 0
Aspidistra, per doz.	15 0-30 0	— small, per 100	4 0-6 0
— specimen, each	7 6-21 0	Foliage plants, doz.	12 0-42 0
Chrysanthemums, doz	6 0-9 0	Hydrangea, per doz.	12 0-24 0
— large plants, each	1 8-2 0	Marguerite, per doz.	6 0-12 0
Cyperus, per dozen	4 0-10 0	Mignonette, doz. pots	6 0-9 0
Dracena, each	1 0-5 0	Palms, various, each	2 0-10 0
Erica, various, p. dz.	9 0-24 0	— specimens, each	10 6-84 0
Evergreen Shrubs, in		Pelargonium, scar-	
var., per dozen	6 0-24 0	let, per dozen	3 0-6 0
Ficus elastica, each	1 6-7 6	Solanums, per doz.	9 0-12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum, per doz. bl.	3 0-6 0	Narciss, French, white,	
Bouvardias, per bun.	0 6-1 0	12 bunches	2 0-3 0
Carnations, 12 blms.	1 0-2 0	— yellow, 12 bun.	4 0-6 0
Chrysanthemums, 12		Orchids:—	
bunches	2 0-6 0	Cattleya, 12 blms.	6 0-12 0
— doz. blooms	0 6-3 0	Odontoglossum	
Eucharis, per dozen	3 0-6 0	orispum, 12 blms.	2 0-6 0
Gardenia, per dozen	2 0-4 0	Pelargoniums, scar-	
Heliopsis, 12 sprays	0 3 0 6	let, p. 12 bun.	4 0-6 0
Hyacinth, Roman,		— 12 sprays	0 6-1 0
12 sprays	0 8-1 0	Pyrethrum, 12 bun.	2 0-4 0
Lilac (Fr.), per bun.	4 0-6 0	Roses, French, p. doz.	1 0-3 8
Lilium lancifolium,		— p. box of 100	16 0-3 0
p. doz. blooms	2 0-3 0	— Tea, per dozen	0 6-2 0
— Harrisii, p. doz.	6 0-9 0	— coloured, dozen	2 0-4 0
Lily of the Valley,		— yellow (Maré-	
per dozen sprays	2 0-3 6	chals), per doz.	2 0-6 0
Maiden Hair Fern,		— red, per dozen	1 0-1 8
12 bunches	4 0-6 0	Tuberose, 12 blms.	0 4-0 6
Marguerite, 12 bun.	1 6-3 0	Violets, Parmé, p. bn.	2 0-2 8
Mignonette, 12 bun.	2 0-4 0	— Czar, per bun.	1 9-2 0
Primula, dble. p. bun.	0 6-1 0	— English, per doz.	1 6-2

ORCHID-BLOOM in variety.

CHRYSANTHEMUM-BLOOM very plentiful, price is low in consequence.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Beans, French, lb.	0 6-1 0	Lettuces, per doz.	1 6-2 0
Beet, red, per dozen	2 0-3 0	Mushrooms, punnet	1 6-2 0
Carrots, per bunch	0 4-0 6	Mustard and Cress,	
Cauliflowers, each	0 3-0 6	punnet	0 2-0 2
Celery, bundle	1 0-1 3	Parsley, per bunch	0 2-0 3
Cucumbers, each	0 6-1 0	Shallots, per lb.	0 3-0 3
Endive, per dozen	1 3-1 6	Tomatoes, per lb.	1 0-0 0
Herbs, per bunch	0 3-1 0	Turnips, per bunch	0 4-0 6
Leeks	0 4-1 0		

POTATOS.

Arrivals are very heavy, and demand very slow for all kinds, except a few extra good samples, which are readily picked up at high prices. Ordinary samples are a drug. J. B. Thomas.

SEEDS.

LONDON: Nov. 15.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that Clover seeds of all kinds meet at present with but little attention. Cables from America describe a hardening market. Trefoil this season is very dear. Small sowing orders for Winter Tares still come to hand. Rye is steady. As regards Canary seed, quotations in London, and more particularly in Liverpool, continue to rise. The new Hemp seed comes cheap and good. Peas and Haricots show no change. Late advance in Canadian Linseed is well sustained.

FRUITS AND VEGETABLES.

BOROUGH: November 14.—Quotations:—Cabbages, 2s. to 4s.; Savoys, 2s. 6d. to 4s.; Cauliflowers, 5s. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 3s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; English, do., 5s. 6d. to 8s. 6d. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

SPITALFIELDS: November 14.—Quotations:—Cabbages, 2s. to 4s.; Savoys, 2s. 6d. to 4s. 3d.; Cauliflowers, 5s. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 3s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; do., English, 5s. 6d. to 8s. 6d. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

STRATFORD: Nov. 14.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Cabbages, 1s. to 3s. 6d. per tally; Savoys, 2s. to 4s. 6d. per tally; Greens, 6d. to 1s. per bag; ditto, 1s. 3d. to 2s. per dozen bunches; Cauliflowers, 6d. to 1s. 3d. per dozen; do., 2s. 6d. to 6s. per tally; Turnips, 1s. to 1s. 6d. per dozen bunches; do., 30s. to 40s. per ton; Carrots, household, 40s. to 50s. per ton; do., cattle-feeding, 32s. 6d. to 40s. per ton; Parsnips, 6d. to 1s. 3d. per score; Mangels, 22s. to 27s. per ton; Swedes, 20s. to 26s. per ton; Onions, English, 160s. to 180s. per ton; do. Dutch, 6s. to 6s. 6d. per bag; do. American, 6s. 6d. to 7s. per case; Apples, English, 2s. to 5s. per bushel; Brussels-Sprouts, 1s. 3d. to 1s. 6d. per half-sieve; do., 2s. 3d. to 2s. 6d. per flat; Celery, 8d. to 1s. per roll; Horseradish, 1s. 4d. to 1s. 6d. per bundle.

FARRINGTON: Nov. 16.—Sprouts, 1s. 3d. to 1s. 6d. per bushel; Celery, 8s. to 10s. per dozen; English Onions, 27 to 27 10s. per ton; Apples, cooking, 3s. 6d. to 4s. per bushel; Pears, Catillac, 2s. 6d. per bushel; Tomatoes, English, 6d. per lb.; Grapes, English, 1s. per pound.

POTATOS.

BOROUGH AND SPITALFIELDS: November 14.—Quotations were quoted, 40s. to 110s. per ton.

STRATFORD : Nov. 14.—Quotations:—Magnums, dark-land, 35s. to 42s.; do., light-land, 46s. to 60s.; Bruces, 40s. to 65s.; Hebrons, 60s. to 90s. per ton.

FARRINGTON : Nov. 14.—Quotations:—Bruces, 60s. to 70s.; Main Crop, 70s. to 80s.; Sutton's Abundance, 65s. to 70s.; Magnums, 45s. to 55s. per ton.

LONDON AVERAGES : Nov. 15.—Hebrons, 80s. to 110s.; Regents, 50s. to 70s.; Snowdrops, 60s. to 90s.; Main Crop, 60s. to 80s.; Blackland Magnums, 45s. to 55s.; Magnums, 40s. to 65s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the week ending November 11:—Clover, prime, 140s. to 165s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s.; new Mixture, 115s. to 130s.; and Straw, 35s. to 58s. per load.

CORN.

Averages.—Official statement of the average prices of corn, imperial measure (quarter) for the week ending November 11, and for the corresponding period last year:—1893: Wheat, 27s. 4d.; Barley, 29s. 3d.; Oats, 18s. 1d. 1892: Wheat, 28s. 3d.; Barley, 27s. 4d.; Oats, 18s.

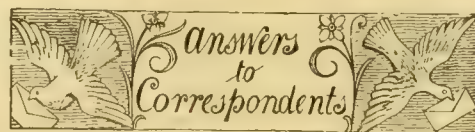


[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

"The temperature was below the mean, the deficit ranging between 2° and 3° in most of the northern districts; but amounting to 5° in 'England, S.W.,' and to 6° in 'Ireland, S.' The absolute maxima were registered either at the beginning or the end of the week; but, with the exception of the 'Channel Islands,' where the thermometer rose to 59°, the highest readings were very little above 50°. In 'Scotland, N.' the thermometer did not exceed 49°. The lowest of the minima were recorded either on November 5, 6, or 7, when sharp frost occurred in all districts excepting the 'Channel Islands.' In the 'Midland Counties' the sheltered thermometer fell as low as 19°, in 'Ireland, N.' to 20°, in 'England, S.W.,' and 'Ireland, S.,' to 22°, and in 'England, E.,' and 'Scotland, W.,' to 23°.

"The rainfall amounted to considerably less than the mean in all districts excepting 'England, N.E.,' where there was a slight excess. In 'Scotland, W.,' 'England, S.W.,' and 'Ireland, N.,' the aggregate for the week amounted to less than half-a-tenth of an inch.

"The bright sunshine was in excess of the mean in all districts excepting 'Scotland, N. and E.,' in 'England, E.,' 'England, S.W.,' and the 'Channel Islands,' the excess was considerable. The percentage of the possible duration varied from 14 in 'Scotland, N. and E.,' to 45 in 'England, E.,' and to 53 in 'England, S.W.'"



BOUQUET OF WILD FLOWERS: *Cotty Ramble*. You should learn the names of the various wild flowers of your district. Some flowers fade sooner than others, and do not revive even when put into water; these you should not choose for your posies. In gathering flowers for the house at long distances from home, you should use an airtight tin box, some fresh clean moss, and oiled paper should be taken in the box.

CAMELLIA BLOOMS: *S. B.* If the trees are large and old, the flowers should be taken off with an inch or two of the shoot attached; but if young, and much pruning therefore unnecessary, the flowers should be removed by cutting them just below the calyx, without any part of the shoot being taken. In both cases the flowers must be "wired."

CORRECTION.—In our report of the National Chrysanthemum Show last week, we were in error when we stated that Mr. Godfrey was 1st for six blooms of seedling Chrysanthemums, staged for special prize, offered by Mr. H. J. Jones. That position was taken by Mr. Rowbottom. Mr. Godfrey won the Society's Silver Medal for six new varieties (Japanese) from any source, and was also 1st for twelve new Japanese.

FRUITS.—Owing to a clerical error of ours, several parcels of fruit sent to this office have passed into the hands of the Royal Horticultural Society, who, we understand, will send the names of the specimens to the senders individually.

INSECTS: *X.* The beetles in Californian Barley are the common corn weevil, *Calandra granaria*. *R. McL.*

MANUAL ON MAKING LAWNS: *J. C.* Some of the large seed-houses publish directions in their catalogues on this subject.

NAMES OF FRUITS: *T. A. D.* Your Pear was much over-ripe.—*E. Cripps.* 1, Duchesse d'Angoulême; 2, Beurré Diel; 3, Hoary Morning; 4, Fearn's Pippin; 5, London Pippin.—*J. B.* 1, Cox's Pomona; 2, Waltham Abbey Seedling.—*Ross.* Glou Morceau.—*Bowers.* Easter Beurré.—*A. Bryan.* Yellow Bellefleur.—*A. Weller.* Golden Noble.—*O. Harvey.* 7, Margil; 9, Norfolk Beefing; 2 and 8, King of the Pippins; 4, Lamb Abbey Pearmain; 3, Wyken; 6, Hick's Fancy.—*Rev. H. Ellacombe.* Apple Wyken.—*T. K. Ingram.* Large Pear, Beurré Clairgeau; small Pear, Forelle,—

B. R. Apples: 1, Northern Greening; 2, Court Pendu Plat; 3, Striped Beefing; 4, Landsberger Rennet; 5, King of the Pippins. Pears: 1, Triomphe de Jodoigne; 2 and 4, Josephine de Malines; 3, much too ripe.—*A. F.* Apple: Brad-dock's Nonpareil.—*W. Over.* All your specimens are miserably poor. The only one we can name is No. 6, Ribston.—*W. R. L.* 1, Bellissime d'Hiver; 2, Urbaniste; 3, Uvedale's St. Germain; 4, Kerry Pippin; 5, Lady Henniker; 7, Colonel Vaughan.

NAMES OF PLANTS: *E. G.* *Lavatera arborea variegata*.—*J. R.* *Zygopetalum Mackayi*, but not a good form of it. The *Oncidium* was not found.—*Hamburg.* *Odontoglossum maculatum anceps*. The injury to the *Cattleya* you send, and to others grown in company with it, probably arises from the temperature of the house being kept too high, and at the same time too little moisture and air has been given.—*Fern Lover.* *Lastrea dilatata*.—*H. W. Wilson.* We cannot undertake to name florist's flowers; besides which, the specimen is not sufficiently well-grown to be recognised.—*Gardener.* 1, *Achillea ptarmica flore-pleno*; 2, *Asperula odorata*; 3, a *Crassula*, not a Cactus; 4, *Phalaris arundinacea variegata*; 5, *Berberis stenophylla*; 6, *Salix* sp.—*D. D. Pankhurst.* The forked leaf is *Ginkgo biloba*, the Maidenhair Tree; the other we do not recognise.—*Foreman.* *Abutilon*, a florist's variety. Send it to some nurseryman who grows these plants extensively.

PLANTS FOUND IN TURKISH HAY: *E. D.* *Scirpus maritimus*, *Centaurea solstitialis*, *Eryngium creticum*.

RATING: *W. R., T.* The rating is wrong, and you should appeal against it, a glass-house being in the nature of a trade utensil, and the rating on the one-fourth scale. See *Parser v. Worthing Local Board*, in the *Gardeners' Chronicle*, March 26, 1887, and the appeal, same case, May 21, 1887.

SHOOTING: *A. F.* You must obtain a gun licence.

SMALL PLANTS OF CHRYSANTHEMUMS: *J. F.* These are struck from the tops after the buds have begun to form, or layered from plants in the open. The cutting plan is the better one, as the plants are then dwarfed without pinching, which would make them very late in flowering. They strike readily in a close frame.

TOMATO FUNGUS: *N. S.* The too well-known Tomato fungus, so often figured and described in our columns. It is too late to do anything but burn the affected specimens now, but you might have kept it in check by the judicious use of the Bordeaux Mixture.

COMMUNICATIONS RECEIVED.—*W. Roupell* (with thanks.)

—*Harrison & Sons.*—*R. Hollister.*—*W. T. Thomson.*—*C. L., Erfurt.*—*H. F.*—*J. S.*—*J. H. V.*—*E. T. R.*—*L. L., Brussels.*—*J. B.*—*T. C.*—*W. L.*—*F. W. S.* (the photographs have not come to hand).—*Osman & Co.*—*J. V.*—*E. P., Ghent.*—*P. B.*—*G. P.*—*Professor Crié, Rennes.*—*C. W. B.*—*J. B.*—*F. V. D.*—*E. K., Haarlem.*—*W. W. P.*—*T. K., Bath.*

FRUITS RECEIVED.—*Rev. T. W. S.*

CHRYSANTHEMUM SHOWS.—Reports have been received from Nottingham—Grimsby—Stroud—Norton, Heckmondwyke, Cork—Ware—St. Neots—Thame—Melksham—Isle of Thanet—Leatherhead—Devizes—Dalston—Wells—Gloucester—Dartmouth—Ealing—Lewes—Tunbridge Wells—Great Yarmouth—Hull and East Riding—Birmingham.

CONTINUED INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

THE PAST WEEK.

The following summary record of the weather for the week ending November 11, is furnished from the Meteorological Office:—

"The weather was mostly fair in the western parts of the United Kingdom, but changeable and showery in the northern, eastern, and south-eastern districts. Snow or sleet was experienced in several of the more northern parts of Great Britain on November 5 and 6; and thunder and lightning occurred at some of our southern and south-western stations on November 6 and 7.

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending November 11.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 1, 1893.	Below 42°, difference from Mean since January 1, 1893.					
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ina.				
0	3 —	2	28	+ 514	— 40	11 —	211	43.8	14	24
1	3 —	3	28	+ 315	— 9	2 —	163	22.8	14	33
2	2 —	12	19	+ 424	— 33	2 +	143	17.5	25	37
3	3 —	12	34	+ 523	— 26	4 —	141	16.5	45	43
4	4 —	10	34	+ 685	— 41	6 —	135	16.7	34	41
5	4 —	11	23	+ 586	— 38	6 —	134	19.2	56	45
6	4 —	7	34	+ 474	— 28	13 —	169	33.7	35	37
7	3 —	11	20	+ 741	— 21	8 —	157	25.7	28	36
8	5 —	11	25	+ 697	— 55	10 —	143	26.9	53	47
9	4 —	12	30	+ 552	— 75	8 —	181	28.4	42	32
10	6 —	13	31	+ 594	— 78	8 —	158	25.8	38	36
*	4 —	25	0	+ 849	— 52	8 —	152	23.0	41	55

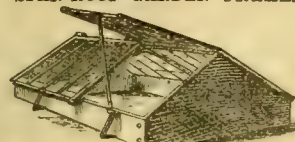
The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

Boulton & Paul

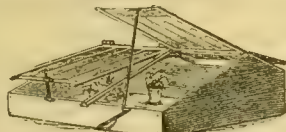
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8 ft. by 6 ft. 4 4 0 | 16 ft. by 6 ft. 7 4 0

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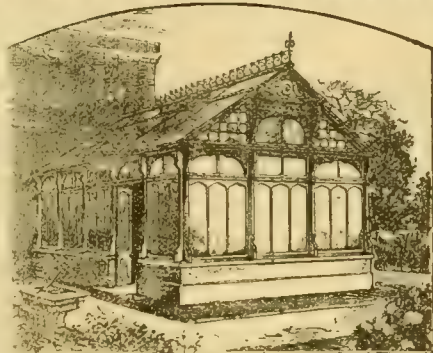
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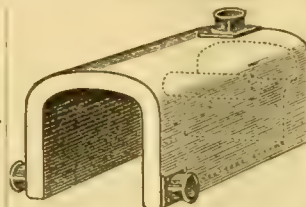
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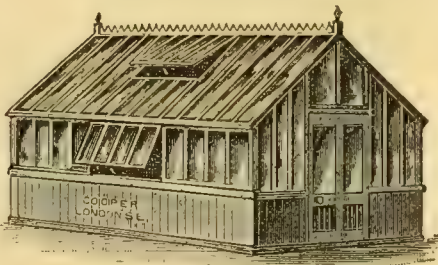
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10ft.	7ft.	7ft.	6in. 4ft. 6in.	"	5 0 0
12ft.	8ft.	8ft.	5ft.	"	6 0 0
15ft.	10ft.	8ft.	6in. 5ft.	"	8 10 0
20ft.	10ft.	9ft.	5ft. 6in.	"	12 0 0
25ft.	10ft.	9ft.	5ft. 6in.	"	17 0 0
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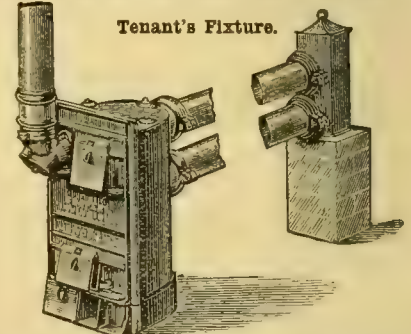
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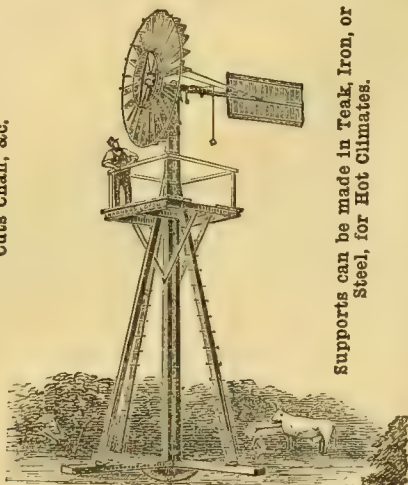
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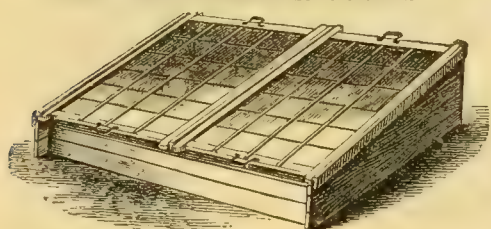
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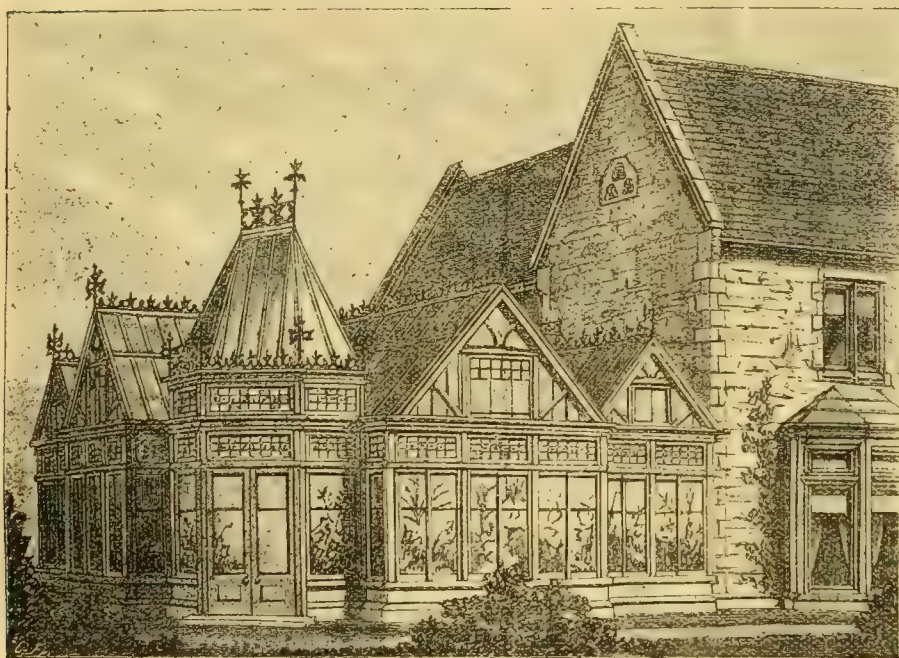
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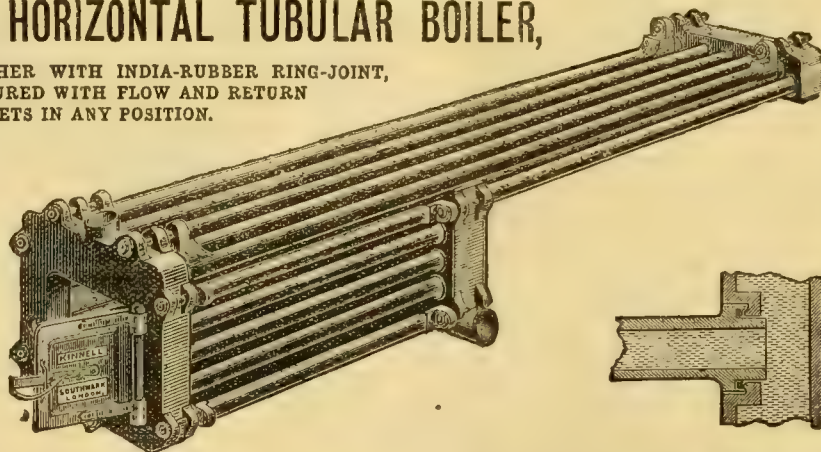
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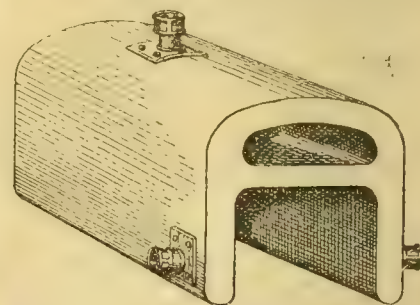
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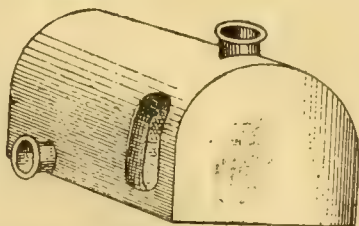
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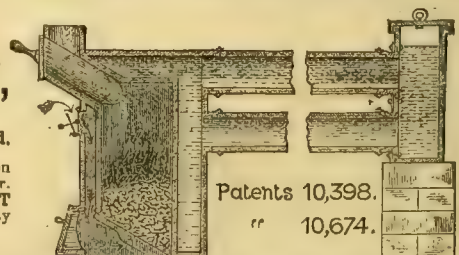
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ESTABLISHED 1841. No. 2761.

No. 361.—Vol. XIV. {THIRD SERIES.} SATURDAY, NOVEMBER 25, 1893. {Regt. as a Newspaper. {PRICE 3d. WITH SUPPLEMENT. POST-FREE, 3d.

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20,000 RASPBERRY CANES, Semper Fidelis and Dr. McLean, at 25s. per 1000; also 5 to 6 feet ASH PLANTS, strong, at 40s. per 1000; SCOTCH FIR, from 2 to 5 feet, at from 30s. to 50s. per 100.
A. WATERMAN, Knockholt Nurseries, Knockholt, Kent.

SEAKALE, for Forcing, superior selected, Crowns, 80s. per 1000; under 500, 9s. per 100. Cash with order.—ALFRED ATTWOOD, Grower, removed to 24, Lubeck Street, Battersea, S.W.

RASPBERRY CANES.—Norwich Wonder, Carter's Prolific, also Fastolf, well rooted. Not less than 1000 canes supplied.
ALBERT BATH, Vine Court, Sevenoaks, Kent.

MILLER'S SEAKALE.—Strong Roots for forcing, 8s. 6d. per 100; extra large massive Roots, for quick forcing, 12s. 6d. per 100; good roots for planting, 5s. 6d. per 100.
F. MILLER AND CO., 267, Fulham Road, London, S.W.

MESSRS. WARREN AND CRAIK, Court Florists, Jermyn Street, London, S.W., are BUYERS, at highest Prices, of Choice EXOTICS, ORCHIDS, GARDENIAS, STEPHANOTIS; also Dark and White VIOLETS, Malmaison and other good CARNATIONS, &c.

HENRY RIDES, Centre Avenue, Covent Garden, W.C., is open to RECEIVE CONSIGNMENTS OF GRAPES, TOMATOES, CUCUMBERS, MUSHROOMS, &c. Highest Market Prices guaranteed. Prompt Cash. Empties on application.

CHRYSANTHEMUMS.—Our new LIST is now ready. It contains all the most recent introductions, and they are offered at very moderate prices. Copies free on application.—DOBBIE AND CO., Florists, Rothesay.

FOR SALE, 10,000 three and four times transplanted SCOTCH FIRS, from 4 to 12 feet, well furnished. Less than half price.
E. TANNER, Nurseryman, Groombridge, Sussex.

WANTED, Offers of Reading Russett, White Elephant, Beauty of Hebron, and Early Puritan POTATOS, Seed size. Lowest Price to—
LITTLE AND BALLANTYNE, Carlisle.

WANTED, GARDENERS' CHRONICLE, July 11, 1891; May 4, 1889; April 23, 1883; May 27, 1858; May 21, 1859; June 6, 1863; July 11, 1891; May 4, 1889.—State price to W. T. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

MAIDENHAIR FERN, cut fronds, packed to arrive fresh, at 1s. 8d. per 100 fronds; post free for cash.
G. FORBES, Timperley, Cheshire.

RASPBERRY CANES.—Baumforth's Seedling, 9s. per 100, 70s. per 1000; Norwich Wonder and Fastolf, 4s. 6d. per 100, 35s. per 1000. Strong Dutch RED CURRBANTS, 2s. 6d. per dozen, 8s. per 100. Free on Rail.
R. H. BATH, Osborne Farm, Wisbech.

OLD CRIMSON CLOVE, extra strong rooted layers, also GERMANIAS, strong plants in 32's, A. ALEGATIERE in 48's, throwing up flower-spikes. Cheap to clear.—C. JOHNSON AND CO., The Nurseries, Hampton.

Seakale.
FINEST QUALITY FOR FORCING.
Prices and samples on application.
H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton.

SPECIAL OFFER for NOVEMBER of some 180 of the best ALPINE, ROCK, and HERBACEOUS PLANTS, at low rates, by the dozen and 100. Single samples at same rates for cash with order. For LIST, send stamped directed envelope to—
MANAGER, Guildford Hardy Plant Nursery, Millmead, Guildford. General CATALOGUE, 100 pages, 4 stamps.

STANDARD MORELLO and other **CHERRIES**, stout stems, fruiting heads, fibrous roots. Low price per 100 or 1000. Fruit Trees of all kinds, wholesale and retail.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

CELOGYNE CRISTATA, Chatsworth, Trentham, and maxima varieties, well grown, with bloom-spikes, and cheap.
TRUSTEES, late J. Stevenson, Timperley, Cheshire.

SEAKALE.—SEAKALE.
Extra strong, for Forcing
15s. per 100, including package. Cash with order.
N.B.—Trade price on application to—
ENOCH WHITE AND SONS, Nurserymen, Bournemouth.

ORCHIDS.—Many rare and choice Cattleyas, Cypripediums, Dendrobiums, Odontoglossums, &c., always in stock. Inspection invited. Please write for LIST.
W. L. LEWIS AND CO., F.R.H.S., Chase Side, Southgate, London, N.

To the Trade.
IMPORTANT NOTICE.—When you are in London, it will be well worth your time to pay a visit to Albert Nurseries, Peckham Rye, S.E.; or Fleet, Hants. You can make your notes, and have a business look round, combined with an outing; you will not be worried to order.
E. D. SHUTTLEWORTH AND CO., LTD.
Awarded Silver-gilt Flora Medal by the Royal Horticultural Society; also Gold, Silver-gilt, Silver, and Bronze Medals, Prizes, and Certificates at other First-class Shows. Our specialty—really good stuff grown for the Trade.

GISHURST COMPOUND, used since 1859 for Red Spider, Mildew, Thrips, Greenfly, and other blight; 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake, for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supersede it. Boxes, 14s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

J. WEEKS & Co., Horticultural Builders to Her Majesty, H.R.H. the Prince of Wales, H.M. Government, Admiralty Dept., War Dept., Royal Hort. Soc., Royal Botanic Soc., Parks and Public Buildings, Patentees of the Duplex Upright Tubular Boilers, King's Road, Chelsea, S.W.

THOMSON'S MANURE.—The sale of this Manure is steadily increasing, and it can be had as formerly of all the leading Nursery and Seedsmen in the United Kingdom.
London Agent, Mr. JAS. GEORGE, 14, Redgrave Road, Putney. Agent for Channel Islands, Mr. J. H. PARSONS, Guernsey. Sole Makers, WILLIAM THOMSON AND SONS, Limited, Tweed Vineyard, Clovenfords.

SALES BY AUCTION.

SPLENDID BULBS FROM HOLLAND.

Sales every MONDAY, WEDNESDAY, THURSDAY, and frequently on SATURDAY.

In Large and Small Lots, to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., first-class consignments of choice HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland in the finest possible condition.

On view mornings of Sale, and Catalogues had free on application.

N.B.—None but good and reliable Bulbs will be offered.

Wednesday Next.

400 well-grown English Standard and Dwarf ROSES, a Collection of FRUIT TREES, LAURELS, YEWs, Flowering TREES and SHRUBS, &c.; LILiums from Japan and Holland; 20,000 Berlin LILY OF THE VALLEY Crowns, BEGONIAS, GLOXINIAS, HELLEBORES, CHRISTMAS ROSES, 1000 SPIRÆA JAPONICA and PALMATA, LILY OF THE VALLEY Clumps, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 29.

On view morning of Sale, and Catalogues had.

Thursday Next.

A COLLECTION OF WELL-GROWN ORCHIDS, THE PROPERTY OF A GENTLEMAN.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 30, a Collection of well-grown ESTABLISHED ORCHIDS, the property of a Gentleman, containing some fine varieties of Oncidium, Lælia, Cattleya, Odontoglossum, Masdevallia, Cologynus, Brassia, &c. Lilioms from Japan and Holland; Lily of the Valley crowns and clumps, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

IMPORTED ORCHIDS FROM BRAZIL, ORCHIDS IN FLOWER

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 30, at half-past 12 precisely, an importation of ORCHIDS from Brazil, in fine order, consisting of Cattleya crispa, Lælia pumila, L. Perini, various Miltonia, Burlingtonia fragrans, Lælia Harpophylla, Cattleya Walkeriana, &c. Also some choice ORCHIDS IN FLOWER.

On view morning of Sale, and Catalogues had.

Tottenham, near Bruce Grove Station.
SHORT NOTICE OF CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the premises, "Oakwood," 672, High Road, Tottenham, on TUESDAY NEXT, November 28, at 1 o'clock, 500 FERNS, TEA ROSES, BEGONIAS, FUCHSIAS; 400 CHRYSANTHEMUMS, named sorts, CAMELLIAS, AZALEAS; 600 ECHEVERIAS, 200 Standard and Dwarf ROSES, named; Portable Greenhouse, Garden Seats, Two Garden Frames, Box, Barrow, Tools, Nine Glazed Lights, and Sundries.

May be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Brockley, S.E.—Absolutely without reserve.
IMPORTANT CLEARANCE SALE, the land being required for extension of Lewisham Cemetery.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the premises, Maller's Nursery, Ivy Lane, Brockley, S.E., on WEDNESDAY NEXT, Nov. 29, at 12 o'clock, the well-grown and thriving NURSERY STOCK, including large quantities of Cupressus, Thuja, Laurels, Hollies, and other useful Conifers and Deciduous Shrubs in variety, hundreds of Limes, Poplars, Mountain Ash, Elms, Laburnums, Planes, and other standard ornamental Trees; Standard, pyramid, and dwarf-trained Apples, Pears, Plums, and Cherries, Red Currants, &c.

May be viewed. Catalogues had on the premises, of Messrs. B. MALLER and SONS, Burnt Ash Nurseries, Lee, S.E., and 61, High Street, Lewisham, and of the Auctioneers, 67 & 68, Cheapside, E.C.

Tuesday Next—Special Sale.

5000 AFRICAN TUBEROSUS, LILUM SPECIOSUM, SPIRÆA JAPONICA, S. COMPACTA, S. ASTILBOIDES, GLADIOLUS (The Bride), LILUM HARRISII, LILY OF THE VALLEY Clumps.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 28, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Monday Next.

200 AZALEA MOLLI, 36 Palms, 12 RHODODENDRON GIBSONI in pots, 24 DRACÆNAS, CAMELLIAS, &c., well budded from Belgium; 200 dwarf ROSES, 40 lots of STOVE and GREENHOUSE FERNS, handsome ornamental PALMS and FERNS for Greenhouse; 50 lots of choice named Narcissus, German Iris to name; ANEMONE FULGENS; CARNATIONS and PICOTÉES, a magnificent collection; PHLOX, PYRETHRUMS, PÆONIES, LILY OF THE VALLEY; DIELYTRA SPECTABILIS, BEGONIAS, CHIONODOXA, a fine assortment of homegrown LILIES, herbaceous plants in variety, &c. Also 24 ALL-CANTE and GROS COLMAR VINES, ASPARAGUS PLUMOSA NANA, PRIMULAS, 6 white AZALEA FIEDLERII, 2 ASPIDISTRA VARIEGATA, and 1 KENTIA BELMOREANA.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., on MONDAY NEXT, November 27, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Friday Next.

CYPRIPEDIUM HYBRID VEITCHII × SUPERCILIARE.
" LECANUM × SALLIERI.
" TENEBROSUM HYBRID.
" HYBRID TALLICRI HYANUM × CHANTIL.
" HARRISONIANUM GENANTHUM.
" HYBRIDUM.
" RADIOSUM, and OTHERS.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE, on FRIDAY NEXT, December 1.

On view morning of Sale and Catalogues had.

Thursday Next.

5450 LILUM AURATUM.
1530 " RUBRUM.
825 " ALBUM.
1500 " LONGIFLORUM, in 6 cases as received, condition.

The contents of 100 cases just received from Japan, in grand 15 cases of PALM SEEDS, comprising:—

26,000 KENTIA FORSTERIANA.
48,000 CORYPHA AUSTRALIS.
7,500 ARECA SAPIDA.
8,000 KENTIA CANTERBURYANA.
Received direct from Australia.

141,575 PALM SEEDS, from Brazil, comprising:—

83,500 LATANIA BORBONICA.
6,000 RUBRA.
6,000 PTYCUS ALEXANDRINA.
7,000 PHENICOPHORUM SEYCHELLARUM.
35,000 ARECA VERSCHAFFELTII.
2,500 WALLICHIA CARYOTOFOLIA.
450 " DISTICHA.
1,000 ARECA PURPUREA.
125 DIPLOTHEMIUM CANDESCENS.

Also Standard and Dwarf ROSES, Herbaceous Plants, 100 lots of English-grown and other LILIES, STOVE and GREENHOUSE PLANTS; 50 lots of Plants from Belgium, comprising AZALEAS, CAMELLIAS, &c.; 5.0 fine crowns of SEAKALE, the Langford Park Collection of GLOXINIAS and ACHIMENES, and 150 lots of Hardy BORDER PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY NEXT, November 30, at 12 o'clock.

On view morning of Sale, and Catalogues had.

Every Day.

DUTCH BULBS, GREAT UNRESERVED SALES.
5000 LOTS SOLD WEEKLY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 & 68, Cheapside, London, E.C., every day at 12 o'clock, large consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS and other BULBS from Holland; also ROMAN HYACINTHS, LILUM CANDIDUM and other bulbs for early forcing, lotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

Friday Next.

New and Magnificent

CYPRIPEDIUM CHARLESWORTHII
(ROLFE, n. sp.)

Exhibited and unanimously awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, and pronounced by every one to be the most beautiful and charming Cypridium introduced, causing quite a sensation at the Drill Hall on Tuesday, September 26, 1893.

The special feature of this novelty is the dorsal sepal, which is quite distinct in appearance and colour to any other known Cypridium, which will render it exceptionally valuable to the hybridist.

We have been at an enormous expense in searching a country which is void of every trace of civilisation, and are pleased to say our efforts have been rewarded by the good fortune which befell our collector in discovering this new plant which has been pronounced on all sides as the finest Cypridium of its section. The plants were carried on the backs of the natives for 140 miles, under most trying circumstances, over a most wretched road. Nevertheless, we are pleased to inform intending purchasers that in consequence of the care taken the plants are in excellent condition, and embrace specimens which our collector says can never be imported again, as he gathered all the plants fit to take; to use his own words, "He left nothing but scraps."

We anticipate some wonderful varieties will crop up amongst the plants, which look very distinct indeed, the foliage of some of them being spotted up to the extreme tips of leaves, others being quite plain, with slight blotch of reddish-purple at base of the growth. The collector writes that he saw a few flowers which measured 4½ to 5 inches from tip of dorsal sepal to extremity of pouch.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, to offer the above great novelty, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 1, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

TO SEEDSMEN.—To be DISPOSED OF, in consequence of the death of the proprietor, an old-established FARM and GARDEN SEED BUSINESS, with a wide connection in a good Market Town in the Midlands, and on Two Railways. This is a rare chance for a desirable purchaser that does not often occur.—Apply to SEEDSMAN, Messrs. Hurst & Son, 152, Houndsditch, London, E.

FOR SALE.—In a good Agricultural district in Oxfordshire. A good SEED, CORN, HAY, &c., business. Only shop of its kind in the town. For particulars apply, S. T. O., Messrs. Hurst & Son, 152, Houndsditch, E.C.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold SALES at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—
EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.
EVERY TUESDAY, at 11.30 A.M.—Dutch, French, and other Bulbs.

EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THURSDAY, at 11.30 A.M.—Azaleas, Camellias, Palms, Dracænas, and other Plants from Belgium; Roses, General Nursery Stock, Carnations, Dutch and French Bulbs.

EVERY FRIDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.
EVERY THIRD THURSDAY, at 12 o'clock.—Established and Imported Orchids.

All Catalogues post free.

Messrs. JAMES AND BAXTER conduct Sales and Valuations of Nursery Stock, Live and Dead Farming Stock, &c., on moderate terms.

J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

In the High Court of Justice, Chancery Division, under an order of Mr. Justice Stirling, re SEEGER AND TROPP (Limited), 112, Lordship Lane, East Dulwich. The extensive nursery of ORCHIDS, including over 1,500 plants of the choicest sorts of MASDEVALLIAS, a distinct collection of PLEUROTHALLIS, COTOMERIAS, STELIS, about 200 fine specimens of VANDAS, a select assortment of CYPRIPEDS, 75 plants of the pure white SACCOLABRIUM, and others.

MR. FREDK. MILLER is instructed by the Receiver, under an order of Mr. Justice Stirling to SELL by AUCTION at the Orchid Nurseries, 112, Lordship Lane, on THURSDAY, November 30, at 10.30 o'clock precisely, the above STOCK of ORCHIDS, in all about 500 lots, including also Angreæms, Lælia, varieties of L. grandis, L. g. tenebrosa, L. anceps, and varieties, L. purpurata, L. crispata, &c. Cypridium, Lycastes, Miltonia, Cattleyas, Cologynus, Calanthes, about 240 Dendrobium, D. Nobilis, Zygopetalums, Phaius, Sobralias, Aërides, and a large variety of choice Orchids.

May be viewed two days prior, and Catalogues obtained of Edward L. BROUGH, Esq., the Receiver, of the firm of Messrs. LEMON AND BROUGH, Chartered Accountants, 4, King Street, Cheapside; of Messrs. GOLDBERG, LONDON, BARRETT, and NEWALL, Solicitors, 1, West Street, Finsbury Circus, E.C., and of the Auctioneer, at his offices, No. 2, Serle Street, Lincoln's Inn Fields.

Redworth.

Within five minutes' walk of the Totnes Railway Station South Devon.

HIGHLY IMPORTANT SALE OF PLANTS.

MESSRS. RENDELL AND SYMONS are favoured with instructions from A. M. Singer, Esq., to SELL by AUCTION, on FRIDAY, December 1, 1893, the whole of the valuable collection of STOVE and GREENHOUSE PLANTS, contained in Conservatory, Fernery, Plant, Melon, Tomato, Cucumber, Peach and Intermediate-houses, Vinery, &c., consisting of group of splendid Palms, variety of choice Ferns, Orchids, Rare Specimen Plants, Primulas, Freesias, Vallotas, Begonias, Abutilons, Rondeletias, Coleus, Panax, Crotons, Vincas, Marantas, Camellias, Geraniums, Arum Liliæ, Cinerarias, Cactus, Hoya, Pelargoniums, Gloxinias, Achimenes, Caladiums, Solanums, Genistas, Azalias, Spireas, Carnations, Hydrangeas, Chrysanthemums, Deutzias, Fuchsias, and 320 Potted Strawberry Plants for Forcing, in all about 1700 Plants.

The Palms are a grand show, stately in growth and well-leaved; amongst the Ferns especial mention must be made of the large Adiantum Farleyense, those being rare and costly specimens. The whole of the remainder should command the attention of Horticulturists, great care and judgment having been displayed throughout the collection.

Catalogues, 3d. each, can be obtained of the Auctioneers, on and after November 24. On view day previous to Sale, from 10 A.M. to 3 P.M., and on morning of Sale after 9 A.M.

Sale to commence at 11 A.M.

Dated, Nov. 21, 1893.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited, The Vineyard and Nurseries Garston. In Liquidation.

The Liquidator wishes to obtain TENDERS for the ENTIRE BUSINESS, STOCK, and UTENSILS IN TRADE, as a Going Concern, as from the 30th of November inst.

Tenders must include the Entire Stock, Utensils, and the Goodwill of the Business. The Stock consists of Orchids, Grape Vines, Tea Roses in pots, Ferns, and General Stock of Stove and Greenhouse Plants.

The Nursery and Greenhouses can be had on an Annual Tenancy, and subject to a Moderate Rental.

The Liquidator's representative will show the Premises and Stock any day from this date.

Tenders must be marked "Tender for Nurseries," and be sent in not later than November 28, to GEO. NICHOLSON, Esq., Messrs. Harwood, Banner & Son, 24, North John St., Liverpool.

SUNNY SOUTH.—MATURED GARDEN, 16 Acres, thirty Green and Vine-houses, two Cottages. Easy terms.—ELDRIDGE, Portland Club, Southsea. Letters enclose stamp.

FLORIST and SEED BUSINESS TO BE SOLD, 6 acres of land, ½ acre of Strawberries made £18 this year; house, shop, four Greenhouses, stable, &c. on lease, rent £21.—JOHN DAY, Parliament Terrace, Harrogate.

TUNBRIDGE WELLS.—To FLORISTS.—Old-established BUSINESS for DISPOSAL. First-class situation in aristocratic town. Incoming moderate. House and Shop, only £15 yearly. Capital opening for a practical man.—Mr. TURRALL, Auctioneer, Goods Station Road, Tunbridge Wells.

ASHFORD NURSERY.—TO BE LET or SOLD, with large quantity of Glass-houses, two Cottages, Stabling, Bothy, Workshops, and Outbuildings. Lease, 28 years. No reasonable offer refused. Apply to view, to Mr. CORNICK, The Vineries, Ashford, Staines, Middle ex.

FRIDAY NEXT.

NEW AND MAGNIFICENT CYPRIPEDIUM CHARLESWORTHII

(ROLFE, N. SP.)

Exhibited and unanimously awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, and pronounced by every one to be the most beautiful and charming Cypripedium introduced, causing quite a sensation at the Drill Hall on Tuesday, September 26, 1893.

The special feature of this novelty is the dorsal sepal, which is quite distinct in appearance and colour to any other known Cypripedium, which will render it exceptionally valuable to the hybridist.

We have been at an enormous expense in searching a country which is void of every trace of civilisation, and are pleased to say our efforts have been rewarded by the good fortune which befell our collector in discovering this new plant, which has been pronounced on all sides as the finest Cypripedium of its section. The plants were carried on the backs of natives for 140 miles, under most trying circumstances, over a most wretched road. Nevertheless, we are pleased to inform intending purchasers, that in consequence of the care taken, the plants are in excellent condition, and embrace specimens which our collector says can never be imported again, as he gathered all the plants fit to take—to use his own words, "He left nothing but scraps."

We anticipate some wonderful varieties will crop up amongst the plants, which look very distinct indeed. The foliage of some of them being spotted up to the extreme tips of leaves, others being quite plain, with slight blotches of reddish-purple at base of the growth. The collector writes that he saw a few flowers which measured $4\frac{1}{2}$ to 5 inches from tip of dorsal sepal to extremity of pouch.

MESSRS. PROTHEROE & MORRIS have received instructions from Messrs. CHARLESWORTH, SHUTTLEWORTH & Co., Heaton, Bradford, to offer the above great novelty at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 1, at half-past 12 o'clock.

On view morning of Sale, and Catalogues had.

FOR ORCHIDS and GARDENERS
to Grow Them, apply to SANDER'S, St. Albans. The finest stock of Orchids in the World.—30 minutes from St. Pancras.

PINES—PINES—PINES.—Four dozen good succession Queen Pines to be sold, cheap. Price 30s.—Apply to Mr. J. BROWN, The Gardens, Great Doods, Reigate.

TO MARKET GARDENERS.—For Sale, a quantity of CHAMPAGNE RHUBARB ROOTS. Apply to T. MATHEWS, East Ham, Essex.

MARÉCHAL NIEL Tea-scented ROSES, for Early Forcing in Houses, or Outdoor Walls, from 7 to 9 feet high, 18s. per dozen; 4 to 6 feet, 12s. per dozen. DENNIS HEATHER, West End, Chobham.

Covent Garden Market.
CHAS. E. COOPER, WHOLESALE FLORIST and COMMISSION SALESMAN, 33, Russell Street, Covent Garden, and 370, New Flower Market, W.C., is open to receive consignments of choice Cut Flowers, Ferns, Foliage, &c. Also the Provincial Trade supplied at market prices. For terms and further particulars, apply as above. Price List on application. Telegrams, "LAPAGERIA, London." Bankers, The National Bank, Limited, Charing Cross Branch.

PALMS, FERNS, &c.—FERNS in Variety.—ARALIAS and CYPERUS NATALENSIS in 48's, 6s. per dozen; LARGE A. CUNEATUS in 48's, 6s. and 7s. per dozen; PALMS in variety, and FICUS in 48's, 12s. per dozen; PALMS, fine stuff, in large 60's, 5s. per dozen; FERNS and CYPERUS, in 2½ inch pots, 12s. per 100. Almost any kind of Plants in season supplied at lowest possible prices. Well packed in or out of pots. Free on rail. Cash with order. LANE and MARTIN, 227, Brixton Road, London, S.W.

To Nurserymen, Builders, Local Boards, Vestries, &c. AND OTHERS WHO INTEND PLANTING TREES and SHRUBS THIS SEASON.

ROBERT NEAL, The Nurseries, Trinity Road, Wandsworth, S.W., begs to offer an extensive stock of FOREST and ORNAMENTAL TREES, SHRUBS, ROSES, GRAPE VINES, FRUIT TREES, CLIMBING PLANTS, &c., which being grown in the neighbourhood of London are especially suitable for Town Planting. Also a large stock of extra fine SEAKALE and RHUBARB, for forcing. CATALOGUES free on application.

COVERT, &c.—Broom, Common Yellow, 2-yr. seedlings, 5s. per 1000; ditto, 2½ to 4 feet, 20s. per 1000. GORSE or WHIN, Common, 2-yr. seedlings, well-rooted, 4s. per 1000; 90s. per 25,000. Ditto, 1½ to 2 feet, 15s. per 1000. RHODODENDRONS (Ponicum Hybrids), singly grown bushy plants, in bloom buds, 4 to 5 feet, and as far through, 48 10s. per 100; sample dozen, 24s. Hardy Herbaceous Plants and Alpines in variety. LIST free on application. SAMUEL SMITH, Slaghills Nursery, near Matlock, Derbyshire.

NOTICE.

MESSRS. JAMES AND BAXTER, HORTICULTURAL AUCTIONEERS and VALUERS, of BULL RING, BIRMINGHAM, beg to inform their clients and friends that, owing to their business having increased so rapidly, they have been compelled to take much larger premises, and after the 30th inst. their business will be TRANSFERRED to their new Sale Rooms and Offices, 35, TEMPLE STREET, BIRMINGHAM, where all communications should be addressed. These Rooms have been specially built, and are undoubtedly the finest in the Midlands, are heated with hot water, and lighted by Electric Light.

Messrs. J. AND B. hope to have their new City of London Sale Rooms open next S. ring.

RASPBERRY CANES.—Northumberland Fillbasket, strong, well rooted, 8s. 6d. per 100, on Rail, nett Cash.—THE ORCHARD COMPANY, Scotby, Carlisle.

GRAPE VINES, strong planting canes, Black Hamburg, Foster's Seedling, or Lady Downe's, well rooted and ripened, 6 to 8 feet long, 18s. per dozen, or £6 10s. per 100.—BAXTER, Willowside, Tooting.

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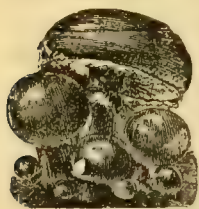
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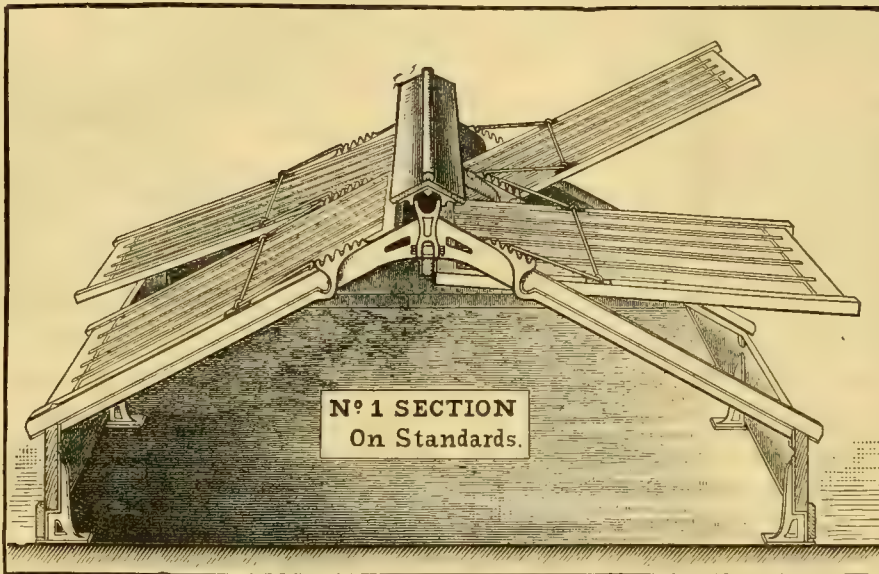
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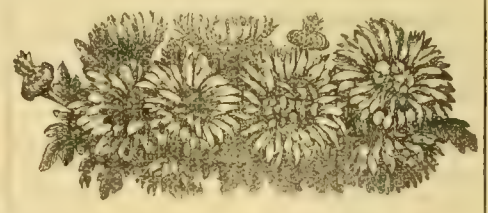
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 25, 1893.

CANNAS.*

I FIRST recollect Cannas as one of the most important series of plants which, so skilfully used by the late Mr. Gibson in Battersea Park, led to the making of a sub-tropical garden in every place of size and gardening importance; but it was for their foliage alone they were valued, and we all recollect the noble beds of reddish foliage of the Warscewiczii and nigricans race, and the fine beds of such green-leaved sorts as Annei and limbata, still found in the Paris gardens [Especially at the Park Monceau. Ed.]. But when M. Crozy, of Lyons, introduced a series of Cannas with showy finely-formed flowers, the plants began to be again inquired for, and anyone who, like myself, saw the fine beds which he planted out in the last great Paris Exhibition, 1890, was quickly won by the beauty of the new race. They were most effective, and seemingly of easy culture in the open air. Plants of vigorous 6 to 7-feet growth of fine leaves, topped with showy flowers, very varied in colour, and perpetual in habit of flowering, were, indeed, a striking novelty. The flowers were yet somewhat ragged, as one looks back to the varieties which were the novelties of that year; but they were some of the kinds which we still think good: Henri Vilmorin, not yet beaten in its colour; Petite Jeanne, the first dwarf gold; Victor Hugo, one of the good kinds, brilliant red, with dark foliage; The Garden, the first vermilion-red; President Hardy, salmon-fawn; Comte de Choiseuil, amongst crimsons, were amongst them, and from that date until now, the indefatigable French raiser has gone on, year by year, giving us plants of dwarfier freer habit, finer individual flowers, each year with broader petals, of thicker texture, and finer spikes, till we have in this season's novelties varieties such as Sophie Buchner, L. E. Bailey, and Alphonse Bouvier, bearing flowers almost equal to Gladioli.

In a very brief note (for my request for information gave M. Crozy barely time to catch the post) he says:—"My *début* in the race of Cannas dates from about twenty years ago. I began with Warscewiczii and nepalensis grandiflora, a tall variety of which I have reduced its height little by little. My first gain was C. Bonnetti, a variety much appreciated at the time; since that period, constantly progressing, I succeeded in obtaining the splendid variety Madame Crozy, which by the year I had it ready to put into commerce, had given me 1500 seedlings. These flowering have given me all shades of colour, and since then I have improved in the rose and carmines, even attaining nearly to whites." So far M. Crozy; a good brief record of sound floricultural work.

* Paper read before the Horticultural Club, November 14 by George Paul, Cheshunt.

M. Vilmorin has also done some work in this way successfully, as two certificated varieties grown at Chiswick show, one, Quasimodo, is in most lists. Herr Pfitzer, amongst Germans, has laboured in the same lines. I have attempted some hybridising, but though satisfied with the dwarfer habit and fine flower in the yellows, I do not think that I or other raisers have yet rivalled Crozy's gains. In a quantity of seedlings, the proportion of good seedlings is small, the majority reverting to older types. I think seven or eight were all I selected from 400 or 500 which flowered when planted out this season.

Their outdoor culture is simple. Prepare the ground as for Dahlias, plant young-growing plants, if on a lawn, in massive beds, about 3 feet apart, in rich soil, and beyond some watering to establish the plants, and a possible mulching if the weather is dry, nothing more is needed. The earlier they are put out the better, so long as it is past the time of the May frosts. They soon flower, and keep on until they are either cut down like the Dahlias (when they should be taken up and stored in a similar manner), or, what is better still, they can be utilised for winter flowering. This season I made a good experiment. Lifting out of a bed of seedlings all the plants with showing spikes, they rose with good balls, and were placed in a light house on a stage near the glass, the balls covered with cocoanut fibre. With a gentle warmth all the finest flower-buds expanded, giving very useful spikes of flowers; or taken up, they may be at once split into young plants, after a short period of rest be grown on in a temperature fairly moist, of say 60° to 65° by day, and the young plants soon throw up continuously one or more spikes of useful winter flowers. Last year I had a fine batch in January, and these plants continued flowering throughout the year, giving something like five or six crops, in fact we were never without Canna flower-spikes. I think for pots the keynote of culture is alternating the periods of growth and rest.

The constantly potting of the plants into larger pots, say three times a year, until they become specimens too clumsy to handle, should be deprecated, but, if kept in the same pots, they should be heavily mulched and fed highly. Perhaps masses of roots congested in pots may tend to freer flowering, but the spikes are not so fine. Soil should be sandy loam and rotted manure; they take much water like most large leaved plants, but need good drainage. Up to the present the best-named varieties are amongst crimsons, Alphonse Bouvier; Sophie Buchner, Paul Bruant, purple; Miss Sarah Hill, rich crimson; C. H. de Choiseuil, rosy-crimson; and the fine old Victor Hugo, with its crimson foliage. There are some good salmon-reds, varying to vermilion, in President Hardy, Professor David, Cronstadt, Souvenir d'Asa Gray, Thos. S. Ware, and The Garden. Some quaint mixtures of crimsons and yellows in Henri L. Vilmorin and Count de Ganay. The best-margined flowers are Paul Sigrist, Marquise d'Aigle, and Admiral Gervais, and last, but not least, Madame Crozy.

But the greatest advance, in my opinion, is in the gains of the last two years in the new yellow-spotted varieties. The first of the series was in 1892, when Comtesse d'Estoire, a beautiful delicate flower with yellow base and carmine spots. This was followed by the beautiful golden variety with crimson spots, Progression. Antoine Barton, soft yellow spots, the yellow counterpart of Madame Crozy and F. L. Bailey, a lemon with beautiful carmine spots,

I do not know what further lines the Canna may take. In his lecture on Cannas, Mr. Baker pointed out two or more species which might profitably be used in the way of hybridisation. I may point out that the drooping form of the variety of Iridiflora, such as Ehmanni, may be of service, and a white variety C. nevalis, may further the march towards pure whites, a desirable attainment. On the whole, we have gained a new series of flowers with hardy character for outdoor summer decoration, and for easy winter and summer indoor culture.

A few notes as to raising seedlings. I find they should be sown in February on bottom-heat, the seeds just laid down on the stage bottom, and with a slight covering of cocoa-nut fibre. When they have started, they should be potted in small pots, and as soon as these are filled with roots, re-potted in 48's, then be hardened-off in a cold frame ready for planting in May. In dividing, please note that the old roots do not seem to send out fresh fibres; but young roots are thrown out from the base of the crowns. A few hot seasons like the past will make these plants more popular as out-door plants, and I venture to think their popularity as pot-plants will also quickly increase. *George Paul.*

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM × LEEANUM, YOUNG'S VAR., *new var.*

This is equal in size to the beautiful C. × L. giganteum, but of a much darker colour, and it seems to be the largest of the dark-tinted forms of this very variable plant. The upper sepal is nearly 3 inches wide, its lower half of an uniform bright green colour, and from the base dark dotted lines ascend, which appear of a chocolate colour on the green ground, but purple where they are more thinly scattered on the broad white margin. The petals are broader, and the pouch larger than in other varieties, and the whole flower bears evidence that very fine forms of C. Spicerianum and C. insigne must have been used in its production. It was flowered by Reginald Young, Esq., Fringilla, Sefton Park, Liverpool.

LÆLIO-CATTLEYA × BRYMERIANA (L. C. × AMANDA × C. WARSCWICZII).

For the second time flowers of this fine hybrid between what are called in gardens Lælia Rothchildiana and Cattleya gigas, are sent by W. E. Brymer, Esq., M.P., Hsington House, near Dorchester, whose gardener is Mr. J. Powell. The plant is said to be intermediate between the varieties crossed, and the same may be said of the flowers, which in the first specimen sent, measured more than 6 inches across; but the two now to hand are not quite so large. The petals and sepals are of a pale lilac hue; the base of the labellum is of a rose colour, which deepens towards the tips of the side-lobes to rose-crimson. The same rich hue prevails over the greater part of the surface of the beautifully-crimped front-lobe, but it gradually becomes of a lighter tint towards the edge. There are white and yellow lines at the base of the lip. It is a very fine plant, and evidently very floriferous.

CYPRIPEDIUM CROSSIANUM × CASTLE HILL VAR. (CROSSIANUM × INSIGNE CHANTINII).

Although in this case C. × Crossianum (insigne × venustum) has been again crossed with a form of C. insigne, I see nothing in it which would serve to sufficiently distinguish it or to cause its removal from the variety named, which in itself affords numerous variations. The result of again crossing with C. insigne Chantinii has been to produce a very brightly-coloured flower, in which the ground colour is yellower than in other forms. There is also present in the progeny of this cross a broad pure

white margin, with some bright purple spots on the upper sepal. The whole flower has a polished surface, and the markings are clearly defined. It was raised and flowered in the gardens of Geo. C. Raphael, Esq., Castle Hill, Englefield Green. *James O'Brien.*

COMMERSON'S MONUMENT IN MAURITIUS.

THE following letter has been received from the Superintendent of the Royal Botanic Gardens in Mauritius, which may probably interest those of your readers who noticed the account given of Philibert Commerson in the pages of the *Gardeners' Chronicle* some little time since. *S. Pasfield Oliver, Captain.*

"Royal Gardens, Pamplemousses, Sept. 23, 1893.

"I received yours by last mail and would have answered you at once, but at the time could not do so. I read with much pleasure your articles on Commerson in the *Gardeners' Chronicle*, and will do anything I possibly can to assist you in any way whatsoever. I am sorry to say that we do not possess a single plant of Polycardia in the gardens, and I shall be delighted if you would write to your friends in Madagascar and move them in the matter. I will make everything right when they arrive here.

"I cannot find out where Commerson is buried, but when passing I always stop to look at the monument at 'La Retraite.' I intend to photograph it next time I go that way, and shall send you a copy.

"Your suggestion quite falls in with my ideas, and I shall get some Bougainvilleas planted near to the monument, together with some of our Mauritius Palms, particularly *Latania Commersonii*.

"I am glad you have taken up this subject, for it has struck me that a great deal of noble work can be done in keeping green the memory of those early toilers, whose names are in many cases looked upon as a reference only. It may seem strange, but I have never met anyone here who can tell me anything about Commerson; they have heard of the name, and that is all. Trusting to hear from you soon again. *William Scott.*"

ORCHID NOTES AND GLEANINGS.

PICKERING LODGE, TIMPERLEY, CHESHIRE.

THE Cattleyas of this garden, at the present time in fine bloom, form an interesting floral feature, there being 190 large flowers expanded of the following species and varieties: C. labiata vera, an example 3½ feet in diameter, with seventy remarkable flowers; a plant of C. labiata, in a 9 inch pot, and carrying six fine spikes of large flowers of a rich shade of colour; two plants of C. aurea, with four flowers; a plant of C. Massiana is very fine—this is a supposed cross between C. aurea and C. Sanderiana; C. Bowringiana has four spikes averaging fifteen flowers each, another with eighty flowers, and one with sixty flowers—one spike of this plant bearing sixteen flowers. In a span-shaped house, 20 feet long, with stages of 3 feet in width on either side, there are two groups of C. labiata, every plant in perfect health, sturdy in growth, and the number of fully-expanded flowers about 600, of the greatest beauty and diversified shades of colour. Mr. Hardy and his gardener may be justly proud of such fine plants as the above. *H. Ellis.*

PHALENOPSIS GRANDIFLORA.

We have a plant of the above species now carrying forty fully-expanded flowers, each flower measuring over 3 inches in diameter. There are yet other blooms to open on the same spike, and yet another strong later spike which has not yet commenced opening its flowers [a very unusual number of blooms. Ed.] There are other plants of the same species, with flowers measuring over 3½ inches, with from eight to twelve blooms on each. P. Schilleriana, the first to flower, which generally commences to open early in the new year, and of which we

always have a grand display until well into April, is, as usual, throwing up finely and strongly, and from one plant, which has thrown two flower-spikes, each spike bears a young plant, which I have mossed round, and when rooted it will be cut off, and grown on in the usual way. *G. W. E., Henham.*

pretty rosy-crimson flowers are disposed. The lips display great variation, some having the centre white, and with a purple blotch. Others have little white, but various shades of rose colour. Such an elegant display of flowers in the dull season is a good reward for the care taken of the plants.

several horticultural societies in that country. It is probable, therefore, that its history is known there. At present, there is some doubt that the plant is a hybrid, partly from the fact that it comes true from seeds—the Kew plants were raised from seeds received from Melbourne in 1889—and also that it



FIG. 104.—TECOMA SMITHII: GREENHOUSE SHRUB; FLOWERS WITH ORANGE-COLOURED TUBE AND YELLOW SEGMENTS.

(Shown at a meeting of the Royal Horticultural Society on October 10, 1893.)

BARKERIA LINDLEYANA (EPIDENDRUM LINDLEYANUM).

Nine plants of this fine species are in flower in the collection belonging to F. Wigan, Esq., at Clare Lawn, East Sheen, Richmond, where Mr. W. H. Young, the Orchid grower at Clare Lawn, manages the Barkerias well, although many consider them very difficult to grow. The plants are in fine health, and bear spikes about 18 inches long, on which the

TECOMA SMITHII.

It is desirable that something more definite should be known of the origin and history of this beautiful plant than has been recorded up to the present. We are told that it was raised in Australia from *T. capensis* crossed with *T. velutina*, the latter a variety of *T. stans*, and that it has been certificated by

looks suspiciously like a form of *T. stans*. This species varies considerably, some of the varieties being large and handsome in flower and shrubby in habit, whilst others are scandent and less attractive. *T. velutina*, one of the supposed parents of *T. Smithii*, is itself a beautiful plant, which was introduced from Guatemala by Skinner about fifty years ago, who sent seeds of it to the Royal Horticultural Society,

from whence it was distributed in hundreds. Skinner described it as one of the finest plants in Guatemala, flowering freely during a large part of the year, with Ash-like leaves and great terminal racemes of magnificent yellow flowers, in no respect inferior to an *Allamanda*! It is remarkable that this plant, which is said to have flowered freely in this country in nine months from seeds, was never figured in any English periodical; and, as far as I can make out, it did not remain long in cultivation here. The only record I can find of it is in the *Gardeners' Chronicle*, 1855, p. 820. Is it in cultivation now? Apparently, it has found its way into Australia, and, if so, English horticulturists would like to receive it back. *T. Smithii* might also be taken for a robust form of *T. fulva*, figured in *Bot. Mag.*, t. 4896. This, *T. stans*, and *T. mollis* are very near each other. *W. W.*

ORCHID CULTURE IN BELGIUM AND IN ENGLAND.

THE letter which Mr. Watson, the well-known assistant-curator at the Royal Gardens, Kew, contributed to a recent number of the *Gardeners' Chronicle*, seems to convey the idea that in commenting upon certain methods of Orchid culture pursued in England, and which seem to me less well understood in that country than in Belgium, I have not rated the English gardeners at their right value. It was before the publication of Mr. Watson's letter, which appeared in your issue of the 11th of this month, that I published in my *Journal des Orchidées* on November 1, the following commendation of his compatriots and his country:—"There are in England a great number of excellent gardeners. A visit to any horticultural exhibition shows that, for there may be seen unrivalled specimens of all classes of plants. Personally, I admire England with its scientific institutions, which are the first in the world, both as regards the progress in science and their excellent organisation; for instance, the gardens at Kew and their cultural achievements, their eminent botanists and wonderful herbarium. I admire the English horticultural press, so generally useful, so progressive; also the unrivalled private collections and fine horticultural establishments of this great and noble country." I should not like any one to attribute to me in England, where I have many friends, or elsewhere, any opinion which I do not really hold, and I am no "Chauviniste."

I must further remark that I am only alluding to Orchids in the article to which Mr. Watson alludes, the English are so superior in other branches of horticulture that they may well yield to us in this. Mr. Watson makes a very true remark concerning the special modes of cultivation peculiar to the respective countries. But then he writes:—"Certainly the Orchids generally in M. Linden's establishment are splendidly grown. I have never seen such fine collections of *Odontoglossums*, *Masdevallias*, *Vandas*, and *Cattleyas* anywhere." If he believes that these results are due to the fact that our ground is situated between the Luxembourg station and the Parc Léopold, I think he is making a little mistake. I know him to be too skilful and experienced not to have noticed that if our cultivation of Orchids is so good it is because we endeavour to give our plants an artificial climate like that of the regions whence they come. If our *Odontoglossums* and *Masdevallias* surprise our visitors so much, it is because in the houses which are assigned to them by us they have as much air, light, coolness, and moisture, as on the high Cordilleras. These methods are pursued in accordance with the instructions of M. J. Linden, my father, who brought back from his long exploratory travels accurate observations. We have simulated the climate of the Cordilleras as closely as possible, only the mountains are lacking. This is the reason why no collector returning from Columbia but exclaims on entering our alpine plant-houses, that he could believe himself again among the Columbian mountains. This MM. Claes and Bungeroth told me two months ago, and so M. Edouard Klaboch, who has just travelled for us, said to me a week ago. I do not experience

the same feeling in the *Odontoglossum*-houses which I have visited near London, and according to my habit of saying and writing what I think frankly, I have said so in my *Journal des Orchidées*, believing that it would be useful to such of my English friends who ask me when they visit our houses:—"But how do you grow Orchids so well? Do you use manure?" This last question was put to me by Mr. Watson himself recently, and I assured him, as I have stated many times, that we use no manure, as could easily be proved by analysing the compost. An artificial mountain climate, good and sweet potting materials, rain-water invariably used for watering, and constant attention; such are our secrets as regards the culture of *Odontoglossums* and *Masdevallias*. It is plain to me that if this same treatment were adopted in England—that is to say, that if to Orchids from the high Cordilleras were given such a climate as that to which they are by nature accustomed—success in cultivating *Odontoglossums* and *Masdevallias* would be as complete as with us. I have said that the method of cultivating them with excessive heat, insufficient ventilation, light and moisture, and on stages covered with coke, which intercept the circulation of the air, is prejudicial to plants; I repeat, that I believe these to be important matters. If the *Gardeners' Chronicle* would give me space, I would willingly contribute to it notes on our plan of cultivating *Odontoglossum*, *Masdevallia*, *Vanda*, *Cattleya*, and other species.

I could show, perhaps, in these articles that the difference in the climate of England and Belgium is of little importance as regards plant-growing under glass, and that it is always possible to artificially modify these climates, so as to equalise them one with another. Far be it from me to think to thrust my plans on English growers. It is even very probable that in England one might grow *Odontoglossums* otherwise than is done in Belgium; but as I consider certain Orchids less well treated in England than here, I must say that the system of cultivation is badly arranged, that it is wanting in certain points, and that these defects should be supplied. I claim that our climate goes for nothing in the end, the proof of which is, that as Mr. Watson himself says, there are many places in Belgium, even among our own neighbours, where cultivation is far from perfect. These persons have not yet found the "something" wanting. As to blooming, it follows necessarily that this must be fine where the vegetation is good and the pseudobulbs large and firm. Our visitors are always surprised at the size and thickness of the flower-stems of our *Odontoglossums*, and at the profuse blooming of most of our Orchids. Further, as I could explain in my articles, preparation for the blooming is given great importance in our system of cultivation.

Before concluding this rather long note, allow me to reciprocate Mr. Watson's compliments as paid to our establishment by saying, that on my last visit to England two months ago, I was struck with the cultural achievements in the Royal Gardens, Kew; and let me offer my hearty congratulations to the Director and Curators, as well as the managers of the collections of Baron Schroder, Mr. Measures, and Sir Trevor Lawrence—the only large amateurs' collections I had time to visit—who will receive them as coming from a cosmopolitan observer, who can appreciate fine plants wherever found, and is convinced that the word "nationality" has no importance in horticulture; that there are skilled and unskilled men everywhere, that birth-place goes for little in a man's character, and should influence (*passionner*) no one. *Lucien Linden, Brussels, Nov. 14, 1893.*

— Since I read the views of M. Lucien Linden on Belgian or French methods and men, as compared with British methods and men, I have been expecting to see the gauntlet taken up, and I was not at all surprised at Mr. W. Watson's sturdy expression of his opinion on the subject on p. 596 of *Gardeners' Chronicle*, Nov. 11, of this year. The whole thing seems to me a question of brains, plus a good climate, i.e., a good climate for the cultivator, if possible, as well as for the plants he grows. In the main, Mr. Watson is undoubtedly right when he says that

English methods, even of the best, would fail to yield the same results in France or Belgium, and *vice versa*. This is self evident, seeing that the conditions are so different in each case. But as I said, it is mainly a question of the most logical head, and the most healthy or energetic body, both specially well-trained, by which I mean that the really well-educated gardener soon adapts his principles and methods to any and all conditions, native or otherwise. Hence, no doubt the demand for English, Scotch and Irish, or Welsh gardeners and tea-planters, and foresters, and *Cinchona* growers in India, Ceylon, and elsewhere. This also means broadly, that the European gardener is the best in Asia, Africa, and America, educated brains and hardy bodies being best even under adverse conditions for both. I say this, although I do not forget the skill of the Chinese gardeners everywhere, and especially that of the Japanese in their own country.

To consider the question as to whether English, Irish, Scotch, or Belgian gardeners are best, would lead to no practical or good results whatever. But as Mr. Watson praises the English as cultivators, for their adaptability, "of course including the Scotch," as cultivators, may I venture to ask why he did not include the Irish as well?

"Paddy" is insulated, and a little behind the times, perhaps, for that very reason, but at cultural "adaptability" he can give points to any nationality on earth, and beat them at their own game. Search where you like, remembering that the whole population of Ireland itself does not equal that of London, and where can you find so much ability? Has London given us greater names than Wellington of yesterday, and Wolseley of to-day? In the church, at the bar, in the medical profession, and in the house of Commons, not only in England, but also in greater Britain, in America and the Colonies, you find the Irishman in the first positions. It is the same to a great extent in our own craft, in which many Irishmen particularly excel, even in London, where the names of Casey, O'Brien, and many others are not unknown. In America there are a still larger proportion of Celtic gardeners, many of them in the front rank as nurserymen and cultivators. *F. W. B.*

KEW NOTES.

SONERILA MACULATA.—This is the correct name for the plant introduced by Mr. Bull three years ago, and distributed by him under the name of *S. orientalis*, varieties. The purple-leaved variety is now flowering profusely in the stoves at Kew, and is an ornamental little pot-plant of about 9 inches high, and crowded with purple leaves and numerous erect little bunches of pink flowers. *S. maculata* is a native of Assam, the Khasia mountains, and Tenasserim. Although a common plant, and well known to botanists, it does not appear to have been introduced into cultivation before Mr. Bull obtained it. The well-known *S. margaritacea* is supposed to be a native of Sikkim, but it has not been recorded wild. It was introduced in 1854 by Messrs. Veitch & Sons. There are now numerous named varieties of it, all of garden origin, the best of them being *Hendersoni*, *argentea*, and *Mamei*. *S. elegans* and *S. speciosa* are other handsome little flowering pot-plants which have been introduced.

Freylinia cestroides.—Flowering specimens of this interesting Cape shrub have lately been sent to Kew by a correspondent in Cannes, who says it forms a handsome bush there, and flowers freely in November. It has erect branches, clothed with opposite linear lanceolate green leaves five inches long, the flowers being borne in crowded, erect, terminal panicles; they are cream-yellow coloured, and are tubular in size and form, suggesting *Cestrum* or some species of *Buddleia*. It looks like a plant that requires a maximum amount of sunshine and summer heat to make it flower freely. *Freylinia* is a small genus of *Scrophulariaceae*, and is related to *Phygellus* and *Ixianthes*. Other names for *F. cestroides* are *Buddleia glaberrima*, *Capraria lanceolata*, and *C. salicifolia*.

Freylinia longiflora, a second species, with Box-like foliage, and crowded panicles of white flowers an inch long, is a plant worth introducing from the Cape.

Rosa gigantea.—This extraordinary Rose grows at an amazing rate, the plant in the Temperate-house at Kew having shoots 1 inch in diameter, but as yet it shows no signs of flowers. Age is probably all that is needed to induce the plant to flower. Meanwhile, our appetites may be whetted by the following note from a correspondent who lives near the home of the Rose in Burma. He writes:—"Rosa gigantea grows in profusion immediately opposite the window I am now writing at, and for 100 yards or more away. The stems of some of the plants are as thick as a man's thigh. It is a creeper, and does not flower until it gets over or beyond the tree it climbs. These specimens are on large evergreen trees, and their roots are in limestone and vegetable mould, through which run innumerable springs of pure water. The boles of the Roses never get the sun, and they are always in the neighbourhood of spring water, which some of their roots no doubt find. The whole southern and western aspect of this group of large trees is covered up to 50 or 80 feet in height with Rose sprays, and when in full bloom it looks like a sheet of white, and the air all round is most beautifully scented. It is certainly a glorious sight. The ground is strewn with the seeds of the Rose in July."

Selaginella Pitcheriana.—The plants sold under this name at the recent sale of the collection of plants at Messrs. Pitcher & Manda's Nursery, Swanley, are *S. erythropus* var. *minor*, a fairly well-known plant in English collections.

Phytolacca abyssinica.—Specimens of the Jaborandi, *Pilocarpus pennatifolius*, have lately been received at Kew under the above name. This plant is the source of a valuable drug known as Pilocarpine, and is a native of Brazil. It has been in cultivation many years at Kew, and a figure of it was published in *Bot. Mag.*, t. 7235. The inflorescence is a simple spike 18 inches or 2 feet long, clothed from base to apex with small star-shaped purple flowers with yellow anthers. It thrives in a greenhouse temperature. W. W.

COLLECTING IN SOUTH ARABIA.

WE learn that Kew has made arrangements for a young gardener, Mr. W. Lunt, to accompany Mr. Theodore Bent's expedition to South Arabia as collector of plants and specimens for the gardens. There are good reasons for believing that the flora of that part of Arabia to be visited is exceptionally interesting, both botanically and horticulturally, and we are therefore glad that Kew has seized the opportunity to send a collector. In our opinion, it would be worth while to send plant collectors with all expeditions into countries where the flora is unknown or interesting. There are many horticulturists who take an interest in other plants beside Orchids, but comparatively little is done in the way of introducing new plants except Orchids. The following is an account of the Arabian expedition given by Mr. Bent to a representative of Reuter's Agency:—

"The objective point of my new expedition is the Hadramaut, the ancient frankincense country, and one of the four ancient kingdoms of Southern Arabia which formerly supplied the world with its more important luxuries. A botanist from Kew will accompany us, and we shall be met at Alexandria by an Arab zoological collector, and at Aden by an Indian surveyor. Our expedition will thus number five persons, but this will, of course, not include interpreters and a native escort, which will be provided by the Sheikh of Makulla, whose influence extends over the whole field of our proposed operations."

"Speaking of the country to be explored, Mr. Bent said:—

"It is practically unknown, the only European who has visited it being a German traveller, who went there early in the thirties, and who gave but scanty information. The district to be explored lies

about 300 miles up the coast from Aden, and consists of a narrow strip between the sea and the desert, the area of which is absolutely unknown. It is, however, reported to be rich in ruins and inscriptions of the old Hadramaut kings. On arriving at Aden, my expedition will proceed up the coast to Makulla, a distance of 300 miles, and thence in all probability camel riding will be our mode of travelling. After leaving Makulla, our movements will be guided by what the Sheikh tells us we can do. We expect, however, to complete our work by about April, when we hope to return to England. I decided to explore this district in continuation of my work previously done in Abyssinia and in Mashonaland, and to obtain further evidence as to the early wealth and power of the southern Arabian kingdoms. The expedition has received support from the Royal Geographical Society, the British Association, and the Royal Society.

"I have every confidence," said Mr. Bent, in conclusion, "that the expedition will have important results, not only from an archaeological, but from other scientific points of view."

EXPERIMENTS IN CHECKING POTATO DISEASE.

THE experiments on the use of Bordeaux Mixture as a remedy against Potato disease, which were conducted in the United Kingdom and abroad in 1891, formed the subject of a special report which the Board of Agriculture laid before Parliament in 1892. Further experiments of the same class have now been prepared in continuation of the information then given.

Although the Potato disease was not prevalent to any considerable extent in Europe in 1892, except in some districts in Ireland, it was present in England and some parts of the Continent in a sufficient degree for the purpose of the further experiments that were carried on in various places to test the preventive or remedial action of sulphate of copper compositions. The results of the later experiments confirm the experience of previous trials, and show that the treatment of Potato plants with mixtures of sulphate of copper operates in certain circumstances as a check to the malignant affection caused by the fungus, *Phytophthora infestans*.

EXPERIMENTS BY THE ROYAL AGRICULTURAL SOCIETY AT WOBURN.

The following conclusions may be drawn from the results obtained:—

1. That neither the ordinary Bouillie bordelaise, nor the Bouillie bordelaise sucrée, had an entirely preventive effect, though both of them, when applied early and before disease appeared, succeeded in lessening the extent to which disease proceeded.

2. That neither dressing when applied after disease appeared had any material effect in curing the disease.

3. That the addition of sugar to the ordinary mixture did not constitute any advantage, but only added to the expense.

4. That the effect of either dressing upon the weight of produce was uncertain, but tended in the majority of cases to increase rather than to diminish the crop.

5. That, in view of the lessening of disease, and the increase, in the majority of cases, of the crop, the early application of the ordinary Bouillie bordelaise is to be recommended as a remunerative one.

EXPERIMENTS BY THE ROYAL AGRICULTURAL SOCIETY IN 1892.

Six different localities were chosen—five in England, viz., in the counties of Kent, Beds, Devon, Lincoln, and Cheshire; and one in (South) Wales. Putting together the results obtained from the different stations, excluding Cheshire, there is a unanimous verdict upon four points:—

1. That the dressing with Bouillie bordelaise, though it does not entirely prevent disease, has a marked effect in lessening the extent to which disease spreads.

2. That associated with the lessening of disease is an almost certain increase of crop, which more than pays for the cost of application of the dressing.

3. That the best treatment is an early application of the mixture before the disease has made its appearance, and this should be repeated if the marks of the first dressing have been removed by rain.

4. That, even if delayed until disease comes, a lessening of the spread of disease may to some degree be effected by a late dressing, and the crop, as a rule, will be sufficiently increased to pay for the application.

The results in Cheshire appear to be the only ones that tell adversely to the utility of the dressing, and even here, in the case of one of four crops experimented upon, a large gain in yield was experienced.

EXPERIMENTS BY MESSRS. CARTER & CO., AT BROMLEY.

In 1892, Messrs. Carter carried out a series of experiments with the varieties of Potatoes, the special object being to prove whether it would pay Potato-growers to insure, as it were, their Potato crop against disease by dressing them twice with Bouillie bordelaise, as a part of the regular routine of Potato cultivation, at a cost of about £1 per acre. They hold, and it is considered with much reason, that they have shown by the results of their experiments that such preventive dressing will pay, seeing that the yield of the dressed portions of the trial-ground was at the rate of 2 tons per acre more than that of the undressed parts. The quality of the Potatoes also was undoubtedly better on the dressed plots.

A noteworthy feature of Messrs. Carter's experiments is that double the quantity of lime was used for them as compared with that used in the experiments conducted by the Royal Agricultural Society for the Board of Agriculture.

EXPERIMENTS IN IRELAND.

With respect to the experiments made by the Agricultural Department of the Irish Land Commission, it appears that there was disease present more or less in all the districts where the experiments were conducted. On all the plots that were not treated with sulphate of copper compositions disease showed itself in ratios of from 2.9 to 15.7 per cent. of the total yield of tubers.

On six of the plots treated with the mixture there was absolutely no disease, and on the others the weight of diseased tubers ranged from 0.03 to 11.0 per cent. of the entire crop.

Other experiments carried out at the Albert Model Farm, Glasnevin, on four treated plots sown with a variety of Potatoes (Kemp's) liable to disease, the average quantity of diseased tubers was 34.36 per cent., as against 60 per cent. upon an untreated plot.

At the Munster Agricultural School the average quantity of diseased tubers in three sets of treated plots was 7 per cent., against 10.5 per cent. on untreated plots.

COST OF THE APPLICATION.

The cost of dressing, as given by the reporters in England, runs from 8s. 4d. to 9s. 10d. for one application. This depends upon the price of labour in the district, and the quantity of bouillie required. In Ireland the cost ranged from 7s. 8½d. to 9s. 1½d. per acre for each application.

EFFECT ON POTATOS AS FOOD.

It is known that copper occurs naturally in many food substances, but only in minute quantities. Therefore, in order to ascertain if any portion of the mixture applied had been absorbed by the leaves or stalks of the plants which had been sprayed, two samples of leaves and stalks, one of which had been treated with the sulphate of copper and lime mixture, and the other with the sulphate of copper, lime, and treacle mixture, were submitted to Sir Charles Cameron for analysis. A sample of tubers grown on the first-mentioned plot, the foliage of which was analysed, was also submitted for analysis.

The results showed that each sample of leaves and stalks absorbed a certain amount of copper, but that the tubers did not contain more copper than might

be found in any samples of tubers, the foliage of which had not been so treated.

INSTRUCTIONS FOR APPLICATION.

In a circular issued by the Agricultural Department of the Irish Land Commission in June, 1893, they call attention to the following important matters which have to be attended to:—

1. Spray during dry weather, so that the mixture may remain on the foliage; if heavy rain falls within six hours after spraying, it would be advisable to spray again on the first favourable opportunity.

2. Use only pure copper-sulphate, guaranteed to be of 98 per cent. purity; buy it powdered, or powder it before use; ordinary commercial sulphate of copper contains a large amount of iron, and should not be used. Pure copper-sulphate costs about 3s. per stone when purchased in small quantities, and can be obtained from the leading druggists.

3. Take care that the lime used is pure, well burnt, and unslacked.

4. Cold water should invariably be used in preparing the mixture; hot water should not be used. The lime, after being slacked, should be quite cool before being added to the copper solution; it may be cooled by adding cold water.

5. Iron vessels should not be used in preparing or handling the mixture; wooden vessels are the best.

6. Empty paraffin barrels have been found very suitable for the preparation of the mixture; it will generally be found most convenient to prepare the mixture in the field in which it is to be used.

7. The mixture should be well stirred with a piece of wood on each occasion before a fresh supply is drawn for the spraying-machine.

8. The spraying-machines should be oiled before being used, as there is a good deal of india-rubber in the working-parts of the "Eclair," pure olive-oil should be used for lubricating; ordinary machine-oil should be avoided, as it frequently contains paraffin, which dissolves india-rubber.

9. One man, attended by a boy, can apply about 9 or 10 gallons of dressing with a knapsack-spraying machine in one hour. One boy can attend three men using knapsack-sprayers, carrying fresh supplies of dressing to them.

10. The quantity of the mixture to be applied per acre is approximately as follows, the mixture when prepared costing about $\frac{1}{2}$ d. per gallon:—

Crop.	Per Statute Acre.	Per Irish Acre.
For an average crop of Champions with fully-developed foliage ...	100 gallons.	160 gallons.
For a crop of Champions with more than average foliage	150 ..	240 ..
For a crop of Champions with small development of foliage	80 ..	130 ..

11. When dressing Potato-plants which are very young, or of tender-leaved varieties, it would be desirable to weaken the mixture by the addition of one-third more water than is usual.

12. Sulphate of copper being a poison, the vessels in which the mixture is prepared should not afterwards be used for holding food or drink for animals.

We should like to recommend that in any future experiments in checking Potato disease, a plot should be devoted to a trial of the Jensenian or high-moulding system, as this does not check the growth of the crop so much as the bouillie applications, and it has been found effectual even when disease has set in. *J. J. Willis, Harpenden.*

OUT-OF-DOORS FLOWERING PLANTS.

A GREAT many of the more tender herbaceous plants which, owing to the mild weather, had been making a brilliant show, have at last been cut down by frosts. I have never known Dahlias to flower in such profusion as this year, Pompon and single-flowered varieties being especially so. The roots of

these plants may now be carefully taken up, and placed in their winter quarters, after allowing the soil about them to get dry. It is always well to retain about 6 inches of stem, for convenience of handling and attaching the label. Do not lift the roots in wet weather, or break them. Dahlia roots keep perfectly sound in a frost-proof dry shed or cellar. If the roots are bedded in dry mould, overmuch shrivelling will be prevented, and in the case of thin tubers, this will prevent their drying up past recovery.

Begonias.—These did not succeed as usual during the summer months, owing to the drought, the zonal Pelargoniums making the best show; but after the rains came the reverse was the case, the Begonias growing and flowering extremely well, and when the frost came they were in fine order. I have lifted the tubers, and placed them in the vineries, and in here they will remain for at least three weeks. In digging up the tubers I cut off the tops within a few inches of the tuber, shook away all the loose soil, and took great care not to bruise them. It is essential that the sorts be properly labelled. In about three weeks' time the tubers should be examined, and turned over a few times at an interval of a day or two, till fairly dry, when they should be put into shallow boxes. At one time I used to put fine dry soil or sand over them, but this is not needed, the bulbs keeping quite sound without this, so long as the tubers are stored in a cellar or shed where frost cannot enter. A too dry or very airy place should be avoided, as the bulbs would then shrivel.

Salvia patens and *S. patens alba* have tuberous roots, and these may be lifted and stored in boxes of moderately moist soil, in a cold frost-proof pit.

Marvel of Peru needs similar treatment to Dahlias. *Verbena venosa*.—This plant comes true from seed, and flowers freely the first year, if the seeds are sown early, and the young plants nursed in heat, hardened off, and transferred to well-prepared beds in May; but many gardeners prefer to take up some of the roots of the old plants and place them in boxes, keeping them in cold frames till the spring, when if put in heat, they soon throw up shoots, which may be taken off and struck in mild bottom-heat.

Echeverias.—Many gardeners box these plants, and store them in a cold glass-house or pit, &c.; but where boxes and house-room are scarce, the plants may be wintered outside at the foot of a west wall; when the plants are taken up out of the soil, the lower leaves and young plants should be removed. Stack the old plants firmly and closely together, in half ridges, starting with the first row at a distance of 2 feet away from the wall, and fellow on, row after row, gradually sloping the face of the plants towards the face of the wall. In this way they withstand the winter with but little protection, especially if the ridge is somewhat steep. *H. Markham, Mereworth Castle.*

HARDY ORNAMENTAL TREES AND SHRUBS.

So far as my own observation goes, a good many young gardeners do not give the amount of attention to this branch of their business which its importance and interest demands and requires. In some places the management of the trees and shrubs is deemed of more consequence than even the kitchen garden, and that is saying a good deal, for we all know the dire results of not keeping the pot boiling; and as no young man can with certainty forecast what or where the change and chances of life may bring him, it is incumbent upon him that he should fortify himself with a store of knowledge upon every branch of his business if possible, but more especially upon one of such universal interest as the subject of this paper. The furnishing of glasshouses with plants was in former times very different to the fashion of to-day as regards the number of species and varieties cultivated; people then seemed to try to have one or two plants of everything they could get hold of, but the prevailing custom now-a-days

appears to be to cultivate some favourite plant, or class of plants, in quantity, to the exclusion of many interesting subjects that are rarely seen outside of botanic gardens, and are not always easy to find even there. But if the field of interest be narrowed in our greenhouses by the prevalent custom of special culture on a more or less large scale, the same cannot be said concerning outdoor plants, for never have we been richer in hardy trees and shrubs than we are at the present time.

The first step towards gaining a knowledge of plants is to get to know their names accurately, both Latin and English, so far as that can be done, as well as the synonyms of such as happen to be hampered with more names than one. This can be done through the help of friends who already possess such knowledge, through visits of observation to botanical gardens, arboretums, and public parks, as well as by the consultation of books and nurserymen's catalogues, &c., and, as a last resource the editors of our garden papers are always willing to help in such matters on certain specified conditions. Gardeners as a rule are not easily deterred from attaining their ends—they are often fain to face with some difficulty, and so become as it were inured to efforts of perseverance, and we have on record some noble and encouraging examples of men among them who pursued knowledge under most adverse circumstances but who ultimately gained success by dint of unflagging application. If it be true that love laughs at locksmiths, the love of plants may be included, for it is almost impossible to keep knowledge away from a person who is bent upon acquiring it. "So if at first you don't succeed, why try, try again!"

I need hardly say that this is not a treatise upon the management of trees and shrubs, but merely an attempt to stir up an interest in them among the class of men into whose hands their management will in the course of time largely fall. In this country we have never far to go ere we find some specimen of tree life to contemplate, for in field, forest, and city, trees and shrubs meet us and greet us everywhere, we are fascinated by the infinite variety of form in individuals as well as in the different species, by the endless variety and beauty of shape and colour in the foliage, and also by the changes induced in them by the progress of the seasons, the action of the wind upon their movements, their shadows in the water, &c., while the uses to which they may be put and their adaptation (some of them) to nearly all manner of positions that are natural are of the greatest benefit to mankind and to animal life generally.

In trade catalogues we find certain things classed as forest trees, while others are placed under the heading of ornamental trees and shrubs. This arrangement is without doubt quite convenient and proper for trade purposes, but no injustice would be done to the trees if they were all placed under one heading, for I hold that all trees and shrubs are ornamental when seen under favourable conditions; and as regards favourable conditions, we may often make notes by the way, mentally and otherwise, as to the suitability or unfitness of certain things for a given purpose. Knowledge gained in this way is most useful, and can be turned to good account as opportunities for so doing occur.

A few short lists of plants for special purposes or having special qualities, with some incidental remarks, is as much as I can put within the limits of this paper. Conifers are a very large and interesting class of trees of first-rate importance, both as ornaments in the landscape, and as yielding perhaps more timber than any other trees. In size they range from *Pinus Mughus* and *Picea Clanbrasiliana*, which are rarely seen more than a few feet high, up to trees of the most gigantic stature. Members of the genera *Cupressus*, *Juniperus*, *Retinospora*, *Thuja*, *Sequoia*, *Taxus*, *Cryptomeria*, and others, are commonly made use of as shrubs in a young state, and fine sentinel-like figures many of them make when not planted too thickly, or crowded, or overtopped by other things, but the bulk of them grow into trees of timber-size in their native habitats, and

some of them even in this country. Our common Yew, *Taxus baccata*, is one of the hardiest of trees, and lives to a more than patriarchal age, some say as much as a thousand years, but this would perhaps be difficult to verify. The Irish Yew, *Taxus fastigiata*, is most frequently seen in an upright form, but this is not by any means its universal natural shape and character, but one imposed upon it by training, tying, and the knife. When left unmolested, the Irish Yew has mostly a peculiar spreading and sprawling habit, which makes it very interesting in aged specimens. The Japan Yew, *Taxus adpressa*, makes a dense, hardy bush, or small tree, and is useful in a mixed shrubbery, as well as ornamental as a single specimen on a lawn. The Hemlock Spruce, *Tsuga canadensis*, is one of the finest objects that can be planted on a lawn in a sheltered place, its lower branches dipping down and touching the ground, and then curving upwards, give the tree a most novel and striking appearance. The Cedar of Lebanon, *Cedrus Libani*, when fully developed, stands out as a very king among trees, by reason of its majestic appearance; and among deciduous trees may be noted the Tree of Heaven, *Ailanthus glandulosa*, which in foliage somewhat resembles the Walnut, but botanically is quite distinct from that species. I have read somewhere that in China and Japan silkworms are fed and reared on the young foliage of this tree, but its chief value in this country is as a quick-growing nurse in young shrubbery plantations.

The Horse Chestnut, *Æsculus hippocastanum*, is one of the best known and most admired trees, and its pink variety is at least equally charming. The Tulip Tree, *Liriodendron tulipiferum*, is an object of great beauty when in flower, its yellow cup-like blossoms being borne in great profusion. The bark is said to be a powerful tonic, and the imported timber is, they say, used by coach-builders for panel-work. The common Lime-tree, *Tilia europæa*, is a well-known tree throughout Europe, as well for its beauty as a tree as for its economic value, and from about the end of July to the middle of August the Linden trees are a source of food—or, at least, of honey, to bees generally, while our common garden mats are made of the inner bark of some of the species.

The Plane tree, *Platanus acerifolia*, about which at one time there was a little botanical confusion, is another well-known tree, having within the memory of man been very extensively planted and reared in towns and cities, as it bears smoke and dust better than most trees. A peculiarity of trees of this species is, that they cast a portion of their bark off in flakes every year, but they wisely provide themselves with a new jacket underneath the first. Another remarkable thing about the Plane tree is, that the incipient leaf-buds are not axillary as in most other trees, but are completely enveloped by the base of the leaf stalk like an extinguisher on a candle.

Among smaller-growing trees, may be noted the Mountain Ash, the Manna Ash, various Thorns, Acacias, Ilexes, the deciduous Cypress, the Almond tree, many members of the genera *Pyrus*, *Mespilus*, *Cerasus*, *Laburnum*, *Hollies*, &c., and *Tilia heterophylla*, *Fagus asplenifolia* and the cut-leaved Alders should not be left out. Large-growing shrubs are represented by *Cornus mascula*, which is one of the earliest to flower; by Laurels, *Rhododendrons*, English, Spanish, and Portuguese Brooms, double Gorse, Lilacs, *Tamarisks*, *Azaleas*, *Deutzias*, *Prunuses*, *Kalmias*, *Andromedas*, *Ligustrums*, *Ribes*, *Pernettyas*, *Barberries*, *Laurustinuses*, *Daphnes*, *Syringas*, *Cotoneasters*, *Roses*, *Philadelphuses*, *Clethras*, *Oleas*, the Judas tree, &c.

Berry-bearing plants include *Hollies*, *Aucubas*, *Skimmias*, *Pernettyas*, *Pyracanthus*, *Barberries*, *Cotoneasters*, *Mountain Ash*, and some *Roses* and *Thorns*, &c. Among plants remarkable for the beauty of their variegated foliage, are *Hollies* of sorts, two of the best being *Golden Queen* and *Milkmaid*, *Golden Yews*, *Aucubas*, *Euonymus*, *Elaagnus*, *Osmanthus*, &c.

Weeping trees have notable representations in

the Weeping Ash, the Birch, the Elm, the Yew, *Taxus Dovastoni*, *Sophora japonica*, *pendula*, &c. Trees with coloured foliage are seen in the Purple Beech, the Purple Hazel, Purple Oak, the Concord Oak, *Prunus Pissardi*, some of the Japanese Maples, the White Beam Tree, the White Poplar, *Shepherdias*, &c.

Trees whose foliage dies a bright colour are the Scarlet Oak, *Liquidambar*, plum-leaved Thorn, snowy *Mespilus*, *Rhus Cotinus*, Ghent *Azaleas*, &c.

For covering the ground, or filling among other things, the following are suitable, *Polygala chamaebuxus*, *Hypericum*, *Periwinkles*, *Gaultherias*, *Epigæas*, *Ivies*, *Berberis dulcis nana*, *Butchers' Broom*, *Heaths*, *Sun Roses*, &c.

The following ought to have well-chosen warm sheltered situations. They are not adapted for general planting in all parts of this country, but they are all worth bestowing a little trouble upon where that will suffice. *Paulownia imperialis*, *Catalpa syringifolia*, *Myrtles*, *Pomegranates*, *Chimonanthus*, *Ceanothus*, *Escallonia*, *Camellias*, *Desfontainæas*, *Althea frutex*, *Hydrangeas*, *Cistus*, and many other equally beautiful plants which cannot be named here, as I am afraid my paper is already too long, and these lists are not intended to be exhaustive, but merely illustrative so far as they go. *F. Harrison, Knowsley Gardens, Prescott, Lancs.*

MUSHROOMS AND TOADSTOOLS IN 1893.

SUCH an exceptional period as the summer of 1893 cannot but have exerted some influence over all vegetation which depends to a very large extent upon climatic influences. Upon the general production of Mushrooms and Toadstools there has been a sinister influence during the past three or four years, but which seems to have reached its climax in the last. All experienced fungus-hunters are well aware that it is some years since a good fungus year has been known. There have been no such prolific crops in the woodlands as were known generally some ten years ago, or perhaps rather more, for there has been a gradual falling away for the past nine or ten years; and no other cause can be assigned for this but climatic conditions—the dampest and most sheltered localities for a long time suffered the least. This present year we have tested two or three favourite localities, at the usual period, and found either absolutely nothing, or exceptionally few fungi. Epping Forest, in September, was scoured for hours without finding twenty different species of *Agarica*, whilst the number of individuals of each species was equally small. In favourable seasons, from eighty to one hundred species would have been recorded in the same period of time. Our personal experience now extends over thirty years, so that we have a good range for comparison. There is one singular fact with regard to the present year, which seems inexplicable, and that is the profusion, in some localities, of the common Mushroom. We have heard of tons being offered for sale at nominal prices; and, in the Metropolis, we have observed lower prices than we ever remember in any previous year. The oldest inhabitant has no experience of Mushrooms at 2d. per lb., and that during a year in which we have found no single specimen of the ubiquitous *Agaricus laccatus*, or seen a *Lepiota* of any kind.

In previous years, when there has been but a poor crop of fungi generally, it has been observed that rare species have made their appearance, and this year has been no exception. Not long since a mycological friend informed us that he had met with several species which had not appeared in his locality before; another remarks that a number of strange things have turned up; from a third locality we have had a curious *Agaric* with gills of a verdigris-green, and pale-tinted spores, but evidently belonging to the sub-genus *Schulzeria*, reminding us of the *Agaricus* (*Lepiota*) *Morgani*, with greenish gills, from the United States. It is very many years since we have heard of the occurrence of *Agaricus* (*Psalliota*) *cre-*

taceus, and this year a number of fine specimens were sent us from Scotland, and we had the pleasure of eating them for the first time. Thus much, then, for the general dearth of fungi, and abundance of Mushrooms. The fungus forays, sometimes so common with local natural history clubs, have this year been very limited. Not even the Woolhope Field Club put in an appearance, the Essex Field Club postponed it to the latest, and with others there was “no sound, but silence.”

On October 14 the West Kent N. H. Society had a Saturday afternoon stroll from Orpington to Chislehurst, when about forty species were found and recorded, but the number of individuals of each was extremely limited. In a moderately good year the locality would have been undoubtedly favourable, but the previous showers came too late to be of much service. The species cooked and eaten at the high-tea were *Paxillus involutus* and *Boletus scaber*. Not a single specimen was found of any species of great interest during the afternoon, excepting, perhaps, *Agaricus* (*Collybia*) *vitellinus*, which is by no means common in this country.

The only other excursion in which we participated was that of the Essex Field Club, in Epping Forest, on Saturday, November 4, and although the weather was favourable, the dearth of fungi was remarkable. Notwithstanding the search of a considerable party during the day, and several small collections which were sent in, the number of species recorded was under sixty. Nothing of special interest was found, and only one British species new to the county. At the meeting in the evening, one of the members produced a specimen of the rare *Fomes roseus*, growing on decayed wood, on which it had appeared for three years. This is the first record of its appearance south of the Tweed. During the evening a brief but interesting discussion was carried on with reference to the cultivation of Mushrooms in the county on an extensive scale, and some interesting facts elicited as to experiments in field-cultivation, which, it was contended, might be made remunerative. Nearly all the species exhibited were of the commonest kinds, and some of these, such as *Agaricus laccatus* were remarkable for their absence. *M. C. C.*

STOKE PARK, SLOUGH.

THIS, the property of Wilberforce Bryant, Esq., is a finely-timbered estate, of some 530 acres, in one of the pleasantest parts in the county of Buckinghamshire. From the terrace of the noble mansion grand views are obtained; on the one side over the richly-timbered deer-park, the lake of some 12 acres extent, and away into the country beyond, the church of Stoke Poges on the edge of the park coming into the view. On another side, at the end of a glade, Windsor Castle appears, its stately towers making a picture-like termination to the scene.

Around the mansion the gardens were well and judiciously laid out and planted, and time has allowed of the various trees to assume stately proportions, and of the shrubberies in which the *Rhododendrons*, *Laurustinus*, *Portugal Laurels*, and other bright green-leaved evergreens predominate, to form the screens and shelters which the designer had in view. Thus, even close to the house, many beautiful and secluded walks appear where little of the surrounding gardens can be seen, except where openings in the shrubs allow of the eye taking in some or other of the fine Conifers.

Few views in gardens can excel some of those in the grounds of Stoke Park. At the end of one of the walks near the mansion a noble *Araucaria imbricata* of perfect shape, and about 50 feet in height, is visible, backed by *Cupressus Lawsoni* and *Abies*, on each side and in front of the central object being specimens of *Libocedrus decurrens*—that on the left-hand straight and columnar, some 60 feet in height; that on the left more oval in outline, and slightly less in height. Winding beyond this fine garden-group, the walk leading to higher ground discloses through a vista in the trees, another fine view of Windsor Castle. Passing on to

get to the plant-houses, many fine specimens meet the eye. In one sheltered spot *Cephalotaxus Fortunei* has reached a good size, and is a healthy specimen; although its beauty will not compare favourably with the more regularly-formed *Conifers*. The specimens in the gardens have not suffered much through the drought of last summer, although it has been severely felt in this district, where they passed a period of seven months without a single shower. The giant specimen of *Cryptomeria japonica* has, perhaps, felt the drought most, but it is fast recovering its original dark green hue.

Passing through the well-cropped kitchen gardens and fruit grounds, where there are said to have been good crops of fruit this year, although the keeping properties of the Apples and Pears have been bad, we reach

THE PLANT-HOUSES.

Here, as in all the other departments, Mr. D. Kemp works with that skill and intelligence for which he acquired a good name years before he came to Stoke Park. Plants for flowering in winter are admirably worked, and in some of the greenhouses there is a fine show of flowers. One house is furnished with dwarf bushes of *Salvia splendens* in the centre, surrounded by winter-flowering *Pelargoniums* of all shades of colour. On the side stage is a large batch of bushy plants covered with bluish-white flowers of *Begonia Knowsleyana*, an old variety, which emanated years ago from Lord Derby's gardens, and which pleases Mr. Kemp so well that for many years he has annually raised a batch of seedlings, which each year at this time have formed large plants and commenced to bloom. How is it that while many inferior plants of its class have been eagerly purchased of late years, this superior old variety should have been neglected in most gardens? Plants of *Begonia parvifolia*, *B. Saundersiana*, and others, too, are well bloomed, but nothing approaches *B. Knowsleyana* for floriferousness. Trained to each rafter is another favourite, viz., *Pelargonium peltatum* *Souvenir de Charles Turner*, from which a great supply of winter flowers is here got by pinching out all the buds which attempt to flower earlier.

In the Palm-house the white *Brugmansia* is flowering, and the Orange trees fruiting, among the Palms and Ferns. In the Azalea-house some hanging baskets of mingled *Davallia bullata* and *Adiantum cuneatum* are pretty objects. In one of the stove houses there is a beautiful display of scarlet and yellow spikes of flowers on a quantity of plants of *Gesnera (Nægelia) zebrina*; in others the coloured-leaved *Dracanas* and *Crotons* are splendidly grown; on the roof are plants of *Stephanotis floribunda*, in some cases very old, which promise to give a large and continued supply of flowers. One division is nearly filled by well-coloured plants of *Acalyphas*, in the background being large and graceful specimens of *Goniophlebium subauriculatum* and *Davallia Mooreana*. In other houses the large stock of varieties of *Primula sinensis*, *Poinsettias*, *Cyclamen*, *Bouvardias*, *Carnations*, and *Chrysanthemums* are all that could be desired. Among the last named the fine *Chrysanthemum Lady Lawrence* and the pretty single *C. Mary Anderson* are especial favourites.

THE ORCHIDS.

The collection of these plants is being steadily worked up; the *Cattleyas*, *Lælias*, and *Odontoglossums* are thriving in a remarkable manner, and all the various favourites are bidding well for flower. Among a varied and beautiful lot of *Cattleya labiata* we found the white-petalled form of it, which was the chief object of our visit, and a very beautiful and distinct thing it is. It flowered out of a small lot of purchased imported plants. The petals and sepals are pure white, the base of the labellum rich yellow with white veining, the front lobe of the lip pale rosy-lilac edged with white—in fact, a *C. labiata alba*, with the addition of the tinge of colour named on the lip. In the same range, plants of *C. Bowringiana* and other species were in bloom, and the forms of *Lælia anceps* and *Oncidium Cavendishi* profusely sending up spikes. In the *Odontoglossum*-houses the plants one and all are making satisfactory pro-

gress. At present there are but few in flower, but a bit of bright colour is afforded by blooms of *Sophranitis grandiflora*, some fine pans of *Pleione lagenaria*, a good example of *Oncidium ornithorhynchum*, and the old *Odontoglossum grande*. In several of the stoves *Celogynes*, *Cymbidiums*, and other Orchids of large growth are grown with the foliage plants, and in the fruit-houses a number of *Dendrobiums* and especially of *D. nobile*, which is here, as in most other gardens, a great favourite, are being rested and prepared for flowering. In one of the houses we observed a pair of very large plants of *Dendrobium speciosum Hillii*, which will be splendid objects when the fifty spikes or so which each is sending up are perfected.

In the fruit houses, which are of considerable extent, there is evidence of the best methods of fruit culture, and heavy crops are said to have been borne in them this year. The fruit also is said to have been fine, some of the Princess of Wales Peaches weighing 14 oz., and of good flavour withal. In some of the houses were observed batches of *Imanophyllum*, *Callas*, *Lachenalias*, *Humea elegans*, and so forth. The *Humeas*, which want considerable management, are splendid plants, and their foliage fills the house with that peculiar odour which is so grateful to most people.

AMERICAN PARKS AND GARDENS.

(Continued from p. 588.)

THE GARDENS AT WELLESLEY AND HOLME LEA.—“Did you visit any of the private places in the suburbs of Boston?” asked the interviewer of Mr. Nicholson.

“Yes, and I found many of them most interesting on account of their plantations. This is especially true of Mr. Hunnewell's place at Wellesley, which is very well known in England, since it has been repeatedly described in English periodicals. His collection is especially rich in *Conifers*, and so far as my observation goes, his grounds and greenhouses contain a larger number of plants than any other private collection in America. Mr. Hunnewell tells me that he had almost reached middle age when he began planting forty years ago, and yet every tree now growing on his grounds has been planted under his supervision, and he still takes a most active interest in horticulture. He not only makes very liberal expenditures for specimens to add to his collection, but he loves horticulture in a public-spirited way, and it is to his munificence that the Arnold Arboretum owes the fine museum building at its entrance [see Supplementary Illustration].

“You would hardly have time to hear a full account of all the private places I visited, but I must not neglect to mention a wonderful collection of Japanese Irises brought from Japan by Mrs. John L. Gardiner, of Brookline. They were better than any I have seen in Europe, since they are cultivated apparently under nearly natural conditions. Inasmuch as I stopped at Professor Sargent's place, I became better acquainted with Holme Lea than any other, and it is the only large place I have seen in which no tender bedding plants are used for decoration, the effect relied upon being produced by the skilful use of trees and shrubs. There are large expanses of rolling lawns and many acres of natural wood, with Hickories, Oaks, and other trees, &c., some 200 years old, with a beautiful undergrowth of *Smilax* and many other native plants which we cultivate for ornament in Europe. When I say there are no bedding plants here, I do not mean that there are no flowers raised on the place, for there are flowers in profusion in greenhouses and in the flower garden for cutting. I simply mean that tender bedding plants are not used as part of the scenery. I never saw better *Gloxinias*, for example, or a nobler specimen of *Quisqualis indica* than the one which was climbing in one of the greenhouses in full flower, and furnishing an immense number of flowers for cutting every day. But besides these plants for cutting, in the borders of the wood and in the shrubbery, many hardy perennials have been naturalised. The shrubs themselves in their season make an unrivalled

flower garden, for I suppose you know that deciduous flowering shrubs do much better here than they do in England. I regret very much that I did not reach this country earlier, so that I could have seen one of your Dogwoods covered with its white flowers, as I have seen them in illustrations. This place is celebrated for its hardy *Rhododendrons*, which are mainly seedlings which have originated in England and have been imported from there. These broad-leaved evergreens, as a rule, do better with us than they do with you, so that it is a compliment to Professor Sargent to say that the *Rhododendrons* grow under his care almost as well as they do in the land of their origin.

“The use of *Ampelopsis Veitchii* in such abundance as I saw it covering the walls of buildings in Boston was novel to me, and struck me as being exceedingly beautiful. I do not wonder that the plant has the name of the Boston Ivy here, for the climate evidently well agrees with it. I did not see the striking autumnal tints that are produced later, but the plants seem to flourish on a larger scale than I ever saw them in Europe. Another pleasant picture I will carry away with me is the planting about the railway stations on the line of the Boston and Albany Railroad. This planting is confined to shrubs with occasional trees, but the skilful way in which they are grouped, and the use of many of the native American Roses and other shrubs produce effects which could be profitably aimed at in many other stations in this country and Europe. I saw hardy shrubs and native plants used with admirable effect also in the Walnut Hills Cemetery at Brookline, where I was very much impressed with the natural treatment of the landscape.” *New York Daily Tribune*.

TREES AND SHRUBS.

ELÆAGNUS MACROPHYLLUS.

MR. BURBIDGE sends us, from the Trinity College Botanic Garden, Dublin, specimens of this handsome shrub, the flowers of which are very fragrant on a sunny November day. The plant is 8 feet high on a west wall, seven years old. The under side of the leaves is bright silver-coloured, owing to the presence of a thick coating of silvery scales.

HIPPOPHAE RHAMNOIDES.

This native shrub is beautiful throughout the autumn and winter, the Willow-like branches of the female plants being brightened with a profusion of orange-yellow fruits. It is not unlike a Willow, the branches slender, the leaves of a dullish-green colour on the upper surface, but quite silvery beneath. It grows to a height of 8 feet or more, and is very striking planted by the side of a lake or pond, as in the Royal Gardens, Kew, where a mass of the “Sea Buckthorn” as it is often called, is well established, and this year in particular, heavily laden with fruit. It is a good autumn for all berry-bearing trees and shrubs. A native shrub, but not common, and found by the seashore in sandy places, the *Hippophae* is well worth establishing in gardens, and looks well by the waterside, the graceful Willow-habit and profusion of fruit making a good winter picture. *V.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.
PINERY.—At this season there is little moisture required by Pine plants at the roots or in the atmosphere, and the amount afforded will depend on the use of artificial heat, and the state of the weather. It may be remarked here that confined moisture condenses on the glass and metal, &c., and falls back into the house, and a good deal is caught in that way by the leaves, which conduct it to the soil about the collar, rotting the roots; on the other hand, dryness often follows hard firing, and both of these states of the air in the house are equally bad. Watering the roots periodically all at one time is also a most undesirable practice, and if the beds of plunging material becomes cold, the roots then quickly suffer, but which does not become

noticeable till growth should be active. The evils attending a too high degree of bottom-heat are long weak leaves, smallness of the rootstock, and small fruit. Root-burning has to be carefully guarded against where fermenting materials are employed, and as new leaves are added to the old at this season, there is always a danger. An air temperature of 60°, with artificial heat, except in the case of fruiting plants, need not be exceeded, and it may fall to 55° during the night; a warmth 10° higher for fruit now swelling may be allowed. Bottom-heat may range from 80° for young stock to 86° to 90° for fruiters. Fruit now ripening may require special attention, as moisture in the air of the house or in the soil tends to inferiority of flavour, and sometimes to discoloration of the fruit. When a plant has fully swelled fruit, it may be kept in good condition in a cool dry room for a week or longer.

STRAWBERRIES.—Where fruit is required early in March, forcing must now commence, or at least all preparations of the plant should be made by pricking-up the surface of the soil, and renewing it with some good loam, and a small portion of bone-meal or other special manure; but the proportion recommended to be added to the soil must be strictly adhered to, much mischief being done by overmuch manure. The pots should be washed, the drainage examined and made good if found faulty, and decayed leaves cut off. A frame or pit filled with Oak or Beech leaves made firm, and the plants placed thereon, makes a good place for starting if the heat does not exceed 50°—a little more with sunshine. Keep the plants near the glass, and give the surface of the bed a dusting with slaked lime or of soot to deter slugs. The usual forcing quarters, the shelves at the back of Peach-houses and vineries answer well at all times, as plenty of light and air is of special importance for these early Strawberries. A period of from fourteen to sixteen weeks is generally allowed for obtaining fruit. Of varieties Black Prince, Laxton's Noble, and John Ruskin are three of the earliest to ripen; Vicomtesse Héricart du Thury, Keen's Seedling, La Grosse Sucrée, Sir Joseph Paxton, and President follow these. A good fumigation with tobacco or its preparation for three nights in succession is of much service in checking the spread of aphides.

MELONS.—The crops of Melons are nearly everywhere over, but if any remain to ripen, they must have warm dry air, a dry atmosphere, and only enough moisture in the soil to keep the foliage from flagging. If fruits are fully swelled, they may be cut and placed in a dry room, with a temperature of 45° to 50°, and from which removed to heat as required.

THE FLOWER GARDEN.

By T. H. CRASP.

MIRABILIS JALAPA.—This plant, well known as Marvel of Peru, was formerly an immense favourite in gardens, but is now rarely met with; still, it is a showy outdoor plant, though not hardy enough to endure our winters. The roots should be dug up in November, and stored, like Dahlias, indoors. It is raised from seeds sown in the spring, but these seedlings do not make much display the first season. A two or three-year-old plant will, on the contrary, flower profusely for four or five months in the summer and autumn if the season be not unusually wet. It is a plant that gardeners in warm parts of the country might make more use of than is now the case, and give it a fair chance. In the south it may be sown on a warm sunny border, and in colder parts in pots or pans placed on a gentle hot-bed. The seed germinates quickly, and as soon as the plants are large enough to handle, they should be pricked off and treated in the same way as regards hardening off, &c., as any other half-hardy plant. Stored roots may be started at the end of March or in April, potting them in loam two parts, decayed manure, and just sufficient sand to make the soil porous. Water sparingly at first, till growth commences.

SENECIO PULCHER.—This is one of the most beautiful of hardy herbaceous plants, and should be found in most gardens, and although rather difficult to manage, it amply repays the gardener for his pains. It delights in a rich, moist, well-drained soil, and is almost hardy in southern parts of the country; but to make sure of it, it should be lifted and placed in a cool frame, from which frost is excluded, remaining there till the spring. The propagation of the plant is by seeds, division of the root and cuttings, but as fertile seed is not always obtainable, the best way is to propagate it from root-cuttings, which should be put in at

the present season. The plant should be lifted and the soil shaken from the roots, the largest of which should be cut into lengths of 1½ inch long, and inserted upright in pots or pans of sandy loam, so that their tops are level with the surface of the soil. These should be placed in a house or frame having an average temperature of 50°, and as soon as the leaves are as large as a sixpence, the plants should be potted-off singly, affording them plenty of root space. By liberal treatment, Senecio pulcher may be induced to flower the following autumn, and if it does not, fine strong plants will be available for flowering the succeeding autumn.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

MEXICAN-HOUSE.—*Lælia anceps* and its varieties will have finished growth, and the spikes will be well advanced, some, indeed, showing bloom, and provided the stock of plants is extensive, plants may be had in good bloom for two months longer. These should now be very sparingly watered, but sufficient must be applied to preserve their freshness until flowering is past, otherwise the flowers will be lacking in size and substance. After flowering, but little water will be needed till growth re-commences, and the new roots which have formed at the base of new growths will obtain their moisture from the air. These species and varieties require a long rest. The buds on plants of *Lælia autumnalis*, *L. a. atropurpurea*, *L. a. alba*, *L. Gouldiana*, by far the very best of these, will be swelling, and the general treatment of these varieties will be the same as that afforded *L. anceps*. *L. alba* and its improved forms which are also showing flower-spikes. *L. majalis*, a very shy bloomer, should now be finishing up its new growths, and be sparingly watered for a time, when water may be altogether withheld, and the plants hung close up to the roof. *Lælia Perrinii*, *L. Dormaniana*, *Cattleya Alexandræ*, *C. granulosa*, *C. g. Schofieldiana*, and varieties, as they pass out of flower should be kept rather drier for some time. Where a good stock of plants of *Cattleya labiata* vera does not exist, purchases should now be made, these plants going at a very cheap price. A good lot of these flowering in November, furnishes as fine a show in the Orchid-house as one may expect in the month of May. We have at the present time in flower some 600 fully-expanded flowers, and some more yet to open. *Cattleya citrina* is a plant which does well in the Mexican-house if hung up near the roof; and providing the plants have had plenty of water during growth, it will now be maturing, needing but little more water from this date. *Cælogyne cristata*, now maturing its pseudobulbs and pushing forth flower-racemes, is at a rather difficult stage, as the bloom sometimes, instead of coming on, turns black and dies from too little warmth and too moist a temperature. It is therefore prudent to have the house rather dry, and not to afford much water at the root till such time as this danger is past. Our Mexican-house generally stands at from 55° to 60° during the night for the next three months, air being afforded whenever the weather permits; in fact, the bottom ventilators on one side or the other are never closed. Having a good collection of *Cælogynes*, flowers may be obtained from the next month to May, the earliest to flower being *C. cristata*, Chatsworth variety; then come *C. c. Lemoniana*, *C. c. maxima*, a variety of much size and substance, and more flowers on the spikes. The latest are *C. c. Trentham* variety and *C. c. alba*.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

HINTS ON INDOORS WORK.—The severe weather has brought much of the outdoors labour to a standstill, the land in many parts being covered with snow to the depth of several inches. In such weather there is always something to do under shelter; and one of these is the preparation of Russian bast-mats and straw-covered frames for protective ends. The latter will sometimes need repairing or re-covering. The ice-house may need to be put in order; boxes made for seed-sowing, cuttings, &c.; Potatoes sorted and surely protected from frost, the sets of early varieties being put on their ends. One of the most important of all present indoor work is the looking-over of stored seeds. Any Peas that were harvested should be threshed or otherwise separated from the seed-vessels, the seed being then spread out on a table, and all small and ill-ripened seeds picked out. This may seem to some persons excessive carefulness, but those who wish to have the best crops must select

the best seed, and this can only be done by rejecting all small and ill-ripened or weevil-eaten seeds. This cleaning and sorting of seeds accounts for the high prices charged by seedsmen, but having had much experience in this branch myself, I can safely recommend the plan to others who may not have tried it. Runner and dwarf Beans should be treated in like manner. The quantity of other kinds in store should be noted, as a guide in making out the future order for seeds. Examine the Onions in store for decaying bulbs. Shallot and Garlic must be kept as cool as possible, or they will start into growth.

PITS AND FRAMES should have every attention, the cold frames having a lining 1 foot or more thick of tree leaves or stable litter put round them up to the wall plate, to keep out frost. The lights of cold pits and frames should be covered at night with bracken or litter with mats over all. Take care that all the air and light possible are admitted to the inmates in mild weather, and afford water with care. Expose Cauliflowers or Lettuce in pits, frames, and hand-glasses, unless the weather is very severe. Should the weather be very frosty, however, put the lights on, and keep them closed, but do not cover unless there is danger of the plants becoming severely frozen, for it is a long time to the spring, and the hardier the plants are handled, the better they will withstand the winter's cold.

MUSHROOM-HOUSE.—Fire-heat may now be required to keep up the desired temperature, that is from 55° to 60° Fahr., and very little fire-heat will be wanted if there are several new beds in the house, and it is substantially built. Continue to get materials in readiness for new beds.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

WINTER FLOWERS: THE TUBEROSE.—The very general demand for these fragrant white flowers during the winter months obliges the gardener to exercise considerable care in the management of the bulbs, so as to keep up a constant supply of bloom. A steady bottom-heat of not more than 70° is necessary for them during the dark days, and the top warmth of the pit or house of 60° to 65° by night, and 70° to 75° by day. A small amount of air should be afforded daily, and no more water at the root than is required to keep the plants gently moving, or spotted foliage will result. Daily syringing should not be the rule, but a moist air should be maintained by damping the floors and walls, and advantage should be taken of bright days to syringe early in the day with an insecticide, to keep down red-spider and thrips. A liberal supply of good plant-food must be afforded plants which have plenty of roots. The best place for plants in bloom or approaching flowering is a span-roofed house, about 12 feet wide, with a path in the middle, and a bed on each side, with hot-water pipes beneath it.

BEGONIAS.—The winter-flowering varieties *Gloire de Sceaux*, *Ingrami*, *Knowlesiana*, *nitida*, *parviflora*, and *Weltoniensis*, if required for decorative purposes, should be pushed on in a temperature of about 55° by night, 60° to 65° by day, with plenty of ventilation during fine days. These varieties are best if kept rather dry at the roots, with not much moisture in the house at this season.

RICHARDIAS (CALLAS).—These winter-flowering plants must have much attention given them. Many of the plants which are growing in 6 and 7-inch pots are now in spathe in a warm greenhouse. Richardias must not receive much water if kept in a cool house, but when they are dry, afford them a watering of clear soot-water, and ventilate daily in mild weather, or the growth will be slender and weak. Any required in quantities about Christmas-time, if showing their spathes, may be placed in a moist pit or house, with a warmth of about 55° by night, and 65° by day, removing them to a cool house as soon as the spathes begin to open. Richardias will stand nearly a month in good condition at this season in a cool conservatory; and for church decoration they are invaluable.

LAURUSTINUS.—A batch of the white-flowered variety should be placed in a warm house. Grown in 8 and 10-inch pots, they are often useful for standing in cold rooms, corridors, &c.

CHRYSANTHEMUMS.—Ethel, Peter the Great, and Julia Lagravère, good varieties for decoration at the end of December, should be kept as cool as possible, affording them an abundance of air night and day. Untrained plants of *Middle*, *Lacroix* were at their best last Christmas; this year they are a month earlier.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Plants, Fruits, &c., to be Named.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be good ones, carefully packed and numbered, and not more than six should be sent at one time. Leaves only, or Florists' varieties cannot, as a rule, be named.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

SATURDAY, Nov. 25—Royal Botanic Society.
TUESDAY, Nov. 28—Royal Horticultural Society's Committees, at the Drill Hall, James Street, Westminster.
FRIDAY, DEC. 1—Dundee Horticultural Association.

SALES.

MONDAY, Nov. 27—Dutch Bulbs, at Protheroe & Morris' Rooms.
 Plants, at Protheroe & Morris' Rooms.
 Bulbs, Liliums, Roses, Plants, &c., at Stevens' Rooms.
TUESDAY, Nov. 28—Clearance Sale of Greenhouse Plants, &c., at Oakwood, Tottenham, by Protheroe & Morris.
 Dutch Bulbs, at Protheroe & Morris' Rooms.
 Special Sale of Tuberoses, Begonias, Liliums, &c., at Protheroe & Morris' Rooms.
WEDNESDAY, Nov. 29—Dutch Bulbs, at Protheroe & Morris' Rooms.
 Important Sale of Nursery Stock at Ivy Lane, Brockley, S.E., by order of Messrs. B. Maller & Sons, by Protheroe & Morris.
 Bulbs, Liliums, Roses, Plants, &c., at Stevens' Rooms.
THURSDAY, Nov. 30—Dutch Bulbs, at Protheroe & Morris' Rooms.
 Great Sale of Lilies, Palm Seeds, Greenhouse Plants, Roses, &c., at Protheroe & Morris' Rooms.
 Established and Imported Orchids, Dutch Bulbs, Liliums, Roses, Plants, &c., at Stevens' Rooms.
FRIDAY, DEC. 1—Important Sale of Orchids, at Protheroe & Morris' Rooms.
 Dutch Bulbs, at Protheroe & Morris' Rooms.
SATURDAY, DEC. 2—Dutch Bulbs, at Protheroe & Morris' Rooms.
 Liliums, Roses, Plants, Bulbs, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°·4.

A SHORT time since we had the pleasure of publishing a statement from Messrs. SUTTON relating to their success in obtaining a cross with *Solanum Maglia*; and now, after having had the opportunity of seeing the crop, we are in a position to give some further details concerning it. But, as some few years have elapsed since experiments in this direction were first talked about, it is desirable to recall some circumstances which may have slipped the memory of the reader,

Amongst other means of evading or of paliating the disease caused by the *Phytophthora*, it was suggested that an attempt should be made to break entirely new ground, or to infuse fresh vigour into the Potato by the introduction of species heretofore uncultivated in this country, and by effecting crosses between them and the best of our present race of Potatos. With this end in view, our valued friend and contributor, Mr. J. G. BAKER, at the instigation of Lord CATHCART, made a careful study of the wild types, both dried and living, so far as circumstances permitted, and embodied the results in a paper read before the Linnean Society on January 17, 1884. In that paper Mr. BAKER distinguished six forms as sufficiently marked off to entitle them to specific rank and name. Of these six, the only one which concerns us at the moment is *Solanum Maglia*, a native of the sea-shores of Chile, thriving in rocky situations and on clay soil, but not met with either in sandy or in rich soil. The plant is found from the sea shore up to elevations of 400 feet, and does not penetrate inland beyond a few miles. It is thus, like so many of our cultivated vegetables, originally a maritime plant. What the meaning of the word *Maglia* may be we do not know. The plant was met with also by Mr. DARWIN in the *Chonos Islands*, and commented on by him in the *Voyage of the Beagle*; and, according to Mr. BAKER, it is specifically the same as that described by Mr. SABINE in the fifth volume of the *Transactions of the Horticultural Society*, and which was cultivated so long ago as 1823 in the garden of the Horticultural Society at Chiswick, where the produce was noted to be most abundant, two plants yielding in a single season about 600 tubers of various sizes, some as small as the original wild ones, which were globose and under an inch in diameter.

It has been proposed to call this Potato, in popular language, the Darwin Potato, but in consideration of the history of the plant as above summarised, the application of the name of the great naturalist would scarcely be fair to his predecessors. Although, as we have seen, it was in cultivation at Chiswick about 1822 or 1823, and although it was reintroduced to Kew in 1862, and cultivated there since that year, it does not appear that anyone undertook experiments with it until Messrs. SUTTON took the matter in hand. In 1887 those gentlemen succeeded in obtaining a cross from *S. Maglia* received from Kew, by pollen of a form of ordinary tuberosum (a seedling from *Victoria*). The produce was two perfect seeds only, but from the plants so obtained called "H.1,'88" and "H.2,'88," Messrs. SUTTON secured in 1888, cuttings and rooted suckers, and from these in succeeding years they obtained successive crops of tubers. These were grown in the trial plot, in rows, side by side, under exactly the same conditions, two rows of *S. Maglia* being grown for comparison. The tubers of this species, as here grown, are cylindric, oblong, obtuse, rather irregular, with a purple skin, and deeply-sunken eyes, the young shoots whitish; the flesh is firm, whitish, externally more or less purple towards the centre. With regard to the colour of the tubers, however, it is remarked that it varies with age and exposure, and tubers that when dug were pale in colour, subsequently become more or less coloured, the *Maglia* tubers proper being always dark coloured.

It is not necessary to repeat here all the details which have been carefully recorded by Messrs. SUTTON, but it is necessary to advert to the history of the cross designated as H 2,

1888. This, as we have seen, was originated as one of the twin seedlings originally obtained by crossing *S. Maglia* with the pollen of the *Victoria* seedling. In 1892 Messrs. SUTTON record of this seedling the follow note:—

"1892. H. 2/88. This seedling has been grown in flower-pots for three years, on account of its weakness, but this year (1892) it was planted outdoors, which much improved it in size of tubers. Although a most trying season, there was no trace of disease. Three tubers were planted, but one failed; upon lifting the two plants on October 11, 1892, "the" crop consisted of twelve tubers, very handsome, white, and round, in shape somewhat resembling *Schoolmaster*, with a very beautiful skin.

"1893. H. 2/88. Six tubers planted this year, and upon examination of the tubers when lifted, four roots were found to be of the same type as the previous year, and these produced an extraordinarily large crop, but not quite so round in shape as last year. The other two plants ran back to very small tubers, and a large quantity of delicate fibrous roots, but the haulm was the same in every respect as the four plants just described, being very strong, leaves rough like *Victoria*, but the points of the shoots resemble those of H 1/88."

As we saw it, the crop of this seedling was large, the tubers rounded, somewhat irregular, white-fleshed, and subject to premature growth or supertuberation, doubtless in consequence of the occurrence of wet weather following the long dry hot summer. In quality and in quantity the crop was very remarkable.

We now come to the series of crosses made in July, 1891, between the pollen of the two hybrids, H.1,'88 and H.2,'88, with *Imperator* and with an undetermined variety respectively. In the following year, 1892, the extraordinary productiveness of these crosses was noted, and in the present year this productiveness is also very noticeable in some, but not in all the offspring. This may be gathered from the following extracts from the record book:—

"10 × 91. Hybrid 1/88 upon *Imperator*. This cross produced twelve seedlings, as under:—

- No. 1. White round, lemon flesh (good shape, round), fair crop, and tubers of good size.
2. White round, white flesh, good crop.
3. White kidney, white flesh, good crop.
4. White round, white flesh, very poor crop.
5. White kidney, lemon flesh, an extraordinarily heavy crop of very fine tubers.
6. White round, white flesh, very poor crop.
7. White round, white flesh, fair crop.
8. Pink mottled round, very similar in colour to *White Elephant*, but the tubers are more round than that variety, the crop being extraordinary, with tubers growing close to the stem.
9. White kidney, white flesh, fair crop.
10. White kidney, white flesh, poor crop.
11. White kidney, white flesh, a very heavy crop indeed of large-sized tubers.
12. White kidney, lemon flesh, facsimile to last, good crop.

The following details relating to the weight of the crop of the several seedlings will be read with interest, and show how great is the amount of variation:—

WEIGHTS OF POTATOS 10 × 91.

No.	Sets planted.	lb. oz.	No.	Sets planted.	lb. oz.
1	6	3 12	7	8	6 1
2	8	10 5	8	6	17 7
3	4	2 9	9	4	1 10
4	1	0 3	10	4	0 11½
5	8	33 9	11	8	32 2
6	4	4 5	12	8	24 3



THE ITALIAN GARDEN, WELLESLEY, MASS.

"12 x 91. Hybrid 1/88 upon an undetermined commercial variety; this cross produced twenty-nine seedlings, as under:—

- No. 1. White kidney, white flesh, fair crop.
 2. White round, white flesh, very poor crop.
 3. White kidney, white flesh, fair crop.
 4. White kidney, white flesh, very good crop.
 5. White round, white flesh, fair crop.
 6. White round, white flesh, very large crop.
 7. White round, white flesh, fair crop.
 8. White round, white flesh, fair crop.
 9. White kidney, white flesh, fair crop.
 10. White round, white flesh, fair crop.
 11. White round, white flesh, very heavy cropper.
 12. White round, white flesh, large crop.
 13. White kidney, white flesh, very good crop.
 14. White round, white flesh, fair crop.
 15. White kidney, white flesh, very heavy crop.
 16. White round, white flesh, good crop.
 17. White round, white flesh, good crop.
 18. White round, white flesh, very large crop.
 19. White round, white flesh, fair crop.
 20. White kidney, white flesh, very poor crop.
 21. White round, white flesh, very poor crop.
 22. White round, white flesh, very large crop.
 23. White round, white flesh, good crop.
 24. White kidney, white flesh, good crop.
 25. White round, white flesh, very good crop.
 26. White round, white flesh, good crop.
 27. White round, white flesh, very large crop.
 28. White round, lemon flesh, poor crop.
 29. White kidney, white flesh, good crop."

WEIGHTS OF POTATOS 12 x 91.

No.	Sets planted.	lb. oz.	No.	Sets planted.	lb. oz.
1	3	3 4	16	8	11 12
2	3	0 6½	17	8	6 5
3	6	2 4	18	8	18 0
4	8	12 11½	19	8	12 14
5	8	4 6	20	4	1 9½
6	8	13 13	21	No record	3 1
7	8	3 4	22	8	11 10½
8	8	2 8	23	8	11 10½
9	7	6 0	24	8	13 0
10	8	8 3	25	8	17 4
11	8	25 14	26	8	13 13
12	8	7 11	27	8	11 7
13	8	13 1	28	3	1 8
14	8	12 12½	29	4	4 6
15	8	16 3			

Out of these forty-one crosses, Messrs. SUTTON will probably not deem it necessary to retain, for permanent cultivation, more than a few. But, as we have shown, some of these seedlings are of extraordinary promise as to productiveness, whilst others are of symmetrical form, clear skin, differing also in the arrangement of the "eyes," and in their greater or less degree of depression beneath the surface.

The haulm and foliage had, of course, almost entirely disappeared at the time of our visit, early in November, but some traces still visible showed in these Maglia crosses a degree of woodiness, which leads to the inference that Potatos so endowed would be better able to withstand the attacks of the fungus than those of a more succulent, or as gardeners say, "sappy character."

Many of the crosses produced flowers this summer, and we were informed that the inflorescence and colour of the flower largely partook of the characteristics of Maglia. What power the new seedlings may have to resist the disease remains to be seen. Happily, this year the fungus did not put in an appearance except on a very modest scale. But in any case, Messrs. SUTTON have with infinite patience and characteristic thoroughness, carried on for a series of years a number of experiments which cannot fail to be of much scientific interest, whilst, as we have shown, the prospects as regards the introduction of new, and commercially profitable varieties are of so encouraging a character that

we earnestly hope Messrs. SUTTON will be induced to continue their researches, and ultimately endow us with an entirely new type of Potatos.

The Royal Horticultural Society.

We learn that a proposal is under consideration, which, if carried out, may be of great importance to the future of the Royal Horticultural Society. We do not know the full details of the scheme, but we believe it is a proposal on the part of the managers of the Imperial Institute that the Society shall rent, on advantageous terms, a portion of their ground at South Kensington on which to erect a hall for flower-shows, with offices, committee-rooms, &c. Those who remember the history of the Society, and specially those who took a prominent part only a few years since in extricating it from the foul slough which was so nearly fatal to it, may well stand aghast at the bare thought of returning to a locality where a complete wreck was so nearly experienced. The locality, it is true, was not so much to blame as some other parts of the "environment;" nevertheless, experience has shown that the locality is not favourable for the work of the Society, a more central position being much more advantageous to it. The present offices in Victoria Street are well situated and convenient, though more space is required. The Drill Hall, where the fortnightly meetings are held, was only taken as a makeshift; and, in spite of its obvious defects, it has, on the whole, not been a bad makeshift. It has found favour with exhibitors to such an extent, that of late the hall has been found not large enough to accommodate all the exhibits proffered. The Society moreover has, under existing circumstances, made more progress than during the whole time it was at South Kensington, if we except the first year or two. These and many other circumstances must be taken into consideration, and special care should be, and we are sure will be, taken to avoid any entanglement such as that which brought such discredit on the Commissioners, and such embarrassment on the Society. The Imperial Institute has not yet achieved such a measure of success as to make it politic to associate the Society with it. On the other hand, all thanks to the persistent loyalty of the President, and to the active exertions of a small body of the Fellows, some of whom are still members of the Council, the Society has once again achieved a position of independence and influence, which must be, and no doubt will be, most jealously guarded in the future. Doubtless, no definite step will be taken till the Fellows and exhibitors have been made acquainted with the full details of the scheme.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committees will take place in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, November 28, when special prizes will be offered for groups of Chrysanthemums naturally grown. At 3 o'clock, Mr. T. CRASP, F.R.H.S., will deliver a lecture on "Late-keeping Grapes."

NATIONAL ROSE SOCIETY.—We are informed that the annual meeting of the above will be held at the Horticultural Club Rooms, Hotel Windsor, Victoria Street, Westminster, on Thursday, December 7, at 3 o'clock; the Rev. W. WILKS, Secretary of the Royal Horticultural Society, will take the chair. The annual dinner will take place at the same hotel on that day at 6 P.M. The dates fixed for the exhibitions in 1894 are:—the Southern exhibition, June 27, at Windsor; Metropolitan exhibition, Crystal Palace, July 7; Northern exhibition, at Halifax, July 19.

THE HORTICULTURAL CLUB.—The usual monthly dinner and *conversazione* took place on Tuesday, the 14th inst., at the Hotel Windsor, when there were present Messrs. John Lee, Harry J. Veitch, J. S. Cousens, C. G. Drury, George Paul, T. W. Girdlestone, and others. The discussion was on Cannas, and was opened with a very able and instructive paper by Mr. GEORGE PAUL, in which the history and the mode of culture were exhaustively stated. An animated and interesting discussion, in which most of the members present took part, followed, and a cordial Vote of Thanks was awarded to Mr. PAUL. Mr. CHARLES TURNER contributed some fine dishes of Apples, and also Chrysanthemum blooms for the decoration of the table.

TRINITY COLLEGE, DUBLIN.—The well-wooded park surrounding the University has been placed by the Provost and Board of Senior Fellows under the charge of Mr. F. W. BURBIDGE, M.A., who has also the Curatorship of the Botanic Garden.

AGRICULTURAL RETURNS, 1893.—In accordance with the usual practice, the Board of Agriculture issued, in August last, a preliminary summary showing the acreage of the principal crops and the number of live stock in Great Britain on June 5, 1893, as returned by occupiers of land and owners of live stock. The further tables now published, in advance of the annual volume of *Agricultural Statistics for 1893*, will complete the information collected as to the extent and distribution of the various crops, and the number and classes of live stock in the several divisions of the United Kingdom, including the Channel Islands and Isle of Man, and will furnish the particulars for each county in Great Britain. The features presented by these returns will, as usual, form the subject of a general report accompanying the tables of the annual volume to be issued after the close of the year. From the figures now published, we learn that the total cultivated area of the United Kingdom amounted in 1893 to 47,979,698 acres, a slight increase over 1892. Corn crops occupied 9,171,170 acres, or a slight diminution as compared with the preceding year. Green crops, including Potatos and roots, 4,462,755 acres—a slight increase. Clover and Sainfoin occupied 5,916,349 acres—a slight decrease. Permanent pastures, 27,700,381 acres—a slight increase. Small fruit was cultivated over 65,845 acres in 1893, as compared with 62,547 acres in 1892, the increase being chiefly in England. By far the largest area under small fruit occurs in the county of Kent, where no fewer than 20,458 acres are said to have been devoted to it in place of 19,821 acres in 1892. At least five times more space is devoted in Kent to small fruit culture than in any other county; in only one or two other counties does the area amount to 3000 acres, and in most cases to very much less.

DR. GEORGE BENNETT.—We learn from *Nature*, of the death of our old correspondent, Dr. GEORGE BENNETT, of Sydney. Dr. BENNETT was, we believe, the brother of the late J. J. BENNETT, of the Botanical Department of the British Museum, and the contemporary and friend of the late Sir RICHARD OWEN, and of the most distinguished men of science of his time. He travelled in New South Wales and Ceylon, and a few years since revisited his old home, when his vigour of mind and body excited the attention of all who knew him. Dr. BENNETT was ninety years of age.

SKIMMIA CROSSED WITH AUCUBA?—We have received the following from our Belgian correspondent in reference to the [?] which we felt constrained to insert at p. 626. We hope our Belgian friends will excuse us if, until further evidence is forthcoming, we still entertain doubts on the subject: "Here is the account of this hybridisation (see *Gardeners' Chronicle*, p. 626) as given to us by its originator, M. FRANÇOIS DESBOIS, one of the oldest and most experienced of our Belgian nurserymen. In 1890 he crossed a *Skimmia japonica* with the pollen of a variegated *Aucuba*. Of the entire cluster of flowers on the *Skimmia*, one only ripened seed and attained maturity. This single seed was sown, it was brown, hard, and horny,

as that of an *Aucuba japonica*. The seed was six months germinating. Now, a *Skimmia* seed germinates in a few days (three or four in a warm house). The seedling put forth three small leaves, then the stem began to grow thicker rapidly. Last year the young plant bore five branches, the leaves on which were speckled with yellow dots, but this variegation faded away during the course of the summer. This spring (1893) these five branches bloomed, but only bore male flowers; this, as we know, is never the case with *Skimmia japonica*, which is hermaphrodite [probably *S. Fortunei* is meant. Ed.]. The leaves and stems exactly resemble those of *S. japonica*, save for the swelling at the base. After blooming last spring, the branches put forth fifteen ramifications, which now bear each a large cluster of flower-buds. The plant at this time measures about a foot high, 15 inches across, and 3 inches round the base of its little trunk. It is very pretty, and resembles a *Viburnum tinus* covered with buds. *Ch. D. B.*

GRAFTING CHRYSANTHEMUMS.—M. ALEXIS CALLIER, who introduced the plan of grafting Chrysanthemums on *Anthemis frutescens*, showed, at the Brussels exhibition on November 12, a specimen of the variety "Val d'Andorre," which measured about 9 feet in diameter, and bore 783 flowers. A special waggon conveyed this plant from Ghent to Brussels, and on its arrival at the exposition buildings, the doors had to be taken off their hinges to admit it. At the exhibition at Antwerp, which opened on the same day, four grafted Chrysanthemums were staged, *La Triomphante* measuring more than 8 feet across, and with 450 well-opened flowers; *Etoile de Lyon*, 4 feet across, and with 100 blooms, of which more than forty were of great size. All were of an unusually deep rose colour; was it only light, or in an equal degree the influence of the graft which imparted this beautiful tint to the flowers? These two fine plants were from M. JEAN EVERAERTS. M. HENRY VANDERLINDEN showed a fine Val d'Andorre, and M. A. LINDEN a good *Mlle. Rose Sibours*, both being grafts. We can safely prophesy that grafting will some day be generally adopted, or at least more largely than at present.

CANNA QUEEN CHARLOTTE (KÖNIGIN CHARLOTTE).—This is a very handsome *Canna* of relatively dwarf habit, compact inflorescence, and large flowers with broad segments of a deep red, with a wide margin of canary-yellow. The variety was raised by Mr. PFITZER of Stuttgart.

PROFESSOR MARSHALL WARD.—A Royal Medal has been awarded by the President and Council of the Royal Society to this gentleman, in recognition of the merit of his researches into the life-history of fungi.

WILLIAMS' "ORCHID GROWERS' MANUAL."—A new and much enlarged edition of this work is in the press. When we mention that this is the seventh edition, it will be acknowledged that it needs no recommendation from us.

BUENOS AYRES.—SEÑOR CHARLES THAYS sends us a note concerning the recently-instituted Botanic Garden at Buenos Ayres, of which he is the Director. The new establishment includes an arboretum and houses affording accommodation for plants from all latitudes. SEÑOR THAYS is desirous of effecting exchanges of seeds, bulbs, roots, &c., with other institutions similar to his own, being able to offer in return for specimens from other lands many interesting samples of the rich and beautiful flora of the Argentine Confederation. He particularly requests that all in a position to effect such exchanges will communicate with him, addressing their letters and parcels to, 1676, Calle Caceros, Buenos Ayres.

PROFESSOR L. H. BAILEY.—This gentleman has retired from the editorship of *American Gardening*, and will, it is presumed, have more opportunities of carrying on those experimental researches and practical trials which are so important.

RIVER POLLUTION.—MR. FRANK SPENCE, in an article reprinted from the *Contemporary Review*,

points out the existing methods of purification of our streams, methods which have the very serious defects of entailing a very long delay before they are carried out, and of being imperfectly done after all. MR. SPENCE's proposed method of obviating this is to place the outflows of all sewage works under regular inspection by officers of the Local Government Board, just as chemical works are supervised under the provisions of the Alkali Acts. The inspector would allow the local authorities to deal with the sewage in whatever way they think proper, he would concern himself only with the results. Such a system, says the author, would transform the local sanitary authorities from "mere rate-savers for popularity's sake, into local administrators, proud that they have made their effluents odourless, colourless, and suitable for fish-life." MR. SPENCE considers the provisions of the Alkali Act to be quite adequate to secure inspection of sewage effluents, as well as of factories.

MR. J. BURTT DAVY, late of the Royal Gardens, Kew, publishes in "Erythea" (the *West American Journal of Botany*) for September, some interesting teratological notes of plants found by the writer in California. One of the most important of his discoveries was a "plant of *Agoseris hirsuta* growing by the roadside near Lorin Station, Berkeley, which bore a number of abnormal heads," and in which the pappus had developed into foliaceous green sepals.

DUBLIN.—At the Chrysanthemum show, Royal Horticultural Society, Ireland, lately, there was the finest show of Apples and Pears ever seen in Dublin—no orchard-house samples, but all *bona fide* open air produce. MR. LOMBARD'S Pears and Apples were superb in size and quality. The Chrysanthemums, both groups of plants and of cut flowers, were quite up to the best standards, the numerous competitions being very keen. Mrs. ROSS's exquisite dinner-table was much admired, being a simple arrangement of Florence Davis Chrysanthemums, with suitable greenery, combined by sprays of the crimson leaves of the Persian Plum (*Prunus Pissardi*). The Lord Lieutenant and suite attended, and there were numerous other distinguished visitors.

THE ROSE-COLOURED CALLA.—This plant, of which we lately gave a small illustration, proves to be, as was expected, *Richardia Rehmanni*, originally described by ENGLER as *Zantedeschia Rehmanni*. The plant is named in honour of REHMANN, a well-known botanical collector. The plant when exhibited by MESSRS. KRELAGE at the Floral Committee of the Royal Netherlands Horticultural Society, received a First-class Certificate.

TADCASTER PAXTON SOCIETY.—At the weekly meeting of the above, held on Thursday evening, November 16, an excellent paper was read by MR. CALLUM, B.A., on "The Efforts of Plants for Self-preservation," illustrated by black-board sketches. A very hearty vote of thanks was accorded to MR. CALLUM for his interesting paper.

BOILERS.—At Kew we learn relatively little damage was done by the recent gale, but some part of the heating apparatus of the Palm-stove gave way, and as a consequence continuous pumping for upwards of twenty-four hours was necessitated. In the same night a similar accident, but on a very much smaller scale, occurred at the gardens of the Royal Horticultural Society at Chiswick.

MR. BAILEY DENTON.—We regret to have to announce the death of MR. J. BAILEY DENTON, a very old contributor to this journal. He was in his eightieth year when he died on Sunday last. MR. DENTON took part in the construction of several lines of railway, but agriculture was his hobby. The attention of MR. DENTON was early devoted to the subject of land and town drainage, upon which he has long been recognised as an expert. The purification of sewage on land, and its subsequent use as manure, which has been carried out in several large towns, was mainly the result of his suggestion. Of

late years he had been greatly interested in another question, which the recurrence of two or three consecutive dry seasons would raise to the first rank in practical importance—that of the storage of rainfall. MR. DENTON's country house was at Stevenage, in Hertfordshire, and of late years he took much interest in the cultivation of Orchids.

THE CHRYSANTHEMUM.—It is very satisfactory to note the growing tendency to break away from the rigid formality and "properties" of the old florists, and to observe that a more natural style of growth of the Chrysanthemum is finding favour, and that a more attractive style of exhibiting is gradually being adopted. The tendency was observable even at the Rose shows, the most conservative of bodies in this respect, still more so at the Dahlia Show, most of all at the late exhibitions of the Chrysanthemum. The favour which the Japanese varieties enjoy has much to do with this return to good taste, and no doubt we shall improve as we go on, till the mops and mop-handles are relegated to the collections of anatomists and physiologists as interesting curiosities, fitted only for the dissecting-room of the botanists.

THE SEASON.—Elaborate records have been published as to the effect of frost on our cultivated plants, notably the excellent report published by the Royal Horticultural Society under the auspices of the Scientific Committee and the editorship of Professor HENSLOW. Is it not desirable that a similar record, it need not be on so elaborate a scale, should be undertaken, with reference to the effects of the most remarkable season those now living are ever likely to experience again? The ripening of Pears, for instance, is taking place in extraordinary fashion; on the other hand, the Chrysanthemums do not seem to have been much affected. A general review setting forth which plants have and which have not been influenced by the prolonged heat and drought should be made before the details fade from memory, as undoubtedly they soon will.

GRAPE-GROWING can hardly be regarded as very profitable, when, as we learn has been the case this season, Grapes have sold at as low a price as 4d. per lb. in the wholesale market, and Gros Colmar at no more than 9d. or 10d. These prices have had the effect to some extent of beating the foreign Grapes out of the market.

CHOISYA TERNATA.—MR. GEORGE PAUL tells us that when planted against a wall, this beautiful shrub throws out roots like those of the Ivy, and by means of which it attaches itself to the wall.

HORTICULTURAL COLLEGE, SWANLEY.—The experimental committee of the Kent County Council met on the 16th inst., when the organisms found on the nodules of roots of Broad Beans were examined by the aid of the microscope, and their supposed uses in the economy of the plant discussed. The four-course rotation of cropping was next touched upon, and then Professor CHESHIRE proceeded to lecture on the germination of seeds. The next meeting will be held on Thursday, November 30.

CHRYSANTHEMUM SHOW AT BOTANIC GARDENS, GLASGOW.—It is stated by a Glasgow correspondent that upwards of 15,000 persons visited the Chrysanthemum show which was held in the Botanic Gardens, Glasgow, on Saturday, the 18th inst. The exhibition was arranged by MR. DEWAR, Curator, at the gardens, and the magnificent display that was brought together reflects great credit on him. The show consisted of about 600 plants, there being upwards of fifty varieties. A large quantity of Orchids and Camellias were also exhibited.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held on Monday, December 4, when a paper will be read by MR. R. GODFREY (Fellow) on "The Local Government Bill, 1893" (generally known as "The Parish Councils Bill"). The chair to be taken at 8 o'clock.

TAXODIUM DISTICHUM.

It is not long since we had the opportunity of laying before our readers illustrations of this elegant and interesting tree, and of summarising what is

wall, from which the accompanying illustration is taken. The cones are much smaller than native-grown specimens, but they bear seeds of the usual three-sided form. One of the cones sent by Mr. Rashleigh was proliferous, that is to say, the cone

of the cone. The texture of the fruit-scale is somewhat spongy, and in the cellular tissue, as also in the central axis, there are several resin canals of large dimensions. *M. T. M.*

HOME CORRESPONDENCE.

RICHARDIA REHMANNI.—The plant figured in the *Gardeners' Chronicle* for November 4, p. 564, as "Richardia De Waal" is *R. Rehmanni*. A leaf of it has been sent to Kew by Messrs. Krelage & Sons, and I have compared it with the type specimen kindly lent to me by Professor Schinz, of Zurich, for that purpose, and find that it is certainly the same species. This plant was originally described by Engler in his *Botanische Jahrbücher*, 1883, vol. iv., p. 63, as *Zantedeschia Rehmanni*. In 1888, a specimen was sent to Kew from the Cambridge Botanic Garden, which I took to be this species, and rightly as I now find, and a notice of it was published by Mr. Harrow in the *Gardeners' Chronicle*, 1888, vol. iv., p. 570, under the name of *Richardia Lehmanni*; but as this is an evident misprint for *Rehmanni*, it appears to me that Mr. Harrow must still stand as the authority for the name, which will therefore be *Richardia Rehmanni*, Harrow. In the issue of November 4 above quoted, by some mishap the name is also wrongly quoted as *R. Lehmanni*. *N. E. Brown.*

MALFORMED CATTLEYA BLOOMS.—In your issue for November 11, I saw that a *Cattleya labiata* had opened with the two lower sepals forming two labellums, and taking the same colours, and the top sepal formed as a petal. I have also a plant with two leads which has done the same thing on both leads; but I do not care for it, as the lower sepals sit into the labellum proper too closely, and spoil the appearance of the flower. *T. W. Browning, Curass Court, co. Limerick.*

GROS COLMAR GRAPES AT THE BIRMINGHAM SHOW, NOVEMBER 15 AND 16.—For the fourth year in succession the first prize in the class for three bunches of Black Grapes, any variety, has been won by the same exhibitor and with the same variety, Gros Colmar, and also the 1st prize for one bunch Black Grapes, any variety, and J. T. Harris, Esq., Hayes Hall, Stone, Staffordshire, is to be complimented on his success. The bunches staged on this occasion were finer than ever before, the three weighing a little over 16 lb., and perfect in size and colour. Mr. Bates, the head gardener, grows this handsome Grape to a state of perfection seldom seen, as the bunches staged at Birmingham were only a sample from a vineyard planted with this variety, each cane in which carries from six to ten bunches, and all equally well finished, showing how well Grapes can be grown near the pottery towns of Staffordshire where skilful attention is paid to their cultivation. *Robert Cook, Stafford.*

NARCISSI BLOOMING TWICE IN ONE YEAR.—Bulbs under the most favourable circumstances grown naturally, are not expected to bloom twice in one year, yet such is the case in the Isles of Scilly this year, and never in the history of floriculture in the islands has such a thing been known before. For some four or five years past it has been a great effort to get them in the forcing houses before the last week in December; in the open ground the middle of January was considered early, but this year they are earlier than ever. At the present time large patches of *Soleil d'Or* are in full bloom from bulbs that bloomed in January, not only the variety mentioned, which is one of our first to bloom, but *Paper White*, *Scilly White*, and *Gloriosa*, are also being cut for market. *Anemone fulgens* flowers are also being cut from beds that bloomed in March. Nearly all the varieties of Trumpet Narcissus are pushing their heads above ground. The foliage is looking healthy and strong, and the promise of bloom is good. Should there be a fine spring and summer, bulbs may be expected to be large and sound, on account of the time that will necessarily elapse between the blooming season and the season of rest. *J. C. Tonkin, St. Mary's.*

EFFECTS OF FERTILISERS ON PEACH TREES.—The following experiments, conducted by Mr. S. C. Dayton of New Jersey, should be of service to many of your readers. The object aimed at has been to ascertain the effect of various fertilisers on the gross yield, and on the net profit. The experiments were commenced in 1884. Nitrate of soda, 150 lb.,



FIG. 105.—TAXODIUM DISTICHUM; WITH CONES AND SEEDS.

known concerning it and its near relative in Mexico. The tree is quite hardy in this country, and attains large dimensions, as may be witnessed in the noble trees at Sion, but it very rarely produces its cones. Recently, however, we were favoured with fruiting specimens by J. Rashleigh, Esq., of Menabilly, Corn-

terminated in a branch bearing leaves and male flowers, and from the sides also appeared leaf-bearing branches emerging from between the scales. Examination showed that these supplementary branches formed no part of either bract or scale, but were entirely separate outgrowths from the axis

superphosphate, 350 lb., and muriate of potash, 150 lb., were used singly, two by two, and all three together; plaster, 400 lb., barnyard-manure, 20 two-horse loads, and a mixture of 10 loads barnyard-manure and 50 bushels of lime per acre, were each used on one plot; and two plots remained unmanured. The variety of fruit is Crawford, and late Walacatoons. The first crop was picked in 1887. This was a small crop. In 1888 a good crop was secured. In 1889 the crop was again small, and in 1890 it was an entire failure, as elsewhere in the State. Last year a very large crop was picked, though poor in quality. Of the single elements, nitrate of soda has not increased the yield, plot 2 barely holding its own with plot 1 (unfertilised). Both superphosphate and muriate of potash have been effective, though decidedly in favour of the potash. The increased yields from combinations of two elements are large and practically uniform. The best yield from chemical manures is from the complete fertiliser, but this is forty baskets lower than that from the farmyard-manure; muriate of potash, however, was the most valuable of the single elements as regards pecuniary results, giving a greater net gain than barnyard-manure. The most profitable combination of two elements was that of muriate of potash with superphosphate, though nitrate of soda was decidedly beneficial when used in connection with either, and in all cases more profitable than large dressings of barnyard-manure. The largest net gain (\$308.79) was on the plot where complete chemical manure was used. To sum up: nitrate of soda alone did not increase the yield. The other two fertilisers alone, or combined, and especially complete fertilisers, were effective. The largest yield was from barnyard-manure. On the basis of cost of fertiliser per basket of Peaches, the best return was from muriate of potash alone, followed by the complete fertiliser. On the basis of selling price, the largest net profit was from the complete fertiliser. *H. Roberts, St. Mary's Hospital, W.*

THE SHANKING OF GRAPES.—In your instructive and interesting article on the shanking of Grapes (p. 624), you ask if some gardener who has had to do with shanked Grapes would try a shallow stony border, &c. I hope there are gardeners in the position to try the experiment, for from such trials as these useful results would unquestionably be obtained. Now, will you allow me to make another request, to those who are troubled with shanked Grapes, namely, to turn out of the viney before growth commences the Vines whose fruit is most subject to shanking, fastening them carefully along the outside front in a warm sunny aspect, giving them the same kind of treatment as regards pruning, &c., as those inside, leaving on a fair crop to come to maturity, and moderately thin the bunches, and next autumn report to the *Gardeners' Chronicle* their behaviour in the matter of shanking. The Black Hamburg Vine would be the most suitable variety to experiment with, as it would have a fair chance of ripening its fruit. In some of the modern vineries, turning out a Vine for an experiment of this sort would be rather difficult, but I hope some one will be in a position to try it. It would also be interesting to know how well-managed Vines generally behave in unheated houses, especially as regards shanking. From the above remarks it will be inferred that I attribute shanking to atmospheric conditions, which, to a great extent, I believe to be the case. If a hygrometer is hung in the viney, I think it would show in many instances a very parched atmosphere, especially on a bright cold night; and instead of the Vines being in a cool sweet atmosphere, absorbing the moisture which is in contact with the leaves, they are perspiring and exhausting themselves in dry, uncongenial, and unnatural surroundings, causing attenuated and weakly growths. Much might be said on this subject, but enough for the present. Given a shallow border, as suggested at the above-mentioned page, lower night temperatures, and a month longer allowed from the time of starting the Vines to the ripening of the fruit, I think then little would be heard of shanking. *J. Easter, Nostell Gardens, Wakefield.*

PEAR CULTURE IN POTS.—Mr. Douglas writes in favour, in a recent *Gardeners' Chronicle*, of pot culture for Pears, and I am also enabled to testify to the advantages of the system. When living as gardener in Bedfordshire, I had two large orchard-houses under my charge, in which Pears and Plums were grown in pots. Of these the varieties which did best were, Beurré Hardy, B. Superfin, B. d'Amanlis, Madame Treve, Williams' Bon Chrétien,

Clapps' Favourite, and Forelle. The variety Pit-maston Duchess was grown, but discarded, the flavour not being liked. Many of our trees carried from eighty to a hundred fruits, and these not small ones. The flavour was most excellent. *T. Henry.*

HOW TO IMPROVE CHRYSANTHEMUM EXHIBITIONS.—The excellent article under the above heading (*Gardeners' Chronicle*, November 11, 1893, p. 584), from the pen of Mr. Douglas, calls for the earnest consideration of all Chrysanthemum societies, as well as for my grateful acknowledgment. That Mr. Douglas is not alone in his admiration of the prevailing style of exhibiting, is proved by the crowds that, at the Royal Aquarium, pressed round the magnificent table arranged by Mr. Jones, of Lewisham, which was undoubtedly the feature of the show. Of course all gardeners have not the means of rivaling such a table as this; but if societies would only offer prizes for blooms arranged with foliage plants, or cut foliage of any kind, leaving the mode of staging entirely with the exhibitor, our shows would gain in attractiveness, the artistic tastes of gardeners would be cultivated, and complaints of the sameness of Chrysanthemum shows would not so often be heard. Will not the National Society make the experiment for one year at the Aquarium? Let them offer liberal prizes for a small table arranged with foliage plants and Chrysanthemum blooms, without any restrictions whatever, and I fancy the result will be such that the class will afterwards find a permanent place in their schedule. I have often pictured in my mind a stand with an edging of *Panicum* or *Selaginella*, behind which is a bank of Ferns, crowned with a Palm, and a few plants of *Cyperus*, while rising from the Fern are good blooms, with plenty of their own leaves, of all the sections of the Chrysanthemum, the larger flowers below, the singles and Pompons above. Some years ago I proposed a class, somewhat similar to this, in a society to which I belonged. I at first met with great opposition from the party, who are against all "new fangled" notions; but at last it was carried, with some modifications, and it has ever since found a place in its show. Last week I put up a small stand on these lines, at the Finchley exhibition, to which a certificate of merit, in addition to a first prize, was awarded. This stand has been photographed, and if it comes out well I shall be happy to send you a copy. *D. Hayler, Hendon.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 14.—Present: Dr. M. T. Masters, F.R.S. (in the chair); Mr. McLachlan, F.R.S., Dr. Bonavia, R.v. W. Wilks, Prof. Church, F.R.S., Mr. Veitch, Prof. Müller, F.R.S., Prof. Green, Mr. Michael, and R.v. G. Henslow, Hon. Sec.

Onions Diseased.—Mr. Massee reported as follows upon the samples brought to the last meeting:—"The Onions are attacked by a Botrytis, the same species as the one described by Prof. Marshall H. Ward in 'A Lily Disease' (*Ann. of Bot.*, vol. ii.). The bulbs cannot possibly be saved now, the fungus having spent its active period on the leaves; while the hyphæ are now passing into the bulb to form sclerotia. If the foliage had been sprayed with a fungicide the mischief would have been kept within bounds. The diseased Onions should be burnt, and not thrown on to the manure heap."

Daffodil Bulb Diseased.—He also reported upon the specimen brought by Mr. Wilks, that a saprophytic fungus was now present, which had followed a disease induced by some other unascertainable cause.

Pears Diseased.—Mr. Massee sent the following additional remarks upon the fruit reported upon at the last meeting:—"The fungus attacking the Pears first appears upon the leaves, and from thence it passes on to the fruit. The tree should have been sprayed with a fungicide previous to the appearance of bloom, and once or twice after the fruit had set. Bordeaux Mixture has been proved effective." A unanimous vote of thanks was given to Mr. Massee for his interesting and valuable reports.

Job's Tears (*Coix lachryma*, L.).—Mr. McLachlan exhibited a specimen of this Grass, grown in Devonshire in the open air. It is remarkable for the stony involucre, often used as beads. Prof. Church drew attention to another species, *C. gigantea*, Roxb., which is cultivated in the Khasia hills, and elsewhere in Bengal. *C. lachryma* is not cultivated, though

the grain of wild plants is eaten. Prof. Church's analysis of the grain of *C. gigantea* shows that it contains 16.8 albuminoids, and 59.9 starch, &c., so that its "nutritive value" is very high, being 90 per cent. (*Kew Bul.*, 1888, p. 267).

Sphæria Robertii.—Mr. James Veitch exhibited specimens of this well-known parasitic fungus of New Zealand issuing from the neck of a large caterpillar (*Hepialis virescens*). It is called aweto or "vegetable caterpillar." The latter frequents particularly, if not quite exclusively, the Rata tree (*Metrosideros robusta*), and when the pupa burrows into the ground at the foot of the tree, the spores of the fungus attack it, the mycelium ramifying through the body, while the stem bearing the sporiferous asci issues erect from between the folds in the neck of the caterpillar.

Planorbis Shells Split.—Mr. Wilson sent specimens split transversely, with the following observations:—"The shells are deposited in large numbers on the bent-down Rushes at the water's edge of one of our ponds at Oakwood, Wisley. There are no signs of rats near. I much wish to know what cuts them, whether beast or bird." It was suggested by Mr. Michael that if the shell lay half in water a severe frost might possibly have effected it; but they appeared to be quite fresh shells. Mr. McLachlan suggested herons as having perhaps done it. The cause of the peculiarity, however, was recognised generally as obscure.

Winter Moth.—Mr. Wilson sent the following observations on this insect:—"On the 3rd of this month there were fifty-four females on the greased bands on our fruit trees at Oakwood. They do not usually appear so early with us. Great quantities of both females and males have been caught since the above date. Perhaps the wood and ponds are attractive to them. We have so few at Weybridge that it is not worth while to band the trees."

Clitoria Ternatea, peloric.—Dr. Bonavia showed photographs and a coloured drawing (by a native) of this plant from India, illustrating transitions from the normal "Pea-like" blossom to the regular or peloric condition, much resembling a Periwinkle. The colour is a bright blue. It appears to be not uncommon in this species.

Casuarina dimorphic.—Dr. Masters exhibited a specimen received from Baron von Müller, in which a portion had developed sharp-pointed leaves exactly similar to the pointed-leaved form of *Juniperus*, which is often dimorphic in the same way. Mr. Henslow mentioned that these changes are paralleled by the Thuya-leaved forms of *Veronica*, which grow at great altitudes in New Zealand, and observed that analogies seemed to suggest varying degrees of drought or moisture as likely to be the direct cause of the different kinds respectively.

Wheat-eared Sweet William.—Dr. Masters also showed a specimen of this well-known malformation, in which, while the flowers are suppressed, the small bracts at the base become multiplied excessively. Mr. Veitch observed that it is very common, and difficult to eradicate. No cause could be suggested for its occurrence.

Canna, Madame Crozy.—Dr. Masters observed that it has been stated that this variety of *Canna* was really a very old form, having been figured in Loddige's *Cabinet*, No. 449; but, as he pointed out, though the colours were similar, the petals having a yellow rim, the size was very different, the modern form very probably having originated from that older variety.

Germinating Cocoon.—Dr. Masters showed a drawing of the globular cotyledon developed within the cavity and applied against the edible endosperm. With reference to its power of secreting a ferment to digest the food, Professor Green remarked that he had not succeeded in isolating the ferment; but the epidermis of the cotyledon was quite of the character suggesting the presence of one. He noticed a fatty acid present, apparently indicating reactions produced by some ferment.

GREAT YARMOUTH CHRYSANTHEMUM.

NOVEMBER 14.—This Society held its sixth annual exhibition on the above date, and quite maintained its character as a pleasant and effective one, the spacious Town Hall in which it was held being well filled.

The Plants.—These were placed on the floor round the Hall, and the best six of Japanese varieties coming from Mr. W. Page, gr. to H. J. Foulgham, Esq., Yarmouth; Mr. W. Turner, gr. to Dr. T. Browne, Yarmouth, was 2nd; they were good, freely-

grown specimens, carrying nice heads of bloom as a rule. Mr. E. Daniels, gr. to S. V. Spelman, Esq., Yarmouth, was 1st with three good specimens. Pyramid-trained and standard-trained plants were also highly creditable to these cultivators, and the same can be said of the specimens of incurved, in all cases freely grown; the reflexed and the Pompon varieties were also good. The best single specimen was an excellent plant of *La Triomphante*, from Mr. J. Eastwood, gr. to James Sutton, Esq., Yarmouth; and a capital plant of *Chevalier Damage* was also staged in this class.

Blooms were the leading feature, and especially the Japanese varieties. In the class for thirty-six varieties, in addition to the money-prize, a Silver Cup was given by the Corporation of Yarmouth, and this was won by Mr. W. Allan, gr. to Lord Suffield, Gunton Park, Norwich, with a very fine stand, his leading blooms being John Dyer, Mrs. C. H. Payne, Stanstead White, Boule d'Or, Violet Rose, Stanstead Surprise, W. W. Coles, F. Davis, Coronet, Vivian Morel, Mrs. F. Jamieson, &c. Several other stands were staged, and the 2nd prize collection contained such fine novelties as Silver King, Lord Brooke, Charles Davis, Miss Anna Hartshorn, G. W. Childs, Wm. Seward, John Shrimpton, and Hick's Annette.

Twelve, three, and six blooms, were also well shown, and the whole of the classes covered a good space of tabling.

Incurved blooms were somewhat weak, but that is a general characteristic of the season. Mr. W. Turner was the only exhibitor of twenty-four distinct varieties, having blooms in good form.

Twelve, six, and three blooms, were also shown. Very fair blooms of reflexed were staged by several exhibitors, the 1st prize going to Mr. W. Turner.

A class for twelve bunches of Pompons, six of them *Anemone*-flowered, brought some charming stands, and they and the class for six bunches of single were much admired, the fine and striking Japanese varieties being staged in the single class, and attracted considerable attention; Mr. W. Turner took the 1st prizes in both classes.

There were also classes for *epergues* of Chrysanthemums and other flowers, bouquets, &c., all being well filled.

Groups of decorative plants filled the orchestra; the best came from Mr. H. Newman, florist, Gorleston. Other plant-classes comprised Orchids, Chinese Primroses, zonal Pelargoniums, table-plants, Cyclamens, &c., all being creditably shown.

A large and imposing group of plants, not for competition, staged by Messrs. Isaac Branning & Co., nurserymen, Yarmouth, nearly filled one end of the Hall.

The Bronze Medals of the National Chrysanthemum Society were awarded to Mr. Allan for his fine stand of Japanese, to Mr. W. Page for his six specimen plants in Class 1, and the Certificates of the Society to Mr. Turner for his fine stand of Japanese singles, and to Mr. J. Eastwood for his single specimen.

Fruit.—In the way of fruit, some excellent black Grapes were shown by Mr. Allan and Mr. Musk, gr. to Lord de Ramsey, Haverland Hall, the former having Gros Maroc, the latter Alicante. Mr. Musk had the best three bunches of white, staging excellent Muscats; Mr. R. H. Clarke, Yarmouth, was 2nd. Mr. Allan was particularly fortunate in the other fruit classes, taking the 1st prizes for three dishes of desert Pears, the same for dessert Apples, and of culinary Apples. There were also classes for single dishes of Apples and Pears, the competition being good in all cases.

ULSTER HORTICULTURAL.

NOVEMBER 14, 15.—The grand annual Chrysanthemum, fruit, flower and vegetable exhibition of the Ulster Horticultural Society, held on the above dates in St. George's Market Hall, Belfast, was opened with great enthusiasm. The opening ceremony being of a brilliant character, many of the local nobility and gentry being present, and the Hon. Lady O'Neil performed the ceremony of opening the exhibition. There was an excellent display of flowers (Chrysanthemums predominating), fruits, and vegetables was made in the spacious building, the plants being dispersed through the hall, giving it the appearance of a huge conservatory. On entering the hall attention was arrested by a group of Chrysanthemum plants, which seem to indicate what might be expected throughout the show; we do not remember observing a finer group, the flowers being large, the plants dwarf, and the foliage healthy. This group obtained the 1st prize in that class, the exhibitor being W. Robertson, Esq. In the matter of

awards, the employer's name was prominently brought to the front, and the gardener's suppressed on the show-cards, which appears to us to be wrong, the award being for culture, not for possession. There were two other large groups in competition in this class, and both of much excellence, and to these 2nd and 3rd prizes were awarded to Mr. Walkington and Robert Tennant, Esq., respectively. In other fine groups, the prizes were awarded to Messrs. Walkington, Milligen, and Lord Deremore, in the order placed.

The classes for twelve, eight, and four specimens were well represented, the same exhibitors mostly appearing as prize-takers. Dividing off these brilliant circles of plants were groups of foliage and other plants, conspicuous amongst these being the large Palms, Cycads, and Ferns, from Mr. H. Dickson, interspersed with Chrysanthemums, Ericas, and other flowering plants, with a pretty band of plants of *Echeveria secunda glauca*, set in moss running round the group. Some Palms placed singly between the groups had a good effect, and were a bold kind of relief to those on the other side of the hall. The arrangements of plants were equally pleasing, but distinct in themselves. At one end a large space was devoted to some rockwork, which was executed in good taste. Mr. McKimm, Curator of the Botanic Garden, Belfast, had this work left to himself, and wisely too, as that gentleman seems far ahead of ordinary practitioners in this kind of work.

The plants on the rockery were chiefly Palms, Ferns, Dracenas, drooping shrubs and creepers. Close to this was another group of Mr. Dickson's hardy shrubs, chiefly Conifers of small growth, berry-bearing plants, and those with variegated foliage; a line of *Retinospora plumosa aurea* formed a bright yellow edging, and the whole was finished with a band of turf. This was a lesson which might afford hints to others who may wish to make decorative groups of hardy shrubs. W. C. Mitchell, Esq., Marmount, and R. Tennant, Esq., Rushpark, contributed fine groups of foliage plants intermixed with Chrysanthemums. A splendid exhibit from J. T. Walkington, Esq., was close to the end of the line of exhibits of plants in pots, which created much comment, and deservedly had 1st prize; it consisted of twelve Chrysanthemums in 6-inch pots, and it was not easy to conceive how such small pots could support such a number of stems, foliage healthy and green to the surface of the pots, and large flowers. Tables of cut flowers were extensive, and the lines of dwarf plants which backed the exhibits removed all formality, and enhanced the beauty of the flowers.

Cut Blooms.—In the class for forty-eight cut blooms, J. H. Torrens, Esq., was 1st, with fine flowers, among which E. Molyneux, Madame J. Laing, Vivian Morel, Etoile de Lyon, and Avalanche were conspicuous for fine form. In most cases, incurved varieties were more remarkable for fine form than extra size of flowers, but there were many fine exhibits of them. J. Watson, Esq., had larger flowers in his exhibit, which was placed 2nd, but they were not equal in form to the 1st prize lot.

In the class for thirty-six blooms, H. Torrens, Esq., Edengrove, was in fine form, and he secured the 1st place. His finest were Wm. Tricker, Avalanche, Vivian Morel, Edwin Molyneux, and Sunflower; Mr. Tennant was a good 2nd.

For twenty-four blooms, 1st, Jno. Rogers, Esq., his Sunflower, Vivian Morel, Colonel B. Smith, P. J. Kingston, Blond Beauty, Jeanne d'Arc, and Robert Cannell, were of extra merit. Thos. Gallaher, Esq., Ballagoland, and Mrs. Walkington, showed well in this class, and were placed 2nd and 3rd respectively.

For twelve incurved blooms, J. H. Torrens, Esq., was placed 1st, his Violet Tomlin, Mr. Bunn, John Salter, and Jeanne d'Arc, very fine. For twelve Japanese, Mr. Torrens 1st prize lot contained flowers of Mr. H. Lincoln, Boule d'Or, of extra merit. This gentleman showed well in most of the other classes. In the class for Japanese and incurved excluded, he had Delaware, Thorp, jun., Mrs. Judge Benedict, Margaret de Villagoise, very perfect in form and of good size.

The classes for trusses were not of special merit, but the effect of such being less formal, enlivened the tables. Bouquets of Chrysanthemums and other flowers were numerous, and all fairly good.

Fruit, especially Apples, was excellent, and the large exhibits, contested so keenly, showed that there were enthusiastic cultivators of fruit in the Green Isle.

The Grapes were not an extensive exhibition, and mostly represented by Gros Colmar, Lady Downes, and Alicante, the latter beautifully coloured; and the best of the prizes in the exhibits were awarded

to Lord Downshire and Lord O'Neil. The collection of fruits (ten dishes) were keenly contested; Lord Downshire's exhibit, however, was far ahead of the others. An immense bunch of Gros Guillaume Grapes, perfect in colour; another of Gros Colmar, with large Apples of brilliant colour, and Beurré Gage Pears, were conspicuous for excellence.

The contest for the best twenty-four dishes of Apples was keen, the 1st prize going to Rev. H. Pakenham, for a very excellent high-coloured lot of fruit; a very close 2nd was H. Nicolson, Esq.; and 3rd to Baroness Von Stieglitz. The twelve dishes had many keen competitors, so had all the smaller exhibits. An attractive exhibit was placed by Mr. John Moore in the class for cottagers and farmers. The Pear classes represented in many cases large fruit, but not otherwise of special merit.

Vegetables were good, especially Leeks, Cauliflowers, and Celery, the latter rather under-blanced. We measured some of the Leeks, which were over 9 inches in girth. The 1st prize collection belonged to Lord Downshire, in which were fine French Beans, Seakale (not good), Asparagus, new Potatoes, White Plume Celery, and Tomatoes.

There were numerous exhibits of utensils, insecticides, manures, &c. Messrs. Cross had a wonderful collection of immense Pears, said to be the result of the use of their manures. *M. Temple, Carron, N.B.*

CARDIFF CHRYSANTHEMUM.

NOVEMBER 14, 15.—The seventh annual exhibition of this society took place on the above dates in the Park Hall, Cardiff. The number of exhibits this year was somewhat less than on former occasions, possibly owing to the early season, but the quality, especially of the Chrysanthemums, was highly satisfactory. As usual, the competition was keenest in the cut-bloom section, there being a number of exhibitors from various parts of England and Wales, whereas in the groups the competition was purely local. With one or two exceptions, the specimen plants shown were poor, as, unfortunately, is frequently the case at the Chrysanthemum shows of recent years.

The finest group of Chrysanthemums arranged for effect in an area of 60 square feet was shown by Mr. G. W. Drake, Cathays Nurseries, Cardiff, for which he obtained a 1st prize and the National Chrysanthemum Society's Certificate of Merit for the highest cultural skill displayed in the show. The striking feature of this group, which contained all the newest and best varieties grown, was the dwarfness of the plants composing it, no plant being much over 3 feet in height. Mr. W. Treseder, Cardiff, came next with a fine group, little inferior in quality of bloom, but the plants were much taller.

In the amateur division Dr. Wallace, Cardiff, took the 1st prize for a group covering a space of 50 square feet; and Mr. Magga, Cardiff, was as successful with a group occupying 30 square feet.

W. Stuckey, Esq., Langport, Somerset, was placed 1st for a collection of forty-eight cut blooms, half incurved and half Japanese, not less than thirty-six named varieties; Charles Davis, Etoile de Lyon, Robert Owen, and Louis Bohmer were prominent in this collection. R. W. D. Harley, Esq., Brampton Bryan, Herefordshire, was placed 2nd in this class, and was awarded the National Chrysanthemum Society's Certificate of Merit for a bloom of Vivian Morel contained in his collection, and judged the best bloom in the show.

For a stand of twenty-four blooms of Japanese and incurved Chrysanthemums, R. A. Bowring, Esq., of Penarth, obtained 1st place, some of his best blooms being Princess of Wales, Mrs. S. Coleman, and John Doughty.

R. W. D. Harley, Esq., carried off the Challenge Cup and 1st prize for a collection of twenty-four cut blooms, distinct varieties. This Cup, which becomes the property of the person winning it twice, was offered last year for the first time, and was then won by Sir C. Phillips. Owing to a fatal driving accident befalling his daughter recently, Sir Charles Phillips has not exhibited at all this year.

E. P. Martin, Esq., Dowlais, was successful in carrying off 1st prizes for a collection of six Japanese blooms and a single Japanese bloom, in both instances the variety was Vivian Morel.

For twelve blooms, Japanese, not fewer than six varieties, R. A. Bowring, Esq., took 1st place, two of the finest blooms being Duke of York and Princess May.

A collection of twelve incurved blooms, six varieties, shown by Mr. S. Horton, Cardiff, was placed 1st, Barbara, Mrs. Clibran, and Empress of India being some of the best blooms.

The fruit exhibited, with the exception of Apples, was not generally of a high quality, the judges in several instances withholding 1st prizes and only awarding 2nds. The principal prize-takers in this section were Col. Page, Sir E. S. Hill, General Lee, Evan Lewis, Esq., and Marcus Gunn, Esq., all local gentlemen.

PLYMOUTH CHRYSANTHEMUM SHOW.

NOVEMBER 14, 15.—The second show of the West of England Chrysanthemum Society was held at the Plymouth Guildhall on the above dates, and was in every respect a very fine affair; and in some respects it was superior to that held at the Royal Aquarium and Kingston-on-Thames. The competition in the champion class lay between two exhibitors from the same locality (Fareham), and their stands of forty-eight blooms were triumphs of cultural skill. Mr. Molyneux was adjudged the winner of the highest prize, Messrs. Drover taking the 2nd place; the first-mentioned had the finest Japanese, but he could not approach Messrs. Drover's incurves.

The local exhibitors in this class made a creditable show. Mr. Hammond-Spencer, Admiral Parker, and Sir J. Jenkins were amongst the most successful. The groups of plants in pots were arranged round the hall with good effect. Dr. Square was a very successful exhibitor with some good and modern varieties; and Messrs. Serpell, Norrington, and T. F. Upsher were also well to the front. Mr. Upsher's three incurved plants were remarkably good. The Cyclamen and Primulas were an interesting but by no means extraordinary exhibition, but the Orchids, though not so numerous, were good. Mr. E. Coppin, was here 1st, with Mr. Dyke a good 2nd. The banks of plants and flowers are arranged in the centre of the building most admirably. They reflect the greatest credit upon the exhibitors, particularly Messrs. Groombridge, Tot-hill Nurseries, and C. Watts, of the Globe Hotel, Plymouth. Mr. Watts was most successful with his display of vegetables, taking two 1st prizes with collections which have rarely been equalled in Plymouth.

The fruit was as unusually good as the recent favourable season would have led one to expect. Apples were the feature, and of these some extraordinary and beautiful specimens were shown. Among others who had displays, also not for competition, was Mr. Phillips, of Buckland Abbey, whose show of Chrysanthemums was both large and beautiful. Mr. Phillips was awarded the Certificate of the National Chrysanthemum Society. Mr. Smale, of Torquay, showed a fine display of cut blooms of the newest variety, and Mr. Godfrey, of Exmouth, with his Belle of Exmouth as his strong point, was also well to the front.

The fruit displays of Messrs. Veitch and Mr. Sclater, of Exeter, well deserved the honour conferred upon them in the award of the Certificate of the West of England Society, which was also given to Mr. Charles Watts for his collection of vegetables, to Mr. John Arnold, of Stoke, and to Messrs. Jarman, of Chard. Those whose energetic labours ensured the success of the show are:—President, Mr. G. Soltan-Symons, Chaddlewood, Plympton; vice-presidents, Mr. G. H. E. Rundle, Captain Castle, R.N., Mr. R. Burnard; the members of the committee, and secretaries Messrs. Charles Wilson and W. Damerell. The show was opened by the Mayor of Plymouth.

MANCHESTER.

NOVEMBER 14, 15.—The annual Chrysanthemum show, held under the auspices of the Manchester Botanical and Horticultural Society, took place in the Town Hall on the above dates. The exhibition in general was better in quality than many of its predecessors, and the display, upon entering the room, was equal to anything seen in Manchester before. The classes were not numerous, but they were well contested, and the entries were fairly numerous. Miscellaneous exhibits were present in exceptional quantity, and the quality of these, together with their arrangement, had a very great share in producing the show obtained. These included an unusual quantity of Orchids from Messrs. Charlesworth, Shuttleworth & Co., Bradford; Messrs. Heath & Son, Cheltenham; and W. K. Lee, Esq., of Audenshaw; Cyclamens from Messrs. Dickson, Brown & Tait, and Messrs. Dickson and Robinson; and a great many other contributions from various amateurs and nurserymen.

YORK CHRYSANTHEMUM SHOW.

NOVEMBER 15.—The exhibition of Chrysanthemums and other flowers and plants, as well as fruit and vegetables, which is annually held under the auspices of the Ancient Society of York Florists, was opened on the above date in the buildings of the Fine Art Institution. The Society this year offered about £200 in prizes, including handsome Challenge Cups presented by the ex-Lord Mayor (Mr. Alderman J. Close) and "the citizens." Numerous special prizes were offered by the nursery trade and residents in the neighbourhood.

The groups of Chrysanthemums formed a magnificent show, and this was especially the case in class 1, which consisted of groups occupying a space of 120 square feet. The 1st prize was a Silver Cup, given by Mr. Alderman Close, ex-Lord Mayor, which he won himself last year. There were five groups exhibited, and Mr. Alderman Close secured premier honours, with a splendid lot of plants, the blooms being especially well grown. Quality was, however, best represented in the group exhibited by Dr. Pierce, but the arrangement was deficient; and Mr. Hington was placed 2nd. The same standard of excellence was conspicuous in the smaller groups, in which Mrs. Gutch showed a group which, for size and perfection of blooms, variety in colour, and all-round excellence, stood well to the front. The exhibition of groups open to amateurs not employing a gardener was one of the most encouraging sections of the show. There were fair groups shown, and for merit of culture and perfection of bloom they would run the larger groups a close race. In the other classes there was a very excellent show of incurves, Japanese reflexed, Anemone-flowered, and Pompon Chrysanthemums. The reputation of the show, as regards the classes devoted to cut flowers, was more than maintained.

The feature was, of course, the open class for the best collection of thirty-six blooms—eighteen incurved, and eighteen Japanese—the 1st prize for which went to the South of England. It must be conceded that the collection staged by Dr. Frankland, of Reigate, thoroughly deserved the Citizen's Challenge Prize, the incurved varieties, including a very fine Jeanne d'Arc, Mrs. Robinson King, and others, being by virtue of their excellence a preponderating influence in favour of the winner.

Mr. W. H. Tate, of Woolton, Liverpool, the 2nd prize-taker, had a fine collection, Sir James Walker, Bart., Sand Hutton Hall, and the Earl of Harrington, following in order of merit. In the next class, for twenty-four blooms, twelve incurved, and twelve Japanese, Mr. A. Milnthorpe, of Cattal, secured premier honours, and the remaining classes for professional exhibits brought out a first-class assortment of the Japanese, incurved, reflexed, and Anemone-flowered varieties. Bouquets and baskets were well shown, but there were only two epergues.

A magnificent exhibit of eighteen cut blooms, shown by Mr. W. B. Richardson, of Elm Bank, secured the Citizens' Challenge Prize, in the class open to gentlemen's gardeners or amateurs residing within 5 miles of the city. Of the six incurved, Miss Violet Tomlin was noticeable; and the dozen of Japanese included a very fine Stanstead White and Avalanche, Florence Davies, Vivian Morel, and others; Miss Gutch was a good 2nd, and the collection shown included a grand Louis Behmer, Japonaise, &c. The amateur classes for six incurved, Japanese, and Anemone-flowered, were well filled.

The show of Grapes, as far as quality was concerned, was quite on a par with former exhibitions, but there appeared several blanks on the staging which would have been better filled in.

In the class for two bunches of black Grapes, the competition was also very keen, the bunches being wonderfully well coloured, and heavily bloomed; but in the class for two bunches of white Grapes the exhibits were not so good, but of fair average quality. The show of Apples it would be impossible to surpass.

Messrs. James Backhouse & Son, of the York Nurseries, had a magnificent lot shown, not for competition.

The *Gardeners' Magazine* Medal was awarded to Mr. W. Dickenson, Acomb, for four incurved Chrysanthemums in pots, of cultural excellence.

LINCOLN CHRYSANTHEMUM.

NOVEMBER 15, 16.—The cultivators of Lincoln and the neighbourhood held an exhibition of Chrysanthemums, cut blooms, and plants, and miscellaneous objects on the above dates. The strongest feature of the display consisted of groups of mixed plants,

arranged with an idea of a pleasing effect, the best being that of Mr. C. Foster, gr. to R. Dawber, Lincoln; and one of Chrysanthemums, arranged by Mr. Wipf, gr. to N. C. Cockburn, Esq., Hartsholme. The last-named had also the finest specimen.

Mr. Thornton, gr. to C. E. Marfat, Esq., Lincoln, had the finest twenty-four Japanese and twenty-four incurves; and Mr. Wipf the next best, as he also staged the finest Anemone and reflexed blooms.

Specimens of single-flowered varieties were the best from Mr. Bugg.

HULL AND EAST RIDING CHRYSANTHEMUM.

NOVEMBER 15, 16.—This exhibition, one of the best held out of London, took place in the Artillery Barracks, Park Street, and proved, as usual, a success in every way. On entering the building, a spacious hall is reached, on either side of which were ranged the groups of Chrysanthemums, relieved by foliage plants arranged for effect, and in the centre were two fine groups of miscellaneous plants, also arranged with an eye to good effect. On the right hand a saloon was filled with the cut blooms; the incurved and Japanese amongst these were very fine, as well as numerously shown. On the left, another room with darkened windows, and lighted by gas, contained the table decorations and other floral effects, while at the end a spacious hall contained numerous specimen plants.

The best group of Chrysanthemums and other plants was shown by Mr. Coates, gr. to W. Wheatley, Esq., Hull; the 2nd prize going to Mr. Geo. Cottram, jun., nurseryman, Cottingham, Hull. The best group of miscellaneous plants came from Mr. Wilson, gr. to James Rickett, Esq., Swanland Manor, and was probably one of the most effective ever staged at Hull; Mr. G. Cottram was again 2nd.

Groups.—The best group of plants, Chrysanthemums and foliage plants combined, was staged by Mr. Geo. Coates, gr. to W. Wheatley, Esq., Milton Terrace, Anlaby Road; it was a tasteful arrangement, consisting of flowering plants, Eulalias, Crotons, and good Dracanas, and an edging of Hydrangea hortensis with variegated leaves, and a few light Palms. The 1st prize in this class was a Silver Challenge Cup of the value of 20 guineas. Mr. Gledhill Cottam, jun., Alma Gardens, Cottingham, was a good 2nd, with a group lightly arranged.

Mr. G. Wilson, gr. to Jas. Rickitt, Esq., was an excellent 1st for a mixed group of flowers and foliage, one of the best seen at Hull; it consisted of high-coloured Crotons, Eulalia japonica, Palms, and some good Orchids—the shape an oblong.

A well-arranged group of foliage plants and Chrysanthemums was shown by the Corporation of Hull, but not for competition.

Plants.—Trained specimens and bushes were shown in large numbers and in first-rate condition, one conspicuous feature being the exhibits of the amateurs, several classes of these having as many as seven and eight entries. In the open classes, Mr. J. Hemming, gr. to Ed. Seetham, Esq., Beechholme, Newland, was 1st, with dwarf-trained plants, bearing very fine blooms, the Rundle family comprising the trio; the 2nd best were those of Mr. Geo. Coates, all Mrs. Rundle, very fresh. Mr. Hemming was also 1st for pyramids, freely grown, and not too formally trained. Mr. Hemming had the same position with three grand standards, each plant a perfect model, bearing fine flowers, and very fresh; these were also of the Rundle family.

For six bushes, Mr. W. Goodhill, Stanley Street, Hull, was 1st, with beautiful plants of the Japanese varieties Val d'Andorre and Vivian Morel, both extra fine. Mr. Goodhill was also 1st for three plants (bushes) equally as good.

For six plants (cut-backs), Mr. H. Taylor, Newland, was an admirable 1st, the plants bearing grand flowers, the best varieties, Vivian Morel, Sunflower, and Florence Davis.

In the amateur's classes (for single-handed gardeners), the best bush-grown plants were excellent examples, shown by Mr. F. Pape, Beverley; Mr. Geo. Coates being a good 2nd. The best trained plants in this division were those shown by Mr. Robert Thirsk, Grove Hill, Beverley, all Rundles.

In the exclusive amateur classes the best were the six bushes, freely-flowered, from Mr. F. Pape, chiefly old kinds; Mr. R. Petch, Prospect Street, Hull, being 2nd, having one fine plant of Sunflower. The best cut-backs were shown by Mr. A. W. Stanley, dwarf and good. For three bush-grown plants, Mr. R. Thirsk, Beverley, was 1st, Val d'Andorre being extra fine. The finest named plants

were shown by Mr. W. H. Clark, Somerscales Street, Hull.

One of the leading classes for cut blooms was that for twenty-four incurved varieties, in not less than eighteen varieties, and here Mr. W. H. Lees, gr. to F. A. Bevan, Esq., Trent Park, Barnet, a young grower, who has this season leaped into a very prominent position by showing blooms of surpassing excellence; his collection of incurved was the finest seen this season, and included large and symmetrical examples of Golden Empress, Lord Alcester, Hero of Stoke Newington (very fine), Princess of Wales, Princess Teck, Violet Tomlin, Mrs. Coleman, Lady Dorothy, Miss M. A. Haggas, Lord Wolseley, Prince Alfred, Nil Desperandum, Jeanne d'Arc, R. Cannell, John Lambert, John Salter, J. Doughty, &c. 2nd, Mr. H. Shoesmith, gr. to M. Hodgson, Esq., Shirley, Croydon, his leading flowers being Miss M. A. Haggas, Lady Dorothy, Princess of Wales, Madame Darrier, Prince Alfred, J. Doughty, Alfred Salter, and Golden Empress.

With twelve incurved, the 1st prize was taken by Mr. Musk, gr. to Lord de Ramsay, Haviland Hall, Norwich, having capital blooms of well-known varieties; 2nd, Mr. Leadbetter, gr. to A. Wilson Esq., Tranby Croft, Hull, with good blooms.

An interesting class was for twelve blooms of the Rundle family, two bunches of three blooms of each of the three varieties, well-finished flowers being staged on long stems. The 1st prize was taken by Mr. W. Goodhill, Stanley Street, Hull. The best six blooms of incurved of one variety were shown by Mr. P. Blair, The Gardens, Trentham Park, he having Annie Salter in very fine condition; Mr. Musk being 2nd with Madame Darrier, in capital character. Messrs. E. P. Dixon & Sons, nurserymen, Hull, offered a Silver Cup for twelve incurved, which was won by the gardener to Sir H. Bennett, Westlands, Grimsby. In the succeeding class, for twelve incurved, Mr. Davidson, gr. to R. F. Jameson, Esq., Hessele, was 1st, the leading varieties shown being those already named. There were several other classes for incurved blooms, mainly by amateurs, and in all cases the blooms were of a decidedly creditable character.

Japanese blooms were numerous and very fine. The best twenty-four came from Mr. H. Shoesmith, who had superb examples of Vivian Morel, Mdle. M. Hoste, Edwin Molyneux, Mrs. Ed. Adams, Mrs. C. Harman Payne, Madame Calvat, Chas. Shrimpton, Etoile de Lyon, W. W. Coles, Golden Wedding, Ruth Cleveland, Col. W. B. Smith, Mrs. Wheeler, G. C. Schwabe, Mrs. Clarke, M. Bernard, Mdle. Thérèse Rey, John Shrimpton, Lord Brooke, W. H. Atkinson, W. H. Lincoln, W. Seward, &c.; 2nd, Mr. Heany, gr. to H. G. Schwintz, Esq., Mosley House, Liverpool, his leading blooms, which were very fine, being Charles Davis (superb), Mrs. E. W. Clarke, Princess May, Mrs. C. H. Payne, G. C. Schwabe, Boule d'Or, Silver King, Violet Rose, Mr. E. D. Adams, Colonel W. B. Smith, Excelsior, Lord Brooke, &c.

There were several collections of twelve blooms, Mr. Lees being again 1st, with excellent examples of Etoile de Lyon, Edwin Molyneux, &c.; 2nd, Mr. Musk.

Another interesting class was one for twelve Japanese, large show blooms, set up with or without Chrysanthemum or other foliage, the object being to teach a lesson as to the use of specimen flowers for decorative purposes. Mr. Musk was 1st, with fine blooms, tastefully arranged with foliage and small decorative plants; Mr. Geo. Wilson, gr. to J. Beckett, Esq., Swanland Manor, Hull, was 2nd.

Mr. Shoesmith was 1st, with six blooms of Japanese, any one variety, having Colonel W. B. Smith, very fine; Mr. Leadbetter taking 2nd prize, with Madame Baco. In other classes, Japanese varieties were numerous and, on the whole, finely shown.

The Anemone-flowered, from their peculiar formation, attracted much attention, and some very fine blooms were staged, both large-flowered and Japanese. Mr. A. Smith, Woodleigh, Hessele, took the 1st prize, with twelve of the former, and also with twelve Japanese. The reflexed varieties scarcely shaped so well, but they were bright and effective, Mr. Davidson winning the 1st prize for the chairman of the committee.

A class for blooms of "hairy" Chrysanthemums brought such sorts as L. Bohmer, White Plume, W. A. Manda, H. Ballantine, &c., Mr. G. E. Smith, Floral Cottage, Pavell, taking the 1st prize.

It may be added, that in all the minor classes, and they were many, the competition was brisk. The premier incurved Chrysanthemum was a very fine Lord Alcester, shown by Mr. Lees. The premier Japanese was a superb flower of Charles Davis, shown

by Mr. Musk. In the amateur's division, the premier incurved was Jeanne d'Arc; and the Japanese, Stanstead White.

Table Decoration, Bouquets, &c.—For a fully-laid table for six persons, Mrs. Douglas Joy was a good 1st, the arrangement free, light, and finished, bronze-coloured flowers, dark foliage of Mahonias and Asparagus plumosus, the chief features. The best bouquet of Chrysanthemums was shown by Mrs. H. Taylor, Newland, a beautiful shown arrangement of Sunflower (Japanese), and Smilax. For a table illustrating the decorative value of the Chrysanthemum, the 1st prize was awarded to Mr. H. Taylor, Newland, with an excellent exhibit of well-arranged floral articles.

AYLESBURY CHRYSANTHEMUM.

NOVEMBER 15, 16.—A very fine show was made in the Corn Exchange on the above days, the plants throughout being good, and the cut flowers in many cases of such even quality as to give the judges some trouble in awarding the prizes. The event of the day was the competition for the Silver Cup, value 10 guineas, given in addition to the 1st prize, for a group of Chrysanthemums, and this was secured by Mrs. Bartlett, Peverel Court, Aylesbury (gr., Mr. Turnham), with finely-grown and well-bloomed plants, well set up. Mr. R. Hopkins was 1st for nine large-flowered Chrysanthemums; Col. Lee 2nd. Miss Smith-Dorrien (gr., Mr. Tipler) was 1st for six, with a grand lot, the Vivian Morel in which also receiving the award for the best plant in the show. For six Pompons, Col. Lee was 1st. In the class for Anemone-flowered or Japanese, Miss Smith-Dorrien was 1st for six, and Mr. T. Gurney for three plants.

For forty-eight cut blooms, Mrs. Bartlett was 1st; Lady Rothschild securing 1st in both the classes for thirty-six and twenty-four blooms. Mr. Giles, Mr. Mackrill, Mr. Pigott, and others, also showed well.

In the prizes for fruit, Mr. Robins, gr. to Col. Lee, secured the 1st for three dishes.

A most important adjunct to the flower show was a cottagers' show, held beside it in the Meat Market, a most extraordinary, excellent, and varied lot of exhibits being staged by a large number of cottagers, the vast building being quite filled by the 521 entries. The whole show was a great success, and much of it, as in former years, must be attributed to the untiring zeal of Mr. W. Crasler, the Secretary.

BIRMINGHAM CHRYSANTHEMUM.

NOVEMBER 15, 16.—The thirty-third exhibition took place on the above dates, and was in every way a marked success. Good quality ruled strongly throughout. The specimen plants were, as is usual at Birmingham, exceedingly well grown, and more natural methods in training are now adopted. Mr. W. H. Dyer, gr. to Mrs. Marigold, Edgbaston, was 1st for nine large-flowering incurved varieties, for six large-flowering, for three Japanese, and for twenty-four single specimens in two classes. Mr. J. Maldrum, gr. to G. Cadbury, Esq., Selly Oak, was 2nd in all these classes.

Seven very fine large groups were exhibited in the open class, and Mr. Earp, gr. to the Right Hon. Joseph Chamberlain, M.P., was 1st, with a superb group, carrying large blooms of fine quality, and also well arranged. Mr. Dyer was a good 2nd, and five other prizes were awarded. In the class for smaller groups, there were seven exhibits, Mr. Maldrum taking the 1st prize, four other prizes being awarded.

Cut Blooms.—There was a very extensive display of cut blooms, and the competition heavy and keen in every class. In the class for twenty-four incurved, there were twelve exhibits, 1st, Mr. Neve, Radlett, Herts, with a fine lot; 2nd, Mr. A. Haggart, gr. to J. J. Foster, Esq., Moor Park, Ludlow.

A superb lot of Japanese blooms was staged, nineteen exhibits, and Mr. R. Parker, Impney Gardens, Droitwich, was well 1st, with a grand lot of blooms; 2nd, Mr. Haggart; 3rd, Mr. Earp, Highbury.

In the classes for eighteen incurved, eighteen Japanese, twelve incurved, twelve Japanese, and twelve Anemone-flowered, there was excellent competition, Mr. Walter Showell, Mr. Haggart, and Mr. Crook taking the 1st prizes in these classes in the order named.

The classes for the local growers within 4 miles of the Post Office were also well contested, Mr. Earp scoring 1st for six incurved and six Japanese in one

class; and for twelve incurved and twelve Japanese in another class, Mr. Maldrum coming 2nd in both classes.

There was a very extensive display of Chinese Primulas, as is usual at Birmingham, and many of these were more than usually fine. In the open classes, where the nurserymen exhibit, Mr. F. Denning, florist, was 1st respectively for twelve singles, six singles, and six doubles; Messrs. Thomson & Co. 2nd, in each class; and Messrs. Pope & Sons 3rd in each.

For six Fern-leaved varieties, Messrs. Pope & Sons were 1st; and Messrs. Thomson & Co. 2nd. Some admirable specimens of Cyclamen were staged, especially a twelve and a six, from the Right Hon. J. Chamberlain, which were awarded the 1st prizes.

In the gentlemen's gardeners' classes for Primulas, there was keen competition and numerous exhibits. For twelve plants, Mr. F. Jenkins, Olton, won easily with twelve fine specimens; Mr. Caldecott, gr. to Mr. Wm. Mathews, an old successful grower, securing 2nd. Mr. Palmer, gr. to William Bown, Esq., had a fine collection of Orchids, a strong exhibitor, who on this occasion had the field to himself, with excellent plants. His six plants consisted of *Cypripedium Leeanum*, an excellent variety; a fine specimen of *C. speciosum*, a fine one of *Dendrobium Phalaenopsis Schillerianum*, *Oncidium crispum*, *Cattleya labiata*, and a fine *C. gigas*. In a group, not for competition, were good examples of *Odontoglossum Inseayi* var. *splendens*, O. Andersoni, a very fine variety; a good variety of *Cattleya labiata*, and a monster specimen of *Lælia Perrini*, with nearly 50 fine blooms on it, and supposed to be one of the finest plants in the country. A special Cultural Certificate was awarded to it.

Fruit.—In this division Grapes were a great feature, over 100 bunches being staged, and many of these of excellent quality. For six bunches, not less than three varieties, 1st, Mr. Goodacre, gr., Elvaston, with Gros Maroc, Gros Colmar, and Muscats; 2nd, Mr. Bannerman, gr. to Lord Bagot.

For three bunches of Black Grapes, there were eight exhibits; 1st, Mr. John Bates, gr. to T. J. Harris, Esq., Stone, with three bunches of Gros Colmar, weighing 14 lb., and well-finished off and fine; 2nd, Mr. S. Bremmell, with very large bunches of Alicante, with smaller berries.

For three bunches of white Muscats: 1st, Right Hon. J. Chamberlain, M.P., with excellent bunches; 2nd, Mr. Goodacre. The other classes for Grapes were also well filled.

Apples and Pears, always well represented here, on this occasion were very numerous, and good in size and colour. For six dishes of culinary Apples, Mr. Goodacre was 1st, with a very fine lot; 2nd, Mr. W. Fisher, Bath.

For six dishes of dessert Apples—1st, Mr. Bannister, Westbury-on-Trym; 2nd, Mr. Goodacre.

For eight dishes of Pears, Mr. Austin was well 1st with a grand lot; enormous Beurré Diel, Glou Morceau, Zephyrine Gregoire, Durondeau, Bergamot d'Espere, Marie Louise, Easter Beurré, and Beurré Rance; 2nd, Mr. Bannister, with a fine lot.

Miscellaneous.—For Messrs. Thomson & Co.'s and Messrs. Pope & Sons special prizes for Primulas, some very fine plants were staged, and Mr. Jenkins carried off the 1st prizes in both cases with superb plants. Special prizes were offered for collections of vegetables by Messrs. Webb & Son, and there were a good number of exhibits. Messrs. Thomson & Co.'s special prizes for a collection of vegetables brought out sixteen exhibits, and they were generally fine. Mr. Robert Sydenham offered forty-eight prizes in different classes, and about 100 exhibits, the Leeks being especially noticeable, and the St. Valery Intermediate Carrots were very fine, clean, and well-shaped.

The Honorary Exhibits were of excellent quality generally, and Messrs. Perkins & Sons, Coventry, set up one of their pretty exhibits of decorative floral work. Messrs. Cutbush & Son, Highgate Nurseries, had a good display of Apples and Pears; Mr. Hy. Berwick, Sidmouth, Devon, a fine display of Apples and Pears; Mr. R. Owen, Maidenhead, several new Chrysanthemums.

Messrs. Hewett & Co. had some pretty shower bouquets, Mrs. Hodgkins of Manchester one of her pretty displays of botanical anatomy; and a Certificate of Merit was also awarded to Mr. C. H. Herbert, Manager of the Sparkhill Nurseries, for blooms of his Improved Marguerite Carnations from seed sown in February last.

Two very fine honorary exhibits of vegetables were staged, both of them extensive and of first-class quality; one by Messrs. Thomson & Co., seedsmen

Birmingham. The other by Mr. John Hughes, seedsman, Harborne, Birmingham, in which were very fine Lyons Leek and Onions of sorts.

The *Gardeners' Magazine* Silver Medal was unanimously awarded to F. Jenkins, Esq., Olton, near Birmingham, for his very fine Primulas, which took the 1st prizes.

SCOTTISH HORTICULTURAL ASSOCIATION.

NOVEMBER 16.—The Chrysanthemum and fruit exhibition of the Scottish Horticultural Association was opened on the above date in the Waverley Market, Edinburgh. The President stated at the opening proceedings that 30,000 people attended last year's show. There were 880 entries this year, against 855 last year, and 168 exhibitors against 153. The market seemed less furnished than usual, by the absence of several of the larger tables and other arrangements of plants on the floor. There were, nevertheless, some handsome exhibits, new in style and elegant in arrangement.

At the west end of the hall, Mr. Campbell of High Blantyre had a table of beautiful Carnations, forming a dense mass of flowers.

Conifers of the choicest species came from the nurseries of Messrs. Laird, and James Dickson & Sons, forming a broad sweeping lane at one end of the hall, and were artistically arranged with a front band of dwarf fine-foliaged shrubs. Close to these exhibits was a handsome table of well-grown foliage plants, interspersed with Heaths and other plants in flower; they were tabled by Messrs. Laird. The table of Mr. John Downie was of the most elaborate and novel description; wreaths, bouquets, and designs, in great variety of form, were an immense attraction. Great quantities of Violets, Roses, Roman Hyacinths, Cypripediums, Callas, Bouvardias, and Chrysanthemums were used in the arrangements, and dwarf foliage plants dotted through the group prevented any appearance of stiffness. Close to this table was a remarkable display of dessert fruits, in which were some of the finest Pears in the show, the largest Gros Colmar Grapes, and two immense clusters of Musa Cavendishii; they were from Mr. Brown, Princes Street, and had 1st prize. The 2nd prize was awarded to Mr. D. Smith, Forest Road, for a splendid display of dwarf Palms, amongst which Asparagus was largely used for effect.

Mr. D. Fletcher's extensive stand of wire-trainers of every conceivable form, covered with Ivy and other climbers, were of great interest to many.

Messrs. Todd & Co., Edinburgh, had an extensive floral display of cut flowers and plants, including bouquets in many forms, made up of Orchids, Roses, Violets, Chrysanthemums, &c. Mr. Todd had a quantity of plants in pots for sale, the profits of which are to be handed over to the Gardeners' Orphan Fund.

An arrangement by Mr. Phillips of Golden Acres Nursery, of Vines, Araucarias, and Roses, appeared to advantage among the great breadths of gaudy flowers.

The Chrysanthemum plants in pots, for competition, were, as usual, arranged along the north and south sides of the hall. Mr. Cavanagh, gr. at Murrayfield, took the leading prizes easily; though his plants were tall they were well laden with finely-developed flowers. Some of the plants staged in this class were decidedly bad.

The large circular groups on the floor were arranged all along one side of the hall, with specimen Palms between each circle. These groups were very formal, but from their large size, and the abundance of flowers, they created a great show. Mr. Petrie, Westerlee; Mr. D. Holmes, Winton Castle; and Mr. Geo. Wood, Oswald Road, took leading prizes in these classes.

By the tables devoted to the classes for cut flowers the crowding was most inconvenient, and there were many criticisms of the judges' awards.

The chief trophy of the show was won by Mr. James Beisant, gr. at Castle Huntley. This was an elegant Silver Bowl, set on an ebony stand, and is the gift of the Corporation of Edinburgh, for the best forty-eight blooms of Japanese Chrysanthemums. All of the six stands in competition were of exceptional merit, Mrs. H. Cannell, Colonel Smith, Marie Hoste, Stanstead White, R. C. Kingston, Sunflower, W. H. Atkinson, and C. S. Shrimpton were noticeable. The 2nd prize was awarded to Mr. J. Machar, Broughty Ferry. He had in his exhibit Etoile de Lyon, Avalanche, Boule d'Or, Vivian Morel, and Stanstead White in extra

fine form. The 3rd prize went to Mr. William Rushton, Duntochar House, whose stand contained one of the best blooms in the show—F. S. Dibbens.

In the competition for the Scottish Challenge Cup the 1st prize was awarded to Mr. D. Nicol, Rossie Gardens, Forgandenny, who far out-distanced his opponents with one of the best exhibits. All his flowers were first-rate, Vicomtesse Hambledon, Stanstead White, Sunflower, W. Tricker, Louis Boehmer, J. S. Dibbens, F. A. Spaulding, M. Bernard, Mrs. W. E. Clarke, and Etoile de Lyon were remarkable. The 2nd prize went to Mr. J. Kyles, Gogar, who had flowers of fine form, but not so large as those of Mr. Nicol.

In the class for twenty-four Japanese, the 1st prize went to Mr. W. Rushton, his Mrs. E. W. Clarke and W. H. Lincoln were first-rate flowers; Mr. G. Price, Sunderland Hall, was 2nd for a capital exhibit.

In the nurserymen's classes the leading prizes were taken by Mr. H. J. Jones, Lewisham.

In the other twenty classes were some remarkably fine flowers, but some exhibits were weakened by irregularity in the size of blooms. Bouquets of Chrysanthemums were largely represented. Mr. Beisant, Castle Huntley, took the lead.

There were numerous exhibits of Cyclamens, Primulas, Cinerarias, Roman Hyacinths, table plants, &c., dividing the lines of Chrysanthemum stands, which relieved much of the monotonous appearance of the tables.

Messrs. T. Methven & Sons had a very telling table of choice cut blooms, set in pots of Ferns with excellent effect. Mr. Cavanagh had the Silver Medal for the finest pot-plant in the show; and the Bronze Medal for best incurved bloom went to Mr. Clarke. A Bronze Medal for the finest Japanese bloom went to Mr. Jones. The *Gardeners' Magazine* Medal was awarded to Mr. Cavanagh for the highest cultural skill.

Fruit.—Grapes were in some classes of high quality. Four bunches of Grapes from Mr. Leslie, Pitcullen Gardens, Perth, were awarded 1st prize, his Muscat of Alexandria was very fine; Gros Colmar, Lady Downes, and Alicante were also good in size and of excellent finish. Mr. Murray, Parkhall, made a capital 2nd; his Gros Colmar and Lady Downes were of beautiful colour.

Muscats were remarkable in the 1st prize exhibits for fine forms and size of berry, and excellent colour, and Mr. McNeil was the winner. Mr. J. Leslie, Pitcullen House, Perth, was 2nd. Black Alicante were first-rate, the best coming from Mr. Leslie. Mr. Murray was 1st for very fine Gros Colmar; Mr. Patterson, Avondale, 2nd; and Mr. Jeffrey, Harewood, Leeds, 3rd. The 1st prize for Lady Downes went to Mr. Murray; and the 2nd and 3rd to Mr. Leslie and Mr. Caldwell, in the order named. These were inferior to what we often see at Edinburgh. Mr. D. Kidd, Carberry Towers, showed Bowood Muscat, as any other Grape not mentioned in the schedule, but very unlike what we have often seen that variety. Mr. Ramsay was placed 1st for two remarkably fine Cayenne Pines. Mr. McIntyre, The Glen, had a pair of good-sized fruits, very handsome in form, and was 2nd. The latter exhibitor brought twelve exhibits to the exhibition, and had prizes for each; he had a Vanda coerules with two spikes carrying 12 and 18 flowers respectively. The same exhibitor was 1st for a collection of thirteen dishes of fruit. Mr. Murray, Culzean Castle, was 2nd. For eighteen dishes, Mr. John Campbell, Singleton, South Wales, was 1st. Mère de Ménage, Alexander, Alfriston, Hawthornden, and Blenheim Orange, were of much excellence, clean and finely coloured. Mr. Day, Galloway House, showed well in this class for eighteen dishes of Apples and six of Pears. Mr. Wilson, Auchencruine, Ayr, made a capital display, Cellini, Stirling Castle, and King of Pippins were extra fine. His Pears were very good, Marie Louise, first-rate. Mr. Day had a good 2nd. Competition in all the classes was keen. Over 700 dishes of Apples and Pears were tabled, and no inferior fruits were exhibited.

Vegetables were never seen finer in Edinburgh at any season, and in all the classes the competition keen, Mr. Pender and Mr. McBean, Craigends Castle, Johnstone, were the principal competitors. Mr. Pender was the victor. There were some other fine collections in this class. For six sorts, Mr. Harper, Perth, was a capital 1st, and Mr. Waddie, Dollor, 2nd.

There were grand dishes of Tomatoes, Leeks, roots of all sorts, Cauliflowers of great size, and in large numbers. Brussels Sprouts very fine (but exhibited in deep baskets, where there might be "toppers," giving much trouble to the judges), Cabbage, Curled Kale, Savoy, and Celery, covered long and wide tables,

STIRLING.

NOVEMBER 16.—The annual exhibition of the Stirling Chrysanthemum Association was opened in the public Hall on the above date. The show this year has been by far the finest exhibition the Society has ever held. The blooms were in first-rate condition, but the plants were indifferent. A group of plants, arranged for effect, shown by Mr. G. Virtue, was awarded 1st prize.

Mr. D. Ardrrie, gardener, Larbert House, was 1st for thirty-six cut blooms, and received the Silver Cup. This exhibitor narrowly lost this prize last year.

For twelve blooms (Japanese), and twelve, ditto, incurved, the Gold Medal was won by Mr. A. Watt, Skellmorlie.

Mr. Ritchie, Polmaise, tabled fine Primulas; Mr. Lunt, Keir, Roman Hyacinths, Cyclamens, and six ornamental foliage-plants, &c.

In the classes for fruit, Mr. Lunt brought from Keir Gardens fine Grapes, black and white, taking the leading prizes in the various classes. Mr. Ritchie of Polmaise Gardens, took 1st honours with eighteen dishes of Apples, very fine for the Valley of the Forth.

Mr. Low, Viewforth, had 1st for the collection of vegetables. Amateurs put in a strong appearance in all the classes set apart for them.

WIMBLEDON.

NOVEMBER 14, 15.—A very bright show held on a wretchedly dull damp day, we found the spacious Drill Hall well-filled with fine groups, and the platform effectively decorated with foliage and flowering plants by that excellent local firm of florists, Messrs. D. S. Thompson, who had a large group of Chrysanthemums, zonal Pelargoniums, Roman Hyacinths, &c., attractively arranged. Of purely miscellaneous groups there were but two in competition. Mr. Chandler, gr. to Canon Haygarth, having the best, and the other came from H. S. Dean, Esq., The Priory. Both, however, suffered in face of the nine strong groups of Chrysanthemums that were staged, seven of these covering an area of 40 superficial feet, each being in the same competition. Here Mr. A. Newell, gr. to Sir E. Saunders, who had not so unduly packed his plants together as some others had, was 1st, although many of his front row plants needed some covering. Mrs. Falconer Jameson, Vivian Morel, Louis Boehmer, Etoile d'Yon, M. Bernard, Avalanche, &c., comprised some of the best flowers. Mr. S. Mynett, Ashburton House Gardens, Patney, was 2nd with a very massive and close-packed group, overdone with white and yellow, and wearing a very formal aspect. Mr. Chandler was 3rd. In the smaller group class Mr. Hunt, gr. to R. C. Payne, Esq., was 1st, and Mr. Coleman, gr. to C. T. Giles, Esq., 2nd. Trained plants are not much encouraged here, single specimens only being invited. Mr. Thornton, gr. to J. E. Crocker, Esq., had in the Japanese Source d'Or, the best large-flowered, and Mr. Hunt the best Pompon in Sœur Melanie. Half a dozen grand double Primulas from Mr. Mease, gr. to A. Tate, Esq., Downside, Leatherhead, were an easy 1st; and the best single Primulas came from Mr. Newell. Mr. French, gr. to Mrs. Barclay, had the best berried plants in very finely grown and fruited giant yellow Capsicums. Others relying chiefly on the small-berried Solanums. Mr. Portbury, Roehampton, had the best six table plants.

Cut blooms were generally good, the leading class being for good money prizes, requiring twenty-four Japanese and twenty-four incurved; there were five competitors in this case, all good growers, and the first place fell to Mr. W. Higgs, gr. to J. B. Hanbury, Esq., Fetcham Park, who made such a striking figure last week at the Aquarium, Kingston, and elsewhere; and Mr. Mease was 2nd. The next class was for twelve blooms in each section, and here Mr. Mease was a good 1st with some fine blooms of chiefly new varieties; Mr. Carpenter was 2nd. With twelve incurved Mr. Jinks, gr. to W. M. Grant, Esq., Cobham, was 1st; Mr. F. Hopkins, gr. to Mrs. Woodderspoon was next. Mr. Alderman was 1st, however, with the twelve Japanese, having capital clean flowers; Mr. A. Skeggs, gr. to Mrs. Baum, Wimbledon, being next. The latter had the best six incurved blooms; Mr. Wright, gr. to H. A. Tuffnell, Esq., having the best twelve bunches of Pompons; and Mr. Jinks the best six Anemones; whilst Mr. Mease had the best reflexed

Obituary.

ALEXANDER STEPHEN WILSON.—Readers of this journal will learn with regret the death of Mr. A. S. Wilson, of North Kinnmundy, Aberdeenshire, which took place in Aberdeen, on Thursday, 16th inst. The deceased gentleman, who combined in quite a remarkable manner, a zest for botanical and agricultural experiments, was in the 67th year of his age. Trained to the profession of a civil engineer, Mr. Wilson took a prominent part in the construction of railways in the North of Scotland. On his marriage, however, with Miss Stephen, the proprietrix of North Kinnmundy, deceased mainly directed his attention to botanical research. A recognised authority on botany and cryptogams, Mr. Wilson conducted a series of experiments with regard to ergot in grasses, and on one occasion he ate quantities of ergot to demonstrate that the ordinary notion that it was poisonous was fallacious. He also conducted a series of very valuable experiments with regard to the singling of Turnips, with a view to determine the most advantageous distribution of plants, so as to produce the greatest yield per acre. Mr. Wilson was an occasional contributor to this journal, and the author of several scientific and philosophical works, among these being *The Botany of Three Periods: Pharaoh's Dream, The Sower, and The King's Measure* (published in 1878); *The Unity of Matter*, and *Creation, the work of To-day*. His most eminent work, however, was *A Bushel of Corn*, which appeared in 1883. The preparation of this work—the conducting of the experiments on which the author's conclusions were based, the collection and marshalling of a marvellous array of facts and phenomena, and the compilation of very ingenious tables—occupied sixteen years; and the work was considered so thorough and valuable, that the Highland and Agricultural Society of Scotland presented its author with their Gold Medal. He was also possessed of a distinct poetical temperament. He published a volume of *Songs and Poems* in 1884, which embraced a series of very clever botanical poems, "The Ballad of Ovarian Zoophore," "Fungus-Hunting," and "A Mycological Serenade." A man of remarkable abilities in many ways, Mr. Wilson was peculiarly shy and reserved, and perhaps on that account his diversified work did not attain the popularity and recognition which its merits deserved. Full of kindly thoughts and feelings, and generous to a fault, Mr. Wilson made many friends.

MARKETS.

COVENT GARDEN, November 23.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

PRICES rule as last week.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 4 0-8 0	Narcissi, French, white, 12 bunches ... 2 0-3 0
Bouvardias, per bun. 0 6-1 0	— yellow, 12 bun. ... 4 0-6 0
Carnations, 12 blms. 1 0-2 0	Orchids:—
Chrysanthemums, 12 bunches ... 4 0-9 0	Cattleya, 12 blms. 6 0-12 0
— doz. blooms ... 0 6-3 0	Odontoglossum crispum, 12 blms. 2 0-6 0
Eucharis, per dozen 4 0-8 0	Pelargoniums, scarlet, p. 12 bun. 4 0-6 0
Gardenia, per dozen 2 0-4 0	— 12 sprays ... 0 6-1 0
Hyacinth, Roman, 12 sprays ... 0 8-1 0	Pyrethrum, 12 bun. 2 0-4 0
Lilac (Fr.), per bun. 4 0-6 0	Roses, French, p. doz. 2 0-3 6
Lilium lancifolium, p. doz. blooms 2 0-3 0	— p. box of 10 2 0-3 0
— Harrisii, p. doz. 6 0-9 0	— Tea, per dozen 0 6-2 0
Lily of the Valley, per dozen sprays ... 2 0-3 6	— coloured, dozen 2 0-4 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— yellow (Maréchal), per doz. 2 0-6 0
Marguerite, 12 bun. 1 6-3 0	— red, per dozen ... 1 0-1 6
Mignonette, 12 bun. 2 0-4 0	Tuberose, 12 blms. 0 4-0 6
Primula, dble. p. bun. 0 6-1 0	Violets, Parmé, p. bn. 2 6-3 6
	— Czar, per bun. 2 0-2 6
	— English, per doz. 1 6-2 0

ORCHID-BLOOM in variety.

CHRYSANTHEMUM-BLOOM very plentiful, price is low in consequence.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ficus elastica, each 1 6-7 6
Aspidistra, per doz. 15 0-30 0	Foliage plants, doz. 12 0-42 0
— specimen, each 7 8-21 0	Marguerite, per doz. 6 0-12 0
Chrysanthemums, doz. 6 0-9 0	Mignonette, doz. pots 6 0-9 0
— large plants, each 1 6-2 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dracena, each ... 1 0-5 0	Pelargonium, scarlet, per dozen ... 3 0-6 0
Erica, various, p. dz. 9 0-24 0	Poinsettias, per doz. 12 0-15 0
Evergreen Shrubs, in var., per dozen ... 6 0-24 0	Primulas, per dozen 6 0-9 0
Ferns, various, doz. 4 0-9 0	Solanums, per doz. ... 9 0-12 0
— small, per 100 4 0-6 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 6-7 0	Pine-apples, St. Michael, each ... 2 6-7 6
Cobs, per 100 lb. ... 32 6-—	
Grapes, per lb. ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 4-—	Lettuces, per doz. ... 1 3-2 0
Beet, red, per dozen 1 0-2 0	Mushrooms, punnet 1 3-2 0
Carrots, per bunch ... 0 4-0 6	Mustard and Cress, punnet ... 0 2-—
Cauliflowers, each ... 0 2-0 4	Parsley, per bunch ... 0 2-0 3
Celery, bundle ... 1 0-1 3	Shallots, per lb. ... 0 3-—
Cucumbers, each ... 0 4-1 0	Tomatoes, per lb. ... 1 0-—
Endive, per dozen ... 1 3-1 6	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 3-1 0	
Leeks, per bunch ... 0 3-—	

POTATOS.

Trade and prices continue about the same as last reported. J. B. Thomas.

SEEDS.

LONDON: Nov. 22.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market dull and uninteresting. Cables from America describe Red Clover seed as steady. For perennial Ryegrasses the tendency is downwards. No attention is given to Italian Ryegrass. Winter Vetches and Rye show no change. Knapweed Tares are substantially dearer. Canary-seed keeps strong; the demand is rapidly overtaking the supply. The new Hempseed now arriving being good and cheap, continues in favour. Wrinkled Seed Peas meet a brisk enquiry. Canadian Linseed is firm. For Peas and Haricots the sale is meagre.

FRUITS AND VEGETABLES.

BOROUGH: November 21.—Quotations:—Cabbages, 2s. 6d. to 4s.; Cauliflowers, 5s. to 6s.; Savoys, 3s. to 5s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; Apples, 1s. 3d. to 6s. per bushel.

SPITALFIELDS: November 21.—Quotations:—Cabbages, 2s. 6d. to 4s.; Savoys, 3s. to 5s.; Cauliflowers, 5s. to 7s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; do., English, 5s. 6d. to 6s. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

STRATFORD: Nov. 21.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done at the undermentioned prices:—Cabbages, 2s. to 3s. per tally; Savoys, 2s. to 4s. per tally; Greens, 1s. to 1s. 3d. per bag; Cauliflowers, 6d. to 1s. 3d. per dozen; do., 2s. 6d. to 6s. per tally; Turnips, 1s. 3d. to 1s. 6d. per dozen bunches; do., 2s. to 3s. per ton; Carrots, household, 40s. to 5s. per ton; do., cattle-feeding, 28s. to 37s. 6d. per ton; Parsnips, 6d. to 1s. per score; Mangels, 2s. to 2s. 6d. per ton; Swedes, 20s. to 27s. 6d. per ton; Onions, English, 16s. to 17s. 6d.; do., Dutch, 5s. 9d. to 6s. 6d. per bag; do., Valencia, 6s. to 6s. 6d. per case; Apples, English, 2s. to 5s. per bushel; Brussels Sprouts, 1s. 3d. to 1s. 6d. per half-sieve; do., 2s. 3d. to 2s. 6d. per flat; Celery, 6d. to 10d. per roll; Horseradish, 1s. to 1s. 6d. per bundle.

FARRINGTON: Nov. 23.—Quotations: Cabbages, 6d. to 9d. per dozen; Cauliflowers, 1s. 6d. per dozen; Celery, 8d. to 9d. per roll; Sprouts, 1s. 3d. to 1s. 6d. per half-bushel; Onions, 6s. 6d. to 7s. per cwt.; Apples, Wellingtons, 3s. 6d. per bushel; Blenheim, 5s. per bushel; English Grapes, 1s. to 1s. 3d. per lb.; Sweetwater, 4d. to 6d. per lb.; Pears, Catillac, 2s. 6d. per basket.

POTATOS.

BOROUGH AND SPITALFIELDS: November 21.—Quotations ranged from 40s. to 110s. per ton.

STRATFORD: Nov. 21.—Quotations:—Magnums, dark-land, 35s. to 45s.; do., light-land, 45s. to 80s.; Imperators, 35s. to 55s.; Sutton's Abundance, 65s. to 70s. per ton.

FARRINGTON: Nov. 23.—Quotations:—Hebrons, 80s. to 10s.; Regents, 50s. to 70s.; Snowdrops, 60s. to 80s.; Man Crop, 70s. to 90s.; Magnums, 40s. to 80s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending November 18, and for the corresponding period last year:—1893: Wheat, 27s. 4d.; Barley, 29s. 2d.; Oats, 18s. 2d. 1892: Wheat, 27s. 11d.; Barley, 28s. 7d.; Oats, 18s.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 155s.; new, do., 128s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s.; new Mixture, 115s. to 130s.; and Straw, 35s. to 58s. per load.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Inch.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
	Above (+) or below (—) the Mean for the week ending November 18.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.				
0	4	—	0	35	+ 496	— 20	6 +	215	45 7 8
1	2	—	4	29	+ 302	+ 14	4 +	170	24 0 8
2	2	—	24	9	+ 431	— 47	2 +	148	18 3 18
3	1	—	16	25	+ 520	— 23	4 +	146	17 6 29
4	2	—	13	33	+ 658	— 31	1 +	139	17 4 16
5	1	—	24	12	+ 581	— 41	4 +	139	20 3 21
6	1	—	11	22	+ 466	— 22	5 —	171	34 5 14
7	1	—	21	12	+ 739	— 56	4 —	160	26 2 15
8	1	—	25	7	+ 686	— 57	4 +	147	28 3 10
9	2	—	11	25	+ 538	— 61	1 +	139	20 3 21
10	3	—	24	11	+ 582	— 76	0 aver	162	26 7 25
11	1	—	38	0	+ 839	— 53	0 aver	156	23 9 25

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending November 18, is furnished from the Meteorological Office:—

"The weather was fair at the commencement of the week, but soon became very unsettled, with heavy rain in the South of England on the 14th. The latter half of the period was exceedingly rough, severe gales being experienced in all districts, with heavy falls of rain in the west and north, and with snow in most parts of Great Britain as well as at some of the Irish stations.

"The temperature was below the mean in all districts excepting 'England, N.E.' the deficit being slight in most places, but amounting to as much as 4° in 'Scotland, N.' The highest readings were observed, as a rule, either on the 16th or 17th, when the thermometer exceeded 55° in most of the English districts, as well as in 'Ireland, S.' In 'England, E.' (at Cambridge), the maximum on the 17th was as high as 59°. The lowest readings occurred on the 14th or 15th, when sharp frost was reported in all districts excepting the 'Channel Islands.' In the 'Midland Counties,' and 'Ireland, N.,' the thermometer fell as low as 21°.

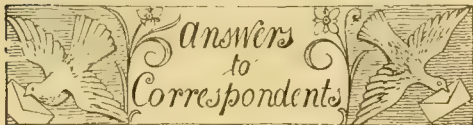
"The rainfall was in excess of the mean in all the wheat-producing districts, as well as in 'England, S.W.' and 'Ireland, N.' In 'Ireland, S.' and the 'Channel Islands,' however, the amount was about equal to the normal, while in 'Scotland, W.' and 'England, N.W.' there was a rather large deficiency.

"The bright sunshine was slightly in excess of the mean in the central and eastern parts of England, and also in Ireland and the 'Channel Islands.'

Elsewhere the amount was less than the normal, the deficiency being large in 'Scotland, E.' and 'England, S.W.' The percentage of possible duration ranged from 29 in 'England, E.' and 26 in 'Ireland,' and the 'Channel Islands,' to only 8 in 'Scotland, N. and E.'

TRADE NOTICE.

THE Publisher will be glad to be placed in communication with anyone who has sent orders or remittances in response to an Advertisement "Bulbs for Sale," which appeared in our issue of October 14, 1893, from John Page, 25, Liverpool Street, King's Cross, W.C.



BRIAR ROSE SEED: *E. J. H.* The seed will not vegetate under two years; but instead of sowing it in beds and thus, perhaps, occupying valuable space for a long time, it would be better to mix the seed in a heap of sandy loam and let it remain till there are signs of germination, and then sow broadcast in beds and cover it about $\frac{1}{4}$ inch with sifted soil from the alleys.

CARNATION FUNGUS: *C. A.* *Helminthosporium echinulatum*, often figured and described in our columns. Burn all the affected plants.

CARNATIONS: *J. S.* Eel-worms in the leaves. Burn all the affected plants.

CUTTINGS OF CHRYSANTHEMUMS: *Fond of Mums.* See an article by Mr. Douglas in our next issue.

EUCARIS: *A. C.* The additional number of parts is due to the union of two flowers in an early state. It is not uncommon, but of no advantage horticulturally.

GRUBS: *T. Kitley.* The grubs are those of the common "Swift" moth, *Hepialus humuli*. They will feed on the roots of almost any herbaceous plant. You might try a top-dressing of gas-lime, or some other insecticide. But a more effectual method, if it can be done without injury, would be to lift the plants, clear the roots and carefully hand-pick the grubs, and replant in fresh mould. The grubs are now about full grown, and will soon be passing into the pupa stage; some may have already done so. If the plants are in the open a few starlings would do more good in a morning than any insecticide. *R. McL.*

INSECTS: *W. M.* The grubs are those of a weevil, and are very destructive. Trap them with slices of Carrot or Potato.

LILY OF PALESTINE: *G. H.* We do not find the name in any list that we have been able to consult.

MANAGEMENT OF OUTDOOR NURSERY STOCK: *Reddings.* There is no book that will afford you just the kind of information you desire.

NAMES OF FRUIT: *W. Roulunds.* Mère de Ménage. — *W. S. A.* Blenheim Orange Pippin. — *W. Rolfe.* 1, King of Pippins; 2, Clissold Seedling; 3, Cornish Aromatic; 4, Cackle. — *J. Stubbs.* 1, Rymer; 2, Lucombe's Pine; 3, London Pippin; 4, Cackle Pippin; 5, Colonel Vaughan. — *Mr. Parker.* Pitchcombe Vane. 1, Beurré Diel; 2, over-ripe; 3, P. Colman; 4, Chaumontel; 5, Espérance; 6, unknown. — *R. Duthie.* 1, Unknown; 2, King of Pippins; 3, Scarlet Nonpareil; 4, Wiltshire Defiance; 5, Dumelow's Seedling; 6, Braddick's Nonpareil; 7, Golden Noble; 8, King of Pippins. — *C. E. M.* 1, Golden Noble; 2, Cox's Pomona; 3, Blenheim; 4, King of Pippins, very large; 5, King of Pippins, probably, but stalk wanting; 6, King of Pippins, true. — *Rev. T. W. S.* 1, Rymer Pippin; 4, Gloria Mundi; 6, Beauty of Kent; 7, Claygate Pearmain; 8, Dutch Mignonne, others not known. — *G. T. C.* Apple Mank's Codlin. — *A. Morrison.* 1, Sturmer Pippin; 2, Cox's Pomona. — *O. Harvey.* 3, Hambledon Deux ans; 4, Fearn's Pippin; 6, King of the Pippins, others unknown. — *John Tuck.* Your Pear is Vicar of Winkfield.

NAMES OF PLANTS: *H. F.* *Reineckia carnea*. — *C. J. D.* 1, *Croton variegatus*; 2, *C. cornutus*. — *X. Y. Z.* (in

a Tin Box). 1, *Adiantum Mariessii*; 2, *Tradescantia variegata*; 3, *Bougainvillea glabra*; 4, *Cypripedium insigne*; 5, *Hibiscus rosa sinensis flore-pleno*; 6, next week; 7, *Selaginella Wildenovii*; 8, *Panicum variegatum*; 9, *Pentas carnea*. — *P. Read.* 1, *Begonia nitens*; 2, *B. nitida*; 3, *Begonia maculata hybrida*; 4, *B. Ingrami*; 5, *Lastrea opaca*; 6, *L. spinulosa*; 7, *Pteris hastata*; 8, *Aspidium vestitum*; 9, *A. aculeatum*. — *W. Robinson.* *Bulbophyllum hirtum*. — *J. R.* 1, *Cattleya labiata*; 2, *Odontoglossum crispum*, nothing extraordinary; 3, *Oncidium pretextum*; 4, *Calanthe Veitchii superba*; 5, probably a form of *Cypripedium barbatum*. — *T. W. Z., Leeds.* Your variety of *Cattleya Bowringiana* is an uncommon one. Light forms are not as a rule valued like the dark-tinted ones, but yours having a very brightly-coloured lip is certainly very attractive.

NEPENTHES: *Hortus.*—You may take the old plants out of the baskets in which they are growing, and cut away a portion of the lower part. Then prepare clean baskets with sphagnum moss, quite clean crocks, and some pieces of charcoal of the size of Walnuts, and a few knobs of fibry peat, letting all be well mixed together. Stick a plant, of course without any roots at the base, in the middle of the basket, and fill in around it with the compost, making the plant steady in some way. Afford a good watering, and hang the basket not far from the roof, in a moist hot-house. The young plants may be detached, and treated in the same manner, or they may be stuck into small perforated Orchid-pots. The warmer of your houses, that is the one with a night temperature of 65° at this season, would be the best. You may be rewarded by fertile seeds, we cannot say with certainty. *Nepenthes* are shy seeders, even when care has been taken to fertilise the flowers.

SWANLEY: *Critic.* The reports are furnished to us as an item of gardening news. We are not ourselves in a position to offer any opinion upon them.

PEAT OR MOSS LITTER USED IN STABLES AS A MULCH: *R. M.* Quite safe as a mulch, if laid on the soil 2 or 3 inches thick, but not so effective as a protection against frost as straw-litter, which has the advantage that it does not become compacted readily, and can be placed amongst the branches of dwarf Roses. On heavy land moss-litter forms, when dug in, a lightener of the staple, and as it has absorbed the ammonia from the urine, and contains the voidings of the horses, it is a rich manure. If the manure be not placed in large quantities together, there need be no fear that it will breed fungus when dug into the land.

TABLE DECORATIONS. We do not know of the book you name.

COMMUNICATIONS RECEIVED.—*R. C. B.*—*M. T.*—*B. W.*—*J. H.*—*T. H. Walker.*—*F. Q. C.*—*R. L.*—*W. C.*—*R. D.*—*H. M.*—*P. W.*—*A. Y.*—*Shirburn.*—*E. E.*—*J. H.*—*W. A.*—*C. A.*—*S.*—*H. C. F.*—*W. D.*—*M. C.*—*T. W.*—*W. Chitty.*—*E. Tonkin.*—*J. Waterer.*—*M. T.*—*A. P.*—*J. B.*—*J. D.*—*A. O. W.*—*W. H. Y.*—*F. W. B.*—*V. J. A.*—*C. G. H.*—*A. W.*—*C. P.*—*T. C.*—*C. W. B.*

DIED.—*Mr. JAMES BELL*, gardener to His Grace the Duke of Wellington, at Strathfieldsaye, for twenty-eight years, died at Mortimer on Nov. 9, at the age of seventy-one years, and was buried on Monday, the 13th inst. at Strathfieldsaye. The deceased was an excellent gardener, and much respected by all who knew him.

— On the 21st inst., *JOHN WATERER* of Bagshot, Surrey, age 67. Funeral to take place at Bagshot, on Saturday, the 25th inst., at 3 o'clock.

CONTINUED INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

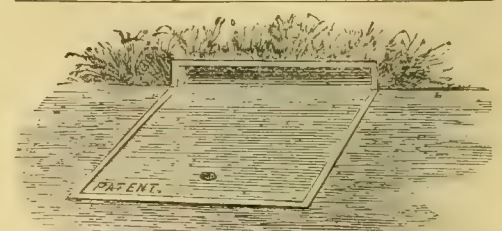
Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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This useful invention is a great improvement on the ordinary Garden Grating, and is especially suitable for hilly walks and drives. As they never get stopped by rubbish or sand they effectually prevent the washing away of the gravel in heavy storms, and they save half the labour in cleaning out the cesspools. The prices are:—

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(The larger sizes are very strong for carriage drives.) Full Particulars and Testimonials on application.

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Superior Portable Frames, large stock ready for immediate use, well made, painted four coats, glazed with 21-oz. glass, carriage paid:—1-light frame, 4 x 6, 36s. 6d.; 2-light frame, 6 x 8, 58s.; 3-light frame, 12 x 6, 85s. 6d. Span-roof Frames, 9 x 5, £3 15s.; 12 x 6, £5; 16 x 6, £7 10s. Can send off same day as ordered.

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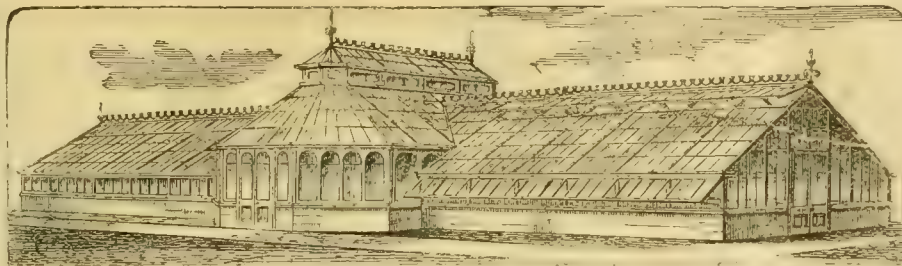
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Testimonial from HERBERT GREG, Esq.:—"September 13, 1893. I am pleased to say the work was done very well, and have no doubt it will be very comfortable when finished."

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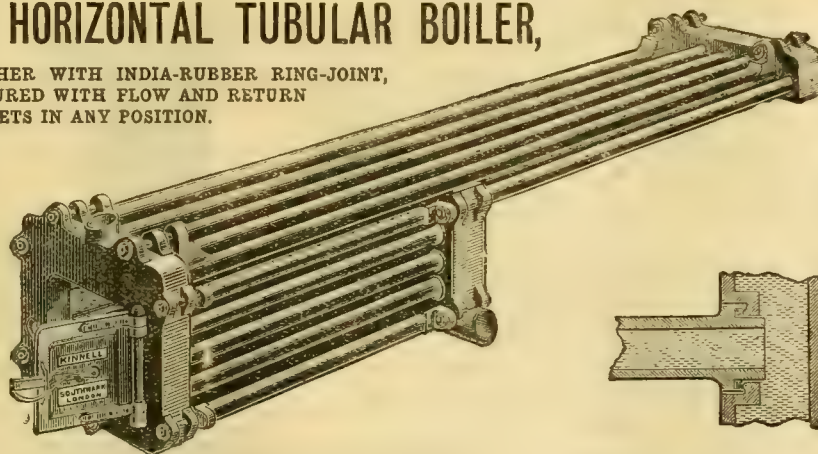
CHARLES P. KINNELL & CO.,

IRONFOUNDERS, ENGINEERS, and BOILER-MAKERS.

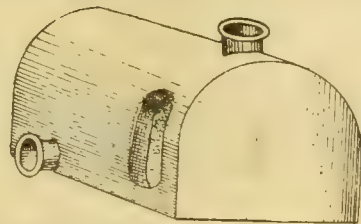
ROCHFORD HORIZONTAL TUBULAR BOILER,

**BOLTING TOGETHER WITH INDIA-RUBBER RING-JOINT,
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SOCKETS IN ANY POSITION.**

This Boiler has special advantages over any other of this type manufactured; the configuration of the centre casting divides the top connecting-pipe into two sections, gives increased waterway, and is removable without taking off back casting. No other Boiler has this a vantage.



CAST-IRON SADDLE BOILER, WITH WATER-WAY END and SIDE-FLUE OPENINGS.



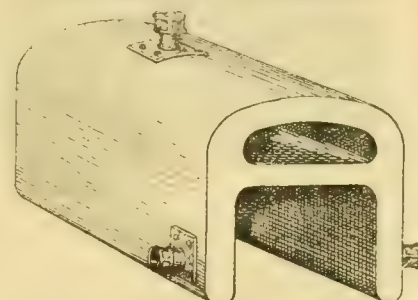
The above is the best of all Boilers of the plain Saddle type. Made in all sizes, from 24 to 66 inches long.

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TERMINAL END AND CHAMBERED SADDLE BOILER.

VERY HIGHLY RECOMMENDED.



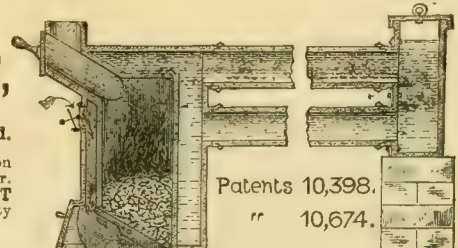
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Section of Boiler and Pipes, showing action of Hot Blast and Automatic Regulator. Awarded the **SILVER MEDAL (FIRST PRIZE)** by the Royal Horticultural Society in 1883; still stands without rival for—

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IMPORTANT.

I RESPECTFULLY beg to inform all readers of this Paper that the first edition (100,000 copies) of my Revised PRICE LIST, consisting of 400 Pages and about 1200 Illustrations, bound in cloth, is Now Ready. I shall have much pleasure in forwarding, in due course, to every person who has applied for a Price List up to Oct. 23 of this year, on post-free; and to all persons until Nov. 26 sending Three Stamps for postage, after which the price will be One Shilling each, Post-free. This List is the most Complete in the trade, and has cost several thousand pounds to produce.

P.S.—Persons who have applied for a List at any time during the year, need not write again, as I have names and addresses, and one shall be sent in due course.

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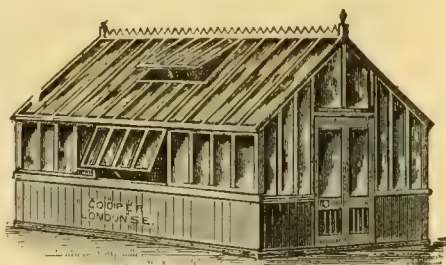
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- Because he imports Timber in large quantities, and with the aid of special constructed machinery converts it into various shapes and sizes required for horticultural work himself on the premises, which no other horticultural builder is in a position to do. Can any timber merchant supply you with timber at anything near his prices? If any doubt, get estimates.
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- Because he has an Iron Foundry in the iron district and casts nothing else but his own boilers and pipes all the year round, and by this means can sell cheaper than any other firms who go in for all kinds of castings. Can you buy a boiler or complete heating-apparatus at anything near the price he quotes? If any doubt, get estimates.

You will see by the above that everything is bought direct in the cheapest market, thus saving middleman's profits, and not having to go to the timber merchant for the timber, the glass merchant for the glass, and the foundry for heating apparatus, like other horticultural builders. Buy of the Original Inventor of Cheap Greenhouses. Do not pay 5 or 6 profits, but one only.

AMATEUR GREENHOUSES. SPAN-ROOF.



Long, Wide, High.			Delivered and Erected Complete within 20 miles.	
7ft.	5ft.	7ft.	to eaves...	£2 16 0
8ft.	5ft.	7ft.	"	£4 5 0
9ft.	5ft.	7ft.	"	£5 0 0
10ft.	5ft.	7ft.	"	£5 10 0
11ft.	5ft.	7ft.	"	£6 15 0
12ft.	5ft.	7ft.	"	£8 0 0
13ft.	5ft.	7ft.	"	£8 10 0
14ft.	5ft.	7ft.	"	£12 0 0
15ft.	5ft.	7ft.	"	£12 0 0
16ft.	5ft.	7ft.	"	£17 0 0
17ft.	5ft.	7ft.	"	£22 0 0
18ft.	5ft.	7ft.	"	£30 0 0
19ft.	5ft.	7ft.	"	£40 0 0
20ft.	5ft.	7ft.	"	£50 0 0

Deduct 10 per cent. if required for brickwork.

THESE GREENHOUSES ARE MADE

especially for Amateurs at a nominal figure, thereby coming within the reach of those who require a strong but inexpensive structure, and being constructed in complete sections, can be readily erected by any handy man or gardener in a few hours. The framework is substantially constructed of red deal, the lower part being filled in with good, sound, well-seasoned, tongued and grooved matchboards. The houses are fitted with door complete, with rim lock and brass furniture, painted or coat of good oil colour, supplied with all necessary iron-work and stages for each side, and good 16oz. glass throughout. All parts securely packed, and put on rail; or delivered, erected, and glazed complete, within twenty miles of London Bridge, at the prices mentioned on each side.

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15-oz., 100ft. 21-oz., 100ft.
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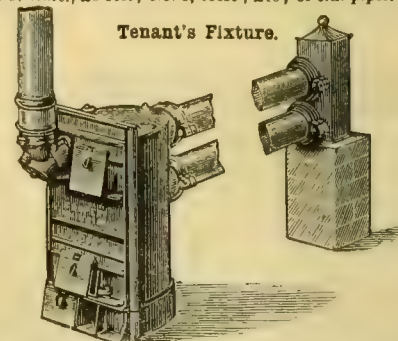
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MATCH BOARDS, ½, 5s. 6d. per square; 1 in., 9s. 6d. per sq.
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FEATHER EDGE BOARDS, ¾ by 6, 6s. 6d. per square.
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CUTTING FLATING, 9d. per 100 ft.; Deeping, 2s. 3d. per dozen 12 ft.
SLATING BATTENS, ¾ by 2, 1s. 3d. per 100 ft.; ¾ by 1, 7d. per 100 ft.
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	Open.	s. d.
12 ft. by 1½ ft.	...	2 0
12 ft. by 2 ft.	...	3 0
12 ft. by 2½ ft.	...	3 6
12 ft. by 3 ft.	...	4 0
12 ft. by 3½ ft.	...	4 6
12 ft. by 4 ft.	...	5 6
12 ft. by 5 ft.	...	6 6
12 ft. by 6 ft.	...	8 0

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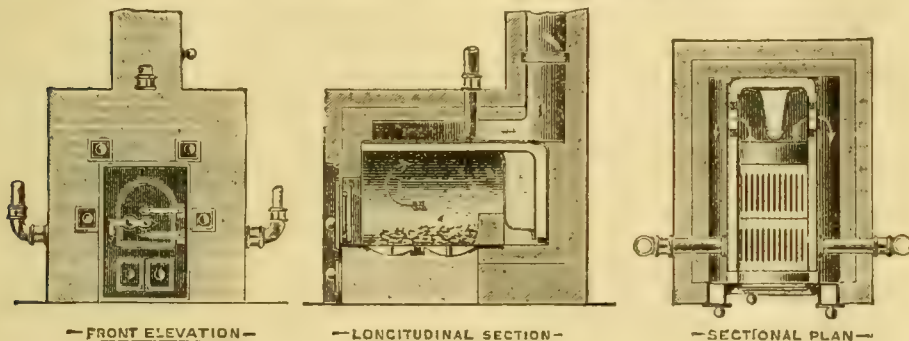
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M B 2	5 0 " by 2 3 " by 2 6 "	2200	" 32 0 0
M B 3	6 6 " by 3 0 " by 3 0 "	4000	" 60 0 0
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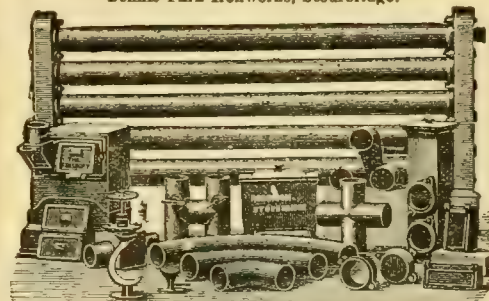
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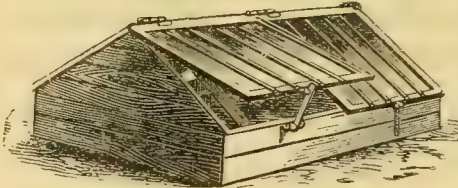
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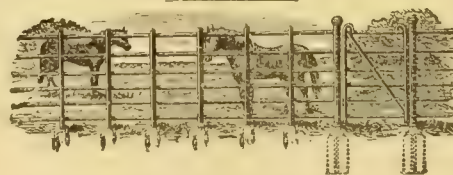
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The GARDENERS' CHRONICLE

ESTABLISHED 1841. No. 2762.

No. 362.—VOL. XIV. { THIRD
SERIES. }

SATURDAY, DECEMBER 2, 1893.

[Regt. as a Newspaper. { PRICE 3d.
POST-FREE, d }

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On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 8, at half-past 12 o'clock, by order of Messrs. F. Sander & Co., ESTABLISHED and IMPORTED ORCHIDS, consisting of Cattleya Brownii (Rolf), new and beautiful, combining the chaste and exquisite loveliness of Loddigesii with that of Amethystoglossa. A grand importation of the true Pachy variety of Odontoglossum crispum; the rare and charming Dendrobium D'Albertisii; a healthy and well-grown lot of unflowered seedling Cypripediums, from the choicest and best varieties in cultivation; numerous First class Certificates have been lately granted by the Royal Horticultural Society to plants from previous batches of our unnamed Seedlings. Dendrobium imperatrix and veratrifolium, Persea aspera and varieties, Odontoglossum aureum splendens, Cypripedium Rothschildianum, splendid imported plants; Mesopismidium grandiflorum, the finest type; Odontoglossum hystrix, splendid plants; and many other fine things.

On view morning of Sale and Catalogues had.

Friday Next.

DIRECT IMPORTATIONS OF ORCHIDS for UNRESERVED SALE.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE, on FRIDAY NEXT, a CONSIGNMENT OF ORCHIDS from PARAGUAY, all in splendid condition, including a splendid lot of Oncidium Jonesianum (many of them with new roots), Sophronites species, Miltonia species, Marmodes species, and Catasetum species.

The Sale will also include 200 lots of ESTABLISHED ORCHIDS, from Messrs. F. Horsman & Co.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY NEXT, at 12 o'clock each day.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on the above days, thousands of Named HYACINTHS, TULIPS, CROCUS, and NARCISSUS, from Holland, in lots to suit large and small buyers.

On view mornings of Sale, and Catalogues had.

Monday, Wednesday, and Thursday Next.

DUTCH BULBS and LILIUMS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, and THURSDAY NEXT, December 4, 6, and 7, at half-past 12 o'clock precisely each day, a very extensive Consignment of BULBS and LILIUMS from Holland, in splendid condition; 10,000 SPIRÆA, LILY of the VALLEY Crowns and Clumps, and many other BULB and ROOTS.

On view morning of Sale, and Catalogues had.

Wednesday Next.

Choice ROSES, RHODODENDRONS, AZALEAS, SYRINGAS, AUCUBAS, LAURELS, THUIAS, LILIUMS, and many other ORNAMENTAL SHRUBS and PLANTS, just received in fine health from Holland.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY NEXT, December 6.

On view morning of Sale, and Catalogues had.

Wednesday Next.

Standard and Dwarf English-grown ROSES, a collection of BORDER PLANTS, Collection of Shrubs from an English Nursery, LILIUMS from Japan, Home Grown LILIUMS, rare NARCISSUS, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 6.

On view morning of Sale, and Catalogues had.

Wednesday Next.

A splendid consignment of AZALEA INDICA, A. MOLLIS, CAMELLIAS (all well furnished with flower-buds), CLEMATIS, PALMS, BEGONIAS, GLOXINIAS, &c., from Ghent, without reserve.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 6.

On view morning of Sale, and Catalogues had.

Sales at Birmingham.

MESSRS. JAMES AND BAXTER hold SALES at their Spacious Rooms, 12, Bull Ring, Birmingham, as follows:—

EVERY MONDAY, at 11 A.M.—Horticultural Implements, Tools and Miscellaneous Furniture, &c.

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EVERY WEDNESDAY, at 4.30 P.M.—Trade Sales of Cut Flowers.

EVERY THURSDAY, at 11.30 A.M.—Azaleas, Camellias, Palms, Dracenas, and other Plants from Belgium; Roses, General Nursery Stock, Carnations, Dutch and French Bulbs.

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J. & B., formerly with Messrs. Protheroe & Morris. Thirteen years' practical experience.

WANTED, TO RENT, a NURSERY, about 600 to 800-feet run, well-heated; with about 1 Acre of Land, suitable for Growing Cucumbers and Tomatos. Must be cheap, and with no Stock.—J. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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BUSINESSES to be DISPOSED OF.

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clumps of Lily of the Valley. Ask for sample and price. Also in stock, 800 S. Rose HYACINTH Norma, at 10s. per 100. Mixed HYACINTHS, 5s. per 100; and a few thousands of SCILLA SIBIRICA, 6s. per 1000. Cash with order.

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SALE OF A LARGE and SPLENDID PRIVATE COLLECTION of ORCHIDS

BY THE

LIVERPOOL HORTICULTURAL COMPANY

(JOHN COWAN), LIMITED.

A LIVERPOOL GENTLEMAN

has just purchased and placed in the hands of the Company, for Sale on commission, the entire well-known large and splendid Collection of Orchids, formed by E. G. Wrigley, Esq., of Victoria House, Dukinfield, near Manchester.

Mr. Wrigley's Collection is well known as one of the finest in this part of the country. The collection of DENDROBIUMS is certainly surpassed by few, if any, either in point of cultivation or variety. All the plants are in splendid health, and many of the finest varieties in cultivation are included, as well as some of the finest unflowered hybrids yet obtained.

The CATTLEYAS and LÆLIAS are also a grand lot, including many splendid specimens, and many rare and fine varieties. The CATTLEYA MOSSIE are a specially large and splendid lot; there are hundreds of fine specimens of this Cattleya alone, and all are clean, healthy, and vigorous.

The CYPRIPEDIUMS are a large and fine lot also, in splendid health, and include many of the finest hybrids, named and unnamed.

The ODONTOGLOSSUMS are also a fine lot, as are the ONCIDIUMS, CYMBIDIUMS, CÆLOGYNES, &c. In fact, the collection includes all the species and varieties usually found in first-rate collections.

Mr. Wrigley has given a great amount of personal attention to his Orchids, and has taken special care of the names and descriptions, which may with confidence be relied upon, and, in addition, they will be guaranteed by the gentleman for whom the Company is selling.

All the plants are models of good culture and cleanliness. Mr. Wrigley stated when the purchase was made, that not a single insect pest of any kind could be found on any Orchid in his Collection, and there is every reason to believe that his statement is correct.

Priced and Descriptive Catalogues are being prepared, and they will be posted to all the Company's patrons (and to any one who may send their name and address for the purpose), on Friday, December 8. All will be posted on the same day, and no purchaser will be permitted to see a Catalogue, or have prices quoted to him otherwise before that day; nor will any order be accepted for any plant or plants from the Collection. But from Monday, December 4, the Collection will be on view, and intending purchasers are invited to come or send to see it, and orders will be received from the date of sending out the Catalogues.

CATALOGUES, and any further information, may be obtained from the Company.

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THE SIXTH ELECTION OF FIVE CHILDREN to the benefit of this Fund, consisting of an allowance of 5s. per week (subject to the conditions stated in Rule XIII.) will take place on FRIDAY, February 9 next, at the Cannon Street Hotel, London, E.C. All applications must be made on a proper printed form, copies of which may be had gratis of the Hon. Secretary, or any of the Local Secretaries. Such form must be correctly filled up, duly signed, and returned to this office not later than WEDNESDAY, December 27.

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NEW AND MAGNIFICENT CYPRIPEDIUM CHARLESWORTHII

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Exhibited and unanimously awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society, and pronounced by every one to be the most beautiful and charming Cypripedium introduced, causing quite a sensation at the Drill Hall, on Tuesday, September 26, 1893.

The special feature of this novelty is the dorsal sepal, which is quite distinct in appearance and colour to any other known Cypripedium, which will render it exceptionally valuable to the hybridist.

The *Gardeners' Chronicle* says:—"There was a more than usually interesting show of Orchids, but by far the most novel and beautiful exhibit was a plant of Cypripedium Charlesworthii, Rolfe, n. sp., First-class Certificate, an entirely new species, imported by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and exhibited by them for the first time, the exhibit coming in for a great amount of attention and admiration. The plant in growth somewhat resembles C. Spicerianum, and the flowers, which are borne on scapes about 3 inches in height, are unlike any other known species. The beautiful flat, upper sepal is 2½ inches wide, broadly orbicular, white, tinged, and veined over its surface with light rosy-purple; the apex alone showing a white marbling. The lower sepals are about 1 inch broad, greenish-white. The petals, which resemble those of C. insigne, are plain-edged, over 1½ inch long, yellowish, tinged with brown; the lip also somewhat resembles that of the Sylhet form of C. insigne, and is similar in colour to the petals. The staminode is very singular, resembling pure white porcelain, the protuberance in the centre being conical in form, and not a single spur, as in C. insigne. It is an extraordinary and beautiful species."

The *Garden* says:—"A First-class Certificate awarded to Cypripedium Charlesworthii, Rolfe, a distinct and decidedly novel species, which cannot

be compared with any that we can call to mind. The plant is of dwarf habit, the flowers each having a remarkably fine dorsal sepal, extra large, measuring about 2½ inches each way; the colour a pale pink, suffused with purple, and having a lighter network towards the extremities; the petals are shaded with greenish-brown, so also is the pouch, which is rather small. A greater novelty amongst the species of the Slipper family has not been seen for a long time. From Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford."

The *Journal of Horticulture* says:—"A very remarkable introduction from the East Indies; it is a distinct and beautiful species, very dwarf, with long narrow leaves. The flower stem is only 3 to 4 inches long; the lip is short, green, heavily suffused with bronzy-brown, and the dorsal sepal is very noteworthy—it is broad and rounded, and the colouring is a beautiful soft rose, delicately veined; the staminode is pure white. A feature of the leafage are the rows of dots on the reverse side. The species is a great acquisition (First-class Certificate)."

The *Gardening World* says:—"An interesting collection of Orchids was exhibited by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, including a handsome new species, named Cypripedium Charlesworthii, from the East Indies."

In offering this great novelty, we beg to state that we are the sole importers of this plant. We shall be very pleased to quote size, price, and full particulars. Inspection cordially invited.

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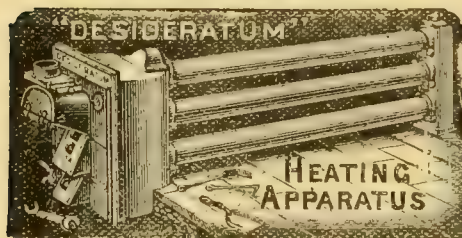
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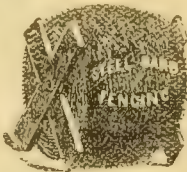


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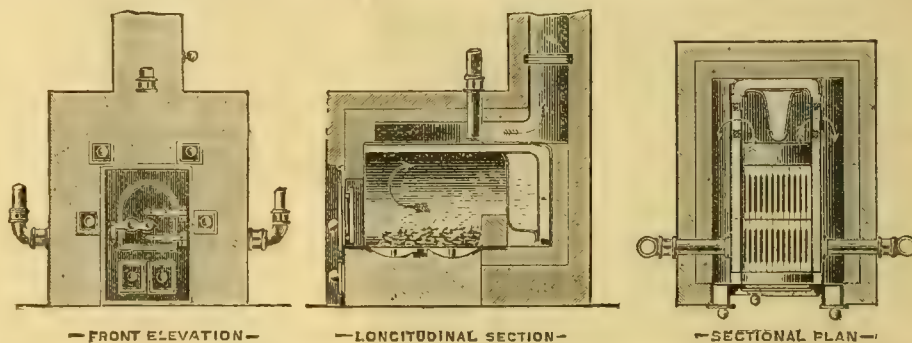
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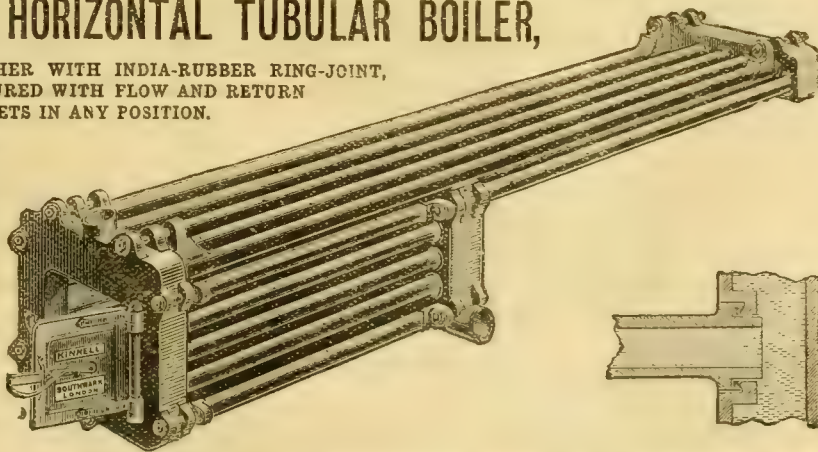
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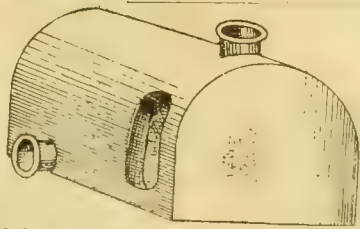
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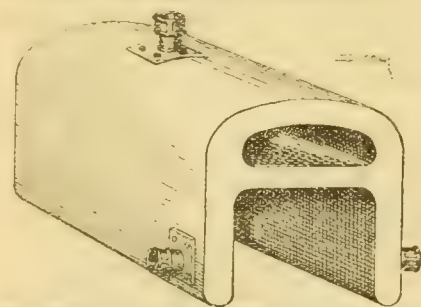


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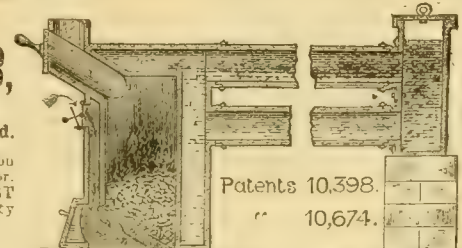
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THE Gardeners' Chronicle.

SATURDAY, DECEMBER 2, 1893.

THE GIANT GUNNERA.

(G. PELTATA OF SELKIRK'S ISLAND.)

FINE and gigantic as are *G. manicata* (see fig. 97, p. 589, of a recent issue), and the forms of *G. scabra*, when well-grown in suitable localities, it is, perhaps, as well to remember that there are other kinds awaiting importation to our gardens. Darwin in his *Voyage of the Beagle*, p. 279 (edition 1879), told us of a species he saw in Chili, with leaf-stalks a yard or so high, but at Narrow-water Park, co. Down, I lately saw a specimen of *G. manicata* bearing twenty-five enormous leaves, the tallest having petioles as thick as a man's arm, and over 6 feet in height. The diameter of the plant was 35 feet, and the lip of the largest leaf was 10 feet in height, and 10 feet 3 inches across the blade at its widest diameter. A man 6 feet in height could and actually did walk upright under the leaf-blades and amongst the stout and prickly stalks quite easily.

But my present intention is not to mention fine examples of the known species so much as to draw attention to the description and photographic illustration of *G. peltata* in part ii., p. 828 (with plate xxxiii.) of the *Narrative Volume of the Voyage of H.M.S. Challenger*. The description is so interesting, relating, as it does, to the vegetation of Robinson Crusoe's, or rather Alexander Selkirk's Island (Juan Fernandez), that I may be permitted to extract the following paragraphs.

"In ascending the steep path leading directly from Cumberland Bay to Selkirk's monument, the first (? Sandal wood) tree was met with at about 700 feet altitude, all below had been cut down. The way led through a hollow overgrown by a dense growth of the gigantic Rhubarb-like Gunnera peltata.

"Darwin remarked on the large size of the leaves of [?] this plant, and height of its stalks, as seen by him in Chili. The stalks of the plants he saw were not much more than 3 feet in height, whilst in this hollow the stalks must have been 7 feet in height. The size attained by the Gunnera varies with its situation. A narrow passage was cut in a thicket of them, and the huge circular leaves were elevated far above a man's head. The leaves catch, and hold a large quantity of rain-water; in many places the leaves are very conspicuous on the hill slopes, crowding closely as an undergrowth, and not rising high above the ground.

"The *Challenger's* visit was in spring, when most excellent Strawberries were growing wild about the lower slopes of the island, and especially well on banks, beneath the cliffs, close to the seashore. The Strawberries are large and

fine, but white in colour, being a cultivated variety; they have not at all reverted to the parent wild form, either in colour or size; a few only were just beginning to ripen."

Drimys Winteri (Winter's Bark Tree) and *Libertia formosa* were seen in flower, and Myrtles were seen, as also the curious shrub or tree-like Composite, *Dendroseris*, sp., with long, straggling branches, and Dandelion-like foliage, exuding a milky juice when out or broken. A solitary Palm—*Juania australis*—was sacrificed for its young-growing point, or "Cabbage," which is white in colour, being naturally blanched, and delicate in flavour, "somewhat like a fresh Filbert." So much for the botany of Juan Fernandez, but the description of the *Gunnera* is in one or two respects worth re-examination, for while the illustration might represent either *G. manicata* or *G. scabra* fairly well, the name, and also the description, implies a species quite distinct from either the one or the other. Thus, "the huge circular leaves" * * * "catch and hold a large quantity of rain-water," shows clearly that there is no sinus in the leaf-base, but that the leaves are really peltate, forming natural water-bowls or leafy tazzas, that Selkirk may have found useful in dry seasons! Be this as it may, *Gunnera peltata* is evidently a plant to be desired in our gardens, if it could be introduced by means of seed or otherwise. But the same is true of many other botanical rarities mentioned in these pithy volumes, such as the Kergulen Cabbage for example (*Pringlea antiscorbutica*), of which fine photographic plates are also given. Two other species of *Gunnera* are noted as being found on Selkirk's Island, viz., *G. bracteata* and *G. insularis*, but we are not told of their size or character.

A common species of *Gunnera* in Chili is *G. chilensis*, Lamarck, found chiefly on sandstone cliffs, and sides of ravines and valleys, from Caracas to Patagonia. Of this species, according to Baron Von Mueller (*Select Extra-Tropical Plants*, edition 1881, p. 154), Darwin measured leaves 8 feet in diameter, and 24 feet in circumference. The young acidulous leaf-stalks serve as a vegetable, like Rhubarb, and the thick roots are used for tanning and dyeing. *G. scabra* is known as "Panque," or "Pañke," in Chili. *G. macrophylla*, of Blume, grows in Java and Sumatra on mountains as high as an altitude of 6000 feet.

To return to the *Gunneras*, it would be interesting to know more about them all, and especially of this remarkable *G. peltata* of the *Challenger* record, of which preserved specimens were doubtless obtained. It may possibly be quite distinct from the plant Darwin saw in Chili, as also from the giant species of Patagonia. It has always seemed to me a great oversight, that a good gardener or horticultural collector was not included on the staff of the *Challenger* survey, since from his exertions a good harvest of living plants and seeds might, doubtless, have been obtained. Private enterprise in collecting yields very excellent results in its way, but only plants popular and saleable at home, are, as a rule, sought for or obtained. This is especially true if we search the annals of nurserymen who have employed collectors abroad. At one epoch, it is Ferns or succulent plants, then Cape Heaths and Pelargoniums, or Indian Rhododendra, that claim attention; or again Hardwooded plants of Australia, and the Coniferae of America, but for the past quarter of a century Orchids have practically absorbed all attention. Hardy plants generally are now becoming so popular, however, that we may soon

look to their being sought after in all temperate and cool regions with more assiduity and pecuniary success. Who can guess what treasures still exist in Siberia or in northern China, or in the Caucasus, or alongside the great Russian highway to Herat? Then there are the mountains of Siam, Cochin China, and Thibet, the very "roof of the world," as it has been called, still awaiting the collector of hardy and half-hardy vegetation. Even in such easily-traversed countries as Chili and Peru, there yet linger many remarkable half-hardy plants of known beauty, that are still unknown to our gardens here at home, and the same is true of extensive districts in Japan, and gigantic chains of the Himalayas, with their unknown treasures of Liliium, or of Rhododendron and Magnolia.

We now live in an epoch of very remarkable liberality of feeling and thought, and one, moreover, of the broadest phases of culture. There is a welcome and a purchasing public awaiting new or rare plants of whatever kind, in England and America to-day. We find people paying two or three guineas for a Narcissus, or a choice Lily bulb, as readily as for an Orchid, and so widely diffused and deeply-rooted is the love of all hardy flowers, that the wonder is the professional collectors of them for trade purposes are so few and far between. *F. W. Burbidge.*

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM × HERMIONE, *n. gard. hyb.*
(*Spicerianum* ♀, *barbatum* Warneri ♂).

ALTHOUGH belonging to a section tolerably well-filled, this is a distinct variety, its general appearance, and especially its low stature, placing it nearer *C. × Maynardi* (*Spicerianum* × *purpuratum*), than to any of the other hybrids in which *Spicerianum* has been crossed with varieties of *C. barbatum*. The leaves are very pale green with a light tracery of dark green; the flower-stems about 6 inches in height. The beautiful pure white upper sepal of the flower is nearly 2½ inches broad by 1½ inch long; and it has a bright green base, a purple line up the centre, and shaded rose-purple veining extending over the basal half. The horizontally extended petals are greenish-white with a rose-coloured tinge and some lines of chocolate dots at their bases. The lip greenish-white tinged on the face with reddish-brown; the lower sepal whitish with green lines. It flowered with Reginald Young, Esq., Fringilla, Linnet Lane, Sefton Park, Liverpool. *James O'Brien.*

ACIDANTHERA ÆQUINOCTIALIS.

Plants of this interesting Irid are now flowering in one of the stores at Kew. They are from corms sent to Kew by Mr. Scott Elliott last March, for whom they had been collected in Sierra Leone by Captain H. M. Donovan, who wrote:—"I have forwarded to you a bundle of bulbs of the Iria (?) you found at the top of Sugar Loaf at Sierra Leone. You seemed interested in them, and when up there I brought down a lot. I dried them in the sun as well as I could, and hope some will grow." Mr. Scott Elliott notes that he found this plant growing "in crevices of bare gneiss rocks in open spaces in the bush almost at the summit of the Sugar Loaf, 3000 feet alt." Previous to this our only knowledge of this *Acidantha*, according to Mr. Baker, was from an unpublished figure by Dean Herbert in the Lindley library. It is possible that Herbert had the plant in cultivation. The Kew plants are like *Glaudiolus Gandavensis* in corm, stem, and foliage, the stem measuring 4 feet in height, and the leaves 20 inches by 1½ inch. The dried specimens collected by Captain Donovan were 3½ feet high. The flowers are borne in a loose spike, six being the highest number shown so far. The spathe-valves are green, 3 inches long, folded over the flower-tube, which is slender, curved, and

6 inches long; the limb is composed of six equal lanceolate segments, forming a regular stellate expansion, 3 inches across when fully open, snow-white, with a broad streak of crimson at the base of each segment; the three stamens and three-branched style stand erect in the centre of the flower. In a cool-house this plant was not so happy as it has been since it received tropical treatment. It is placed next to *A. bicolor* by Mr. Baker, which is a native of the mountains of Abyssinia, and is the only species hitherto known as a garden-plant. It has stems 2 feet high, with white flowers nearly as large as those of *A. æquinoctialis*. This species is a favourite garden-plant in New York, where it is grown in tubs out-of-doors in summer. There are seventeen species of *Acidantha*, all of them African. *W. W.*

KEW NOTES.

DIOSPYROS KAKI.—This, the Japanese Persimon or Date Plum, does not often fruit in English gardens, so that the plant in the succulent-house (No. 5) at Kew, which has this year borne five fine fruits, has been something of a novelty. One of the fruits is still on the plant, although they were all ripe and of the richest orange colour six weeks ago. They are about the same size and shape as an ordinary Orange or large Peach. The plant is a grafted one, obtained from a French nursery three years ago, is now 6 feet high, and not unlike a healthy Bush-Apple. It gets the same treatment as an ordinary fruit-tree, i.e., pruning, manuring, watering, &c., the only difference being in the shelter afforded by the glass. I see no reason why it should not be grown and fruited annually in a sunny greenhouse. It must have plenty of sun. In the south of France and Italy it is not an uncommon tree, and when in fruit it has all the attractiveness of a well-cropped Apple of the Baldwin stamp. In Japan it is largely cultivated, and there are about fifty named varieties of it, the fruit varying considerably in size and form, and in colour from pale yellow to blood-red. The Japan Agricultural Society, Tokio, issues a descriptive Catalogue of forty-two varieties, and a coloured sheet representing forty-five varieties, with cultural directions. This is a fruit which might be introduced into many parts of India and the colonies. It would be quite at home along with Peaches, and probably would stand almost tropical treatment. *W. W.* [The plant has, on more than one occasion, been figured in our columns, from English-grown specimens. Ed.]

CYDONIAS.

THE Japanese Quinces are among the most showy and continuous-flowering shrubs. The species I wish to draw attention to is the *Cydonia japonica* and its varieties, frequently spoken of as *Pyrus japonica*. It was introduced to this country in 1815, and soon became an immense favourite. This fact is proved by the frequency with which it is met in old gardens, either large or small. Producing a grand display of blossoms early in the spring, and continuing more or less in bloom throughout the summer, this species of Quince well deserves its popularity. It seems almost equally at home in any soil or position, but is generally seen in what I venture to say is one of the least suitable places it could occupy; i.e., on low walls. To see the full beauty of this shrub it should be allowed to grow at will, and the finest examples I have seen were on a lawn. The type has brilliant scarlet flowers, many of which are produced before the foliage becomes general, and are continued until the whole plant is in full leaf. Very few shrubs are more striking early in the spring than this *Cydonia*. The varieties are of cream, blush, and rose colour; there also are double and scarlet forms. As a hedge plant, where somewhat loose growth can be allowed, few subjects are more suitable, while its stiff growth and formidable thorns make it almost as impregnable as the best-kept hedges. *A. P.* [On the

Continent, *Pyrus japonica* is frequently observed clipped to a spreading cushion-like mass of from 2 to 5 feet in diameter and 1 to 3 feet high, and in this form it is a most striking object when in bloom, scarcely a leaf being seen, only its scarlet blossoms. As a clipped hedge it is also good. The pruning or shearing is done after blooming. Ed.]

THE SPECIES OF PHŒNIX.

NOTWITHSTANDING the now numerous works which treat on the natural order of Palms, and the many pamphlets on the different genera, there still appears to be as great a diversity of opinion as ever, and, furthermore, there appears to be no uniformity in the matters of nomenclature amongst the present works. Up to the present date the genus *Phoenix* has proved one of the greatest problems to botanists; nor can it be wondered at when, both under cultivation and in the wild state, when growing in close proximity to other species, they are almost sure to fertilise one with the other, and in this way an endless number of varieties has been produced which deviate more or less from the parent plants, and in some cases assume characters so distinct as almost to entitle them to specific names.

In plants grown under glass the variation is not so evident as when growing in the open air in their native habitat, or as we have them in the Riviera gardens, flowering and fruiting in abundance, and assuming all the various forms which so puzzle the connoisseurs when they visit our gardens, and from whom there is no definition to be obtained with regard to their nomenclature. It seems a pity that now most of the *Phœnix* in the Riviera gardens have attained maturity; or at least, are in every way characteristic, that they are not resorted to for scientific purposes, but *au contraire*, very little is known of them, and the flowers and fruits which they produce annually are wasted, at least from a botanical point of view.

Taking the *P. reclinata* section as an example, I find that the varieties of this species, if it is a species, are more confusing even than the Date Palm, and it is a difficult matter to distinguish the true one amongst the many varieties which exist. At the Villa Valetta garden at Cannes there is a very fine group of this section all massed together, and amongst them there are not two which answer to the same description, and some of them are very distinct in character. For my part, I consider *Phoenix reclinata* a mere variety of *P. spinosa*, and it is evident that some system will have to be followed in this way before they can be classified. I myself have, after consulting most of the chief authors, concluded that the following is the safest plan to adopt, and from which the many varieties may be classified:—

Phœnix spinosa (typica), the ordinary plant with yellow petioles.

„ „ var. *reclinata*, much recurved, and short thick spines.

„ „ „ *cycadæfolia*.

„ „ „ *paradenia*.

„ „ „ *argentea*, &c.

There are also many other varieties, as *P. pumila*, *P. zanzibarensis*, &c., which belong to this section. As to *P. spinosa* there are one or two points which seem quite clear. The plant is known from Abyssinia to Durban, and on the other coast from the Cape to Senegambia, and is to be occasionally met with inland, such as at the great lakes. Owing to its great geographical distribution the plant shows great variations, in the habit, foliage, colour of the petioles and spines, the white and brown covering of the young fronds, and in various other ways.

It appears to have been originally named by Jacquin as *P. reclinata* in 1807, two years later it was named *P. spinosa* by Thonning, and a little later again was named *P. leonensis* by Loddiges after Leone, one of the early collectors at the Cape.

Sir John Kirk in one of his pamphlets on East Tropical Africa writes:—“*Phoenix spinosa*, common over the central region of the continent and on the sea-coast, sometimes as a bush, is a tree with a

flexuose stem 20 feet in height. The green bunches of fruit immersed in water for twelve hours suddenly assume a scarlet hue, and the astringent pulp becomes sweet.” The latter remark I have satisfactorily proved to be the case.

Again in *P. dactylifera* there is an endless number of varieties, and we find that in Egypt there are over a hundred varieties in cultivation. It has been said that the Arabs, to perpetuate their stock for fruiting purposes, take only the offsets, as they cannot be relied upon from seed! In any case it is a practical method, as offsets grow fruit much more freely than plants raised from seed.

P. sylvestris I should certainly class as belonging to the *P. dactylifera* section, and it is moreover probably the wild species of the date.

P. canariensis appears to be of hybrid origin, and the two progenitors of all the Riviera plants are said to be the two magnificent specimens in Baron Vigier's garden at Nice. If this be the case, it is not to be wondered at that there is difficulty amongst the *Phœnix*, considering the many varieties of this species which may be seen in the Riviera gardens.

P. paludosa probably exists in the Riviera gardens, but I have not yet met with the true one. I was informed by a gardener awhile ago that he had the true one, but on examining the fruit, I discovered that it was possibly a hybrid between that and another species, as the embryo of the seed was inclined to one end, whilst *P. paludosa* appears to be the only one which has the embryo at the base of the seed.

Amongst the *P. humilis* there is to be found an endless variety, some of them being very distinct.

Beccari in “*Malesia*” treats on the genus *Phoenix* at some length, but I cannot entirely agree with him with regard to the last-named species, and it seems evident that he, like most others, finds this genus a very confusing one to deal with. The hybrid *Phœnix* mentioned by Mr. Naudin (p. 299), is probably an acquisition as a fruit, but there is also an hybrid between *P. canariensis* and *P. dactylifera*, which exists in gardens here, and which ripens its fruits regularly, and is of a delicious flavour. *Riviera*.

CHILIAN STRAWBERRIES.

THE mention in the narrative of the *Voyage of the Challenger*, of “most excellent Strawberries,” as “growing wild,” is interesting, but if they have really been introduced as is later on implied, when we are told that they are “white in colour, being a cultivated variety,” then surely they are simply “naturalised,” rather than really “wild.” Possibly there may be good evidence of the white Strawberries of Juan Fernandez having been introduced from the mainland of Chili; *F. chiliensis*, with whitish or rose-coloured fruits, being abundant there, and well known as the source from which our old race of “Chilian” Strawberries were derived, the typical species having been introduced to France in 1727 and largely grown in the neighbourhood of Brest as lately as 1857. This old white or pale rosy semi-dioecious Strawberry was largely grown in America before the advent of newer seedling varieties, and is still cultivated at the Strawberry-beds near the *Phoenix Park*, Dublin, as noted by Barnett, in *Trans. Hort. Soc.*, vol. vi., p. 194, as long ago as the year 1826. *F. W. B.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT CHELTENHAM.

IN Mr. Cypher's nursery, the varieties of *Dendrobium Phalænopsis Schroderianum*, though now on the wane, are almost as beautiful as ever. Two very distinct types have appeared in several specimens, viz., the type with white sepals, and dark crimson petals and lip, and the type denominated “*delicatium*,” in which the flowers are white, tinged with bright rose over the outer halves of the segments.

D. P. Statterianum, *D. bigibbum*, and *D. superbiens*, all belonging to a class which thrive admirably, are also making a good show.

Varieties of *Cypripedium* × *Leeanum*, *C. × Sedeni*, *C. Spicerianum*, and the numerous forms of *C. insigne*, are also good. Two extra-fine forms of *Masdevallia bella* and *M. Chimera*, numerous light scarlet *Sophranitis*, several of the fragrant *Trichosma suavis*, and other good things, are in bloom, and the plants in every instance in excellent health.

PHALÆNOPSIS APHRODITE VAR. GLORIOSA.

The form of the plant known in gardens as *P. amabilis*, imported by Messrs. Hugh Low & Co. in 1888, and named by Professor Reichenbach *P. gloriosa*, preserves its distinct character, but evidently only as a variety of *P. Aphrodite*, the variety of which species, named *Dayana*, it rather closely approaches. It has very clear white flowers, with bright crimson markings at the base of the lip. It is finely in flower with R. Brooman-White Esq., at Arddarroch, Garelochhead, N.B.

CYPRIPEDIUM (SELENIPEDIUM) × SCHRODERÆ.

A fine plant of the best variety of this stately hybrid, obtained by crossing *C. caudatum* and *C. × Sedeni*, is now in bloom in the gardens belonging to F. C. Jacob, Esq., at Cheam Park, Cheam. Its flowers are almost entirely of a rich dark magenta-crimson, the unfolded side-lobes of the pouch being blush-white, with crimson spots. It is certainly one of the handsomest varieties of the now numerous hybrids of the *C. × Sedeni* class.

CYPRIPEDIUM × TENNYSON (GENANTHUM SUPERBUM ♀, DAYANUM ♂).

As is often the case in flowering a batch of hybrid *Cypripedium*, the first to flower and be described in this case was very inferior to the varieties which flowered subsequently. The best which has yet appeared is now in flower in McArthur's Nursery, Maida Vale, from whence the plant is being distributed. Its flat, perfectly circular upper sepal, displays a fine clear white margin, and the whole flower is more brightly tinted than the original.

ORCHIDS AT WALTON GRANGE.

The proprietor of Walton Grange, W. Thompson, Esq., is a well-known Orchid amateur, of nearly a quarter of a century standing, who has devoted much of his spare time to the cultivation of cool-house Orchids, principally *Odontoglossums*, and with him originated the unique *O. crispum Thompsoni*, which is in its way as magnificent a variety as *O. c. Rothschildianum*, *O. c. apiatum*, or *O. c. Mundyanum*, these three being probably the gems of the first water in the *Alexandræ* section of *Odontoglossums*. In addition to this, there are many other fine things in the way of *Odontoglossums*; for instance, *O. Stevensii*, named after Mr. Thompson's able gardener; *O. fastuosum*, a perfect gem, entirely covered with round spots of a deep rosy hue, and named by the late Professor Reichenbach; as well as many other interesting species and varieties of *Odontoglossums*. Mr. Stevens is the envied possessor of many chatty letters from that distinguished Orchid luminary, which make interesting reading for those who ever happened to meet him, or read his numerous descriptions in past years in these columns.

It would be hard to find a collection of *Odontoglossums* where almost every procurable species or variety is so well represented and cultivated as in this one, for in it are to be found the grandest varieties, down to the meekest and lowliest spidery forms. Although Mr. Stevens has been a very successful cultivator in years past, he has recently been fired with an ambition to excel his former achievements; this is owing to a visit which he paid in the spring to some of the Belgian establishments, where he studied closely the methods and practices of Orchid growers, and bore away much useful information. It is a matter of fact, that nearly, if not all, the *Odontoglossums* have been turned out of their former compost, and material similar to that in vogue in Belgium has taken its place, with the result that

Mr. Stevens is gradually reaching that goal for which he has been striving. The collection does not, however, comprise cool Orchids only, as, during the last year or two, attention has been given to *Cattleyas*, *Lælias*, *Dendrobiums*; and a few weeks ago, when I saw the collection, there was a fine display of flowers. Principal among these must be mentioned a superb strain of the indispensable *Cattleya labiata* vera, the range of variety being marvellous, some being almost of uniform colour, while others have pale sepals and petals, with very dark labellums; a few have the appearance of *Cattleyas gigas*, with a prominent white eye on either side of the throat. When I noticed these plants 100 or more flowers were expanded, and about 100 plants had still to unfold their flower-buds. Grouped with this lovely species were about a dozen very fine plants of *Dendrobium Phalenopsis Schroderianum*, one plant in particular bearing five magnificent spikes of almost pure white flowers. This variety, called Walton Grange variety, is of great value; another distinct form, in which pure white and dark crimson are combined, is named Miss Katie Thompson. *Lælia tenebrosa*, Walton Grange variety, recently Certificated, and figured in these columns, August 19, fig. 42, is another gem of this collection, and will shortly be in flower again. Here may be seen many nice plants of rare varieties, such as *Cattleya intermedia alba*, *C. Wagnerii*, *Lælia Perrinii alba*, the latter one of the most chaste white Orchids known, and existing only in its true form in two other collections in this country—that of Baron Schroder, and Mr. Measures of Streatham. *Viator*.

ORCHIDS AT SELWOOD, ROTHERHAM.

Selwood is the residence of G. D. Owen, Esq., who is an enthusiastic Orchid amateur, as may be judged when it is stated that five or six years ago he scarcely possessed a plant, and now he has seven or eight houses filled with some of the choicest varieties and best types in each section of this popular family. On the occasion of a recent visit, and had I seen nothing but the *Cattleya labiata alba* (true) and *C. Hardyana*, Selwood variety, I should have been amply repaid and gratified, as these are, without doubt, superb Orchids. They were exhibited at the Royal Horticultural Society's meeting on October 24 last, and deservedly received an Award of Merit. The following were also in flower at the time of my visit, eighteen plants of *Cattleya labiata*, all varying more or less in coloration and size of the flowers, and all of the best type: *Cattleya Aclandiae*, Linden's var.; *C. aurea*, some with very large and richly-coloured lips; *C. gigas*, very fine; *C. Rex*, also very good; and *Lælia marginata*. *L. Perrinii* was represented by some half-dozen plants, all of which are very good varieties; a plant of *Cœlogyne Massangeana* was carrying two spikes, with twenty-two flowers each, and two other spikes were showing for bloom; *Dendrobium chrysanthum* and *D. Dearei* were good, the latter especially being strong, healthy, and well-flowered; *Lycaste Skinneri*, *L. plana*, *L. aromatica*, *Odontoglossum Roezlii* album, *Oncidium varicosum Rogerii*, *O. ornithorhynchum*, *O. Kramerianum*, *Sophranitis grandiflora*. Amongst those not in flower, I noticed the following:—*Cattleya exoniensis*, *C. Massaiana*, *C. aurea*, *C. gigas Sanderiana*, *C. gigas imperialis*, *C. Schroderae*, *C. Backhouseiana*, *C. Reineckiana*, *C. Rex*, *C. Victoria Regina*, &c. Amongst the *Lælias* are *L. autumnalis alba*, *L. Gouldiana*, *L. anceps Sanderiana*, *L. præstans alba*, *L. purpurata* Princess May, *L. grandis tenebrosa*, *L. Schroderiana*, *L. Backhouseiana*, &c. The collection of *Dendrobiums* contain some rare species, *D. nobile Cooksoni*, *D. nobile nobiliss*, *D. Phalenopsis Schroderianum*, *D. Owenianum*, which received a First-class Certificate from the Royal Horticultural Society, 1893; *Venus*, and many hybrids, &c. There are several good plants of *Lycaste Skinneri alba*, one of which had, I am told, eighteen flowers on it last year. *Odontoglossums* are in strong force, and are remarkably healthy; *O. Edwardi*, with flower-spike 5 feet long;

O. Cervantesii, *O. Harryana*, *O. hastilabium*, *O. Phalenopsis*. *O. crispum* is in large numbers and best types, *O. Wattianum*, which received a First-class Certificate at the Manchester show last Whitsuntide; and many others are amongst them. Nearly the whole genus is represented, but time would not admit of my making note of them. Although the district is a smoky one, and heavy fogs very prevalent during the winter, every plant is in the best possible state of health, which does credit to the skilful management of Mr. Watts, the head gardener. *J. H.*

ORCHIDS AT FLAXLEY LODGE.

The small town garden belonging to F. S. Moseley, Esq. (gardener, Mr. W. Jones), in the Avenue Road, Regent's Park, has an interesting collection of Orchids, which produce a fair amount of flowers at all seasons of the year. Among the species recently in bloom were a fine plant of *Cypripedium* × *Swinburnei*, with several large flowers; *C. callosum*, *C. × Reginaldianum*, *C. × Pallas*, *C. Spicerianum*, various forms of *C. insigne*, *C. × Harrisianum*, several good *Oncidium Forbesii*, and *O. prætextum*; *Dendrobium Phalenopsis Schroderianum* and *D. bigibbum*, *Cyperorchis elegans* and *C. Mastersii*, a fine form of *Odontoglossum Uro-Skinnerii*, good pans of *Pleione Wallichiana* and *P. maculata*, various forms of *Cattleya labiata*, *Cataseum macrocarpum*, *Maxillaria picta*, *Lælia anceps*, *L. autumnalis*, *Cœlogyne Massangeana*, and different kinds of *Calanthe*. Also, among other interesting plants, *Anthurium Andreanum* and *Aristolochia gigas Sturtevantii*—a noteworthy display for a London garden in the end of November.

PHALENOPSIS INTERMEDIA VAR. PORTEI.

This plant is a supposed natural hybrid between *P. Aphrodite* and *P. rosea*. Sepals pure white, petals much larger, pure white, with a few minute specks at the base. Lip three-lobed, lateral lobes violet, with a few crimson spots and dots; central lobe ovate, deep crimson, with the point separated into two short tendrils. Crest at the junction of the lobes of the lip nearly square, depressed in the middle, deep yellow, with crimson dots. *Reichenbachia*, t. 68 (2).

DIBDIN HOUSE COLLECTION OF ORCHIDS.

The pretty gardens of Fred. G. Tautz, Esq., at Ealing, if they cannot boast such a number of houses as that which contained his famed collection at Studley House, Shepherd's Bush, can at least demonstrate that the love of Orchids is as strong as ever in their owner, and the power to cultivate them as great in his gardener, Mr. J. C. Cowley, as it was when more space was devoted to these plants in the gardens at Studley House, on leaving which Mr. Tautz dispersed his collection, except a few favourites and the young hybrids which were retained to form the nucleus of what may some day be as important a collection of Orchids as that previously got together by Mr. Tautz. But few houses at Dibdin House, at present, contain Orchids, but these are one and all as full of bright and good flowers as anyone could wish, while among the hybrid *Cypripediums* there are a few really superb things in bloom. In the first division of a lean-to range containing many showy flowers of the varieties of *Cattleya labiata*, together with spikes of *Vanda cœrulea*, are some remarkably fine *Lælia pumila præstans*, well-bloomed *Dendrobium formosum giganteum*, &c. Among other *Cypripediums* a most beautiful new hybrid is in flower. The parentage has not been recorded, but there is little doubt that it was obtained by crossing one of the noble forms of *C. insigne* of the *C. i. violaceo-punctatum* section, for which the Tautz collection was famed, with their equally famous *C. Boxalli*, which had so much white in the upper sepal. The plant in question has rather broad green leaves, the stout scape is twin-flowered, the flower now open having a fine upper sepal in which the basal-half is bright green spotted with purple, the upper half pure white with some bright purple spots on the portion above the green base. The broad

petals are yellow with a purplish tinge; the lip yellow, with a shining dark red face; the lower sepal, which is as broad as and longer than the lip, is greenish-white with a few chocolate spots. The whole flower is fine in form and superb in colour. Another hybrid of unrecorded parentage is a fine thing, which may be *C. superbiens* × *Curtisii*. It has the large lip of *C. Curtisii*, and broad petals curved downward, and somewhat resembling those of *C. × Morganiae*. Many hybrid *Cypripediums* which flower at Dibdin House, if they are not thought to be really good and distinct from anything else previously named, are simply put under the name of the nearest thing they resemble, with the addition of a × to imply that it was home-raised. But many among these would get distinguishing names in other places, and some of them would be worthy. One specially pretty flower marked *C. Harrisianum* ×, had flowers tinted over the greater part of their surface with that bright rose-crimson seen in *C. × ænanthum*. Flourishing well are the two plants of that magnificent hybrid *C. × Cowleyanum*, and in bloom are a great variety of *C. × Leeanum*, *C. Spicerianum*, *C. Hookeræ* ×, *C. insigne* × *callosum*, very distinct, though not showy; *C. callosum*, *C. niveum album*, and many other species and hybrids. On the raised staging at the front of the house are thousands of seedling hybrid *Cypripediums* of all sizes, and as such rare things as *C. Fairrieanum* and all the best varieties of the species which vary, have been used to obtain them, some beautiful and unique things must result. In the next division there is a good show of *Cattleya labiata*, *Vanda cœrulea*, *Epidendrum Godseffianum*, *Sophranitis grandiflora*, *Cypripediums*, &c., and a cool house at the end of the range of vineries is almost filled with varieties of *Cypripedium insigne*, chiefly small plants acquired out of recent importations. There is endless variety among them, and some of the plants are quite distinct from the old type. Among them are a few of the favourites brought from Studley House, and of these *C. insigne Cowleyanum* and *C. i. Studleyense* are the most beautiful and dissimilar. The former has flowers in which the yellow is very bright, and the light brown spotting in the upper sepal very evenly and closely arranged; while in the latter the spots are very large and comparatively few in number, both having a good expanse of pure white at the tip of the dorsal sepal. Orchids are in most of the other houses in more or less quantity. In the Peach-house there was a good show of *Chrysanthemums*. Outdoors a new Rose garden is in the course of making near the pretty rock garden, with its summerhouse on high ground, and rustic walk and bridge over the bog garden.

FRUIT REGISTER.

PEAR, WINTER NELIS.

This valuable Pear in use at this season has never, so far as I know, been of finer flavour nor so large. I have always thought highly of Winter Nelis as a dessert fruit at the end of the year. Our best specimens were taken from a tree growing on a west wall, and those from the east wall were not so good. Of late years the fruits of this variety has ripened prematurely and cracked, but this season none has cracked; and there is very little trace of rust. From this it may be inferred that a warm position is the most suitable for the trees. I have noticed that the blooms of Winter Nelis are more liable to injury from frost than some others; but when it escapes frost, the bloom sets so heavily that severe thinning becomes necessary. *W. A. Cook, Compton Bassett*.

CORNISH GILLIFLOWER APPLE.

This choice winter Apple should be in every garden, although many growers complain that it has been a shy bearer. It really is better for not being pruned, and the finest crop which I ever saw was on some trees which had never been pruned. *G. Macers, Marazion*.

PRIMULA FORBESII.

OUR illustration (fig. 106) shows the annual Primrose exhibited at a recent meeting of the Royal Horticultural Society by Mr. Bain, gr. to Sir Trevor Lawrence, Bart., the President. It was found in Yunnan, in the interior of China, by the Abbé Delavay, and was first described by M. Franchet, in 1886, in the *Bulletin de la Société Botanique de France*. It

HARD-WOOD GREENHOUSE PLANTS.

(Continued from p. 590.)

APHELEXIS AND PHENOCOMAS.—These two genera may be dealt with as one, although in some respect their cultivation differs, but being nearly related, and carrying similar everlasting flowers, it is found desirable to treat of their cultivation at the same

lary the case with *Aphelexis macrantha purpurea*, which is disposed to make longer growths than any other kind. To train such a plant with the shoots erect is to make it appear ridiculous in the eyes of a good plantman. In such a case the training should be performed by entwining the shoots around the sticks so as to shorten the height. In doing this the central part of the plant should be left free of any entanglement, so as to give plenty of room for the young shoots to make good progress; these issue freely from the base of every healthy example, and as they progress the older and weakened ones which may possibly have attained to 3 or 4 feet in length, can be removed as may be found necessary. *Aphelexis macrantha rosea*, on the other hand, is a much dwarfer plant and more compact in habit. The best variety of this is comparatively scarce. It is the same as that known as Bruce's variety, which was shown before the Royal Horticultural Society, when known as the "London Horticultural Society," in 1843, and under the name of *A. sesamoides rosea*. This variety has the largest flowers of any, with shorter footstalks, being the nearest to self-supporting of any of the genus. A quarter of a century ago, or somewhat more, it used to be shown at southern shows by Mr. Thomas Gilbert of Hastings, and by Mr. Samuel Hudson, of Horsted Place. Mr. Baines also had it in his collection, and Mr. Chilman, another well-known old plantsman.

Of late years it has been but little seen. I noted it, however, as small plants in Messrs. Hugh Low & Sons' exhibit at the Temple Show two years back. It would be a great pity if it were lost to commerce, being, as it is, by far the most showy variety of any. There is another form which passes under the name of *A. macrantha rosea*, but it has smaller flowers, rather deeper in colour—perhaps the growth is not so compact. This, I consider, is identical with *A. humilis*. Another excellent variety is *A. purpurea grandiflora*, which has large flowers, being intermediate in this respect between *A. macrantha purpurea* (dark purple) and *A. macrantha rosea*; it has somewhat the long straggling growth of *A. m. purpurea*. I noted a fine plant this year at the Crystal Palace May-show in excellent form. There is also a white variety, but the three named are decidedly the best varieties. *A. ericoides*, the white variety, is of dwarfer growth than this one, with smaller flowers. Every collection of hard-wooded greenhouse plants should at least possess *A. macrantha rosea* and *A. purpurea grandiflora*.

Considering the showy character of these plants, it is in a measure surprising that they are not grown more extensively. They last a long time in fresh condition after the flowers are expanded, whilst for a month previous the buds as they develop make no mean show. It is also interesting to watch their progress from the time of first showing colour. It may be thought preposterous to recommend them for cutting purposes, but I do so without the slightest hesitation.

Each flower may be taken with a good length of stem, from 8 to 10 inches, or even more, without any injury. One fact in *Aphelexis* culture is not generally known, as it bears on the cutting of the flowers. When they are cut, more often than not the stems of the flowers are taken short with the idea of not robbing the plant of any of its wood, the popular place of incision being just where the leaf-growth ceases, and the scales which protected the flowers in their earliest stages first appear. This is done under the notion that a fresh shoot will start from this point, but this is not so; the portion of woody growth left will die back to the next shoot below it, that one being already in an advanced stage. To leave this part, therefore, is useless, for it will have to be removed eventually; the better plan is to take it off with the flower attached, each one will break out easily enough at the base of the growing shoot. I have seen specimens myself in which these pieces of dead wood had been left, all to a useless purpose, making the plants look shabby and stubby. When the flowers are specially required for drying purposes, than which there is nothing better in the whole range of "everlasting" flowers, they should



FIG 106.—PRIMULA FORBESII—ANNUAL PRIMROSE: FLOWERS LILAC.

is mentioned in the *Report of the Primula Conference*, and was first exhibited in London in December, 1891, by MM. Vilmorin, Andrieux et Cie. The figure gives a good notion of the appearance of the plant. The pale lilac flowers are pretty, and arranged in whorls, the flowers in the lower whorls being expanded simultaneously with those in the upper. The habit is rather weedy, as is the case with so many annuals when cultivated. An annual Primrose is almost unique in the genus. A coloured figure is given in the *Bot. Mag.*, t. 7246.

time. *Aphelexis* is a genus of plants introduced from the Cape of Good Hope at various times between 1739 and the early part of this century. The species are, speaking generally, of a scandent growth rather than bushy. This is so much the case that they always need the support of sticks. This is probably the reason why they are not seen more frequently as small decorative plants; whilst in some gardens where tying has been followed, it has been but a poor attempt, an indication of what to avoid rather than what to practice. This is more particu-

be cut (or broken out), whilst the disc of each flower still possesses its rich golden colour. This colour will not, it is true, be fully retained, but its brightness, as compared with that of stale flowers when cut, will be decidedly advantageous. From the time the flowers begin to expand, every care must be taken not to wet them, nor should the plants then be kept in a moist atmosphere, otherwise their beauty will be quickly spoiled. A light house with no shade at all, save to prolong the freshness of the blooms when fully expanded, is the best place for them. The flowers do not open kindly during a dull or damp day, then of course no shading should be used. I have staged plants myself specimens in full flower, during a dull day, with the blooms only partially open, but after an hour's sunshine the effect would be quite different with each blossom fully expanded.

As to potting and soil, the treatment is very similar to that of hard-wooded Cape Heaths. The potting must be done in a firm substantial manner, exercising caution against excessive shifts. When arrived at specimen size, a plant, if potted well in good peat, will continue for several years in a healthy state, with the usual proviso of careful watering. The peat I prefer, is that in which the Heather thrives. This is usually thin, dark in colour, handling hard and wiry. A good addition thereto is charcoal, in pieces of the size of horse beans, or failing that, some crocks broken up fine, the object being to guard against injury to the roots by over-watering. The roots of an *Aphelexis* are delicate, more so even than those of the *Ericas*; hence this caution. Silver sand should be freely used, more so than in hard-wooded plants generally. The best time for potting is after flowering; when in warm and sunny situations the plants can stand out-of-doors or in pits, where the lights can be drawn over in case of rain. In watering, nothing beyond clear water should be used at any time.

Phœnocomma prolifera and its variety *Barnesii* are both fitting companions to the *Aphelexis*. The former flower is the earlier of the two, but the latter has the brighter-coloured blossoms. As to potting and soil, the same course should be followed, but the *Phœnocommas* will, on the whole, take more water, being of more dense and bushy growth. Starting with a young plant, pinching should be persisted in for a season or two to form a good base, and at any future time when a shoot is seen to be taking the lead. Thus a dense specimen can be formed which will be almost self-supporting. The flowers are not supported on such foot-stalks as the *Aphelexis*, fresh growths often pushing forth close up to the blooms. Sufficient wood should be taken when each flower is cut to keep the plants compact. The *Phœnocomma* forms an excellent succession to the *Aphelexis*, lasting well into August. Insects I have never known to be troublesome, but I can imagine that the mealy-bug on the *Phœnocomma* would be a nuisance. Of parasites the only probable source of harm is from mildew in damp weather during the dull season of the year. Propagation is from cuttings only, and should be proceeded with early in the spring, but as root-action in this case is rather slow some considerable care and patience is necessary to ensure a successful strike. The temperature of an ordinary greenhouse will suit both, but overcrowding should be studiously avoided, the plants being kept as near to the glass as possible. H.

VEGETABLES.

SEAKALE PLANTING.

Roots of Seakale will be lifted pretty generally in gardens during the present and next month, and thongs prepared for planting sets to be put out at once into well manured, trenched soil; or laid with the right end upwards in boxes or beds of loamy soil in the open and covered with a little litter to exclude frost, planting them in the spring. Seakale being usually grown in lines for forcing in Mushroom houses and other places, it needs little to be said about this method, beyond stating the distance

between the sets, which may be 9 inches to 1 foot in the rows, and 2 feet between the latter. Where Seakale is forced in the ground by means of pots and manure, beds and alleys each of 4 feet wide may be pegged out, and two lines of clumps planted on each bed. The clump should consist of three sets each, put in a triangle, having a side of 9 inches or 1 foot, the distance depending on the size of the pots that will be used to cover them. The clumps should be 2 feet apart each way. It is a plan that cannot be recommended for small gardens, or those which have not a large supply of leaves, stable manure, and a good staff of gardeners. O. O.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By B. WADDS, Gardener, Birdsall Gardens, York.

SWEET-SCENTED CAPE PELARGONIUMS.—These plants, if they are to be kept in good condition for winter cutting, a purpose for which they have no equal, should have careful attention paid to the watering, or the leaves will assume a yellow colour, and drop. It is best, therefore, to keep them on the dry side, and to see that the drainage is in good order. Shift the position of the pots, and clean the plants often, affording abundance of air, with a small amount of fire-heat in dull or cold weather, and keep them in a clean condition by fumigation. A temperature of 45° by night, and 50° to 60° by day, suits them. The best varieties for cutting purposes are *Citriodorum crispum*, *Lady Scarborough*, and the large Oak-leaved varieties.

HERBACEOUS CALCEOLARIAS.—Seedlings raised in August and grown on in 60's should be ready for a shift into 5 or 6-inch pots, which had best be performed before the pots become full of roots, and before the plants are drawn in any way. The foliage at this stage ought to be strong, and of a good dark green colour. The best soil for them is a rich loam and well-rotted leaf-mould, used in about equal parts, and rotted dry cow or sheep-dung, with plenty of rough sand. The drainage should be ample, moss or dry cow-dung being placed on the crocks; the plants must not be dry when potted. Place them in a cool airy house, on a shelf or table where they can be shaded from bright sunshine; water them carefully, and keep green-fly from them, but avoid fumigating the plants in a very young state, as they are often injured by so doing, rather dipping them in, or syringing them with, *Quassia*-water. A temperature of about 40° by night and 45° to 50° by day will suit them, and they should be kept as near to the roof-glass as possible, affording plenty of space between the plants, and air abundantly.

GREENHOUSE, HARDWOODED, AND NEW HOLLAND PLANTS.—The present is a good time to train and clean the stock of *Azalea indica* plants, and any of the early-flowering varieties that may be well set with forward buds, such as *A. amena*, *A. Deutsche Perle*, *A. Reine des Roses*, and *A. Raphael* may be placed in the forcing or other warm house. Great care will be required in watering large specimens of *Azaleas* at this season, and before everything, see that the drainage of the pots is in order; and as a guide to watering try the weight of the pots at times, a rap with the knuckles not being always a good test of the state of the soil. When watering is done it should be thorough. Allow the yellow foliage to fall without pulling it, a gentle shaking when watering them may be given to bring down the leaves. If troubled with thrips, fumigation may be done now without injury. Air must be admitted during mild weather freely, the temperature of the house ranging from 40° to 45° by night, 50° by day. The collection of *Ericas* and *Epacris* should be well looked after, the drainage of the pots examined, and watering done with thoroughness when water is needed. At this season mildew is troublesome, and sulphur should be applied as it is noticed. The staking and training of such species and varieties that require it should be proceeded with, using dead sticks green painted. *Erica intermedia*, *E. hymalis*, and *E. autumnalis*, are most useful plants for winter decorative purposes, and they can be easily brought into flower in a warm-house, lasting a long time in good condition in a cool-house. The temperature of the *Erica*-house should now range from 40° by night, to 45° or 50° by day. Ventilate well during fine weather, but avoid admitting cold, frosty air. Hard-wooded plants, such as *Acrophyllum venosum*, *Aphelexis macrantha*, *A. purpurea*, *Boronia*, *Darwinia*, *Acrophyllum gracile*, *Diosmas*, *Monochætum ensiferum*, *Phœno-*

coma prolifera, *P. Barnesii*, *Pimeleas*, *Tremandra verticillata*, &c., should be thoroughly examined, and the shoots trained. These plants will require much care in watering at this season, and the best positions should be given to all the choice specimens, elevating them on pots above the surrounding plants, and as near to the roof-glass as may be. As regards air, it should be afforded almost as freely as to Heaths. The floors of hard-wooded plant- and *Erica*-houses should be kept dry, mopping up the water after each watering of the plants, which is an operation that should never be done after mid-day. The hot-water apparatus may be used on dull days, with much air on, and advantage taken of bright days to thoroughly air the house. The temperatures mentioned for *Azaleas* will suit these plants.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

SEASONABLE HINTS.—The weather during November having been trying to Orchids generally, and the occurrence this year of sharp frosts and cold rough weather have caused much artificial heat to be made use of, together with but a small amount of ventilation. Careful watching will therefore be especially necessary with *Odontoglossum crispum* and *O. vexillarium*, these being more or less subject to being infested with injurious insects. If the yellow thrips make their appearance, dip the plants in an insecticide, but do not fumigate them with tobacco, these soft-leaved plants suffering more from it than from the insects themselves. The best and safest substance, and one that I use generally, is a weak mixture of Fir-tree oil. The use of the thanatophore covers the leaves with dew, which, getting into the axils, and finding its way into the hiding-places of thrips, is very effective, doing no harm whatever to the plants, and is clean and safe in use. In dipping Orchids, the roots get wetted with the substance used and are killed, together with the sphagnum moss, and as sure as the latter decays so does the plant. The usual cleaning of the houses may now be carried out, cleanliness in Orchid culture being one of the chief points. The glass, woodwork stages, &c., should be washed with hot soapsuds, and the walls limewashed. After using soapsuds, rinsing with clean water is always necessary so far as the glass is concerned. The pots and pans should be made clean outside, and re-arranged. Follow this by sponging the leaves of the plants carefully, especially be careful with the *Cattleyas* which have newly-made sheaths that are easily injured or broken off, often preventing the flower-spike coming up, but not in all cases. Be sure to avoid stripping-off the outer sheathing of the pseudobulbs, which in my opinion causes the plants to look unsightly, and is doubtless injurious, although it must sometimes be done in a moderate degree to eradicate scale. *Anguloa Clowesii*, *A. eburnea*, *A. Ruckeri*, *A. uniflora* that have been grown during the summer at the cool end of the stove or *Cattleya*-house should by this time be well matured, having had water gradually withheld from them. They need but little water for some time, and may be removed into a much cooler house. I rest these plants in the *Dendrobium*-house from this time until growth recommences. *Vanda teres* should now be kept on the dry side for a time, and given a light position; very little water will be needed after this, but the plants should not become so dry as to cause shrivelling. *Vanda Hookeriana* and *Renanthera coccinea* need the same kind of treatment, otherwise the flowers will be few. *Lycaste Skinneri* and *L. S. alba* are opening their first blossoms, and should not become dry at the roots, otherwise the flowers will be small and lacking in substance, besides exhausting the plants. Weak manure-water should be applied at alternate waterings to these plants if they are healthy and possess plenty of roots, otherwise afford clean water only.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

LIQUID MANURE.—In the event of much rain falling, the manure-tank, if rain-water be conducted into it, should not be allowed to overflow and run to waste, when it is known that Strawberry plants (excepting where newly planted), Raspberry plantations, and Black Currant bushes, are much benefited by having liberal waterings of liquid-manure even during the winter when it is plentiful in most places. Old Pear and Plum trees planted against the walls of buildings, or solitary specimens on the lawn or in odd corners, and which may have

exhausted the ground of its fertility, also will be much benefited by liquid-manure of some kind, even the drainings from hot-beds, if it can be caught in tubs sunk below the level of the ground, are of service. Previous to applying manure in the liquid form, the soil if hard should be broken up, for unless the liquid reach the subsoil, in good quantity, little benefit will accrue to the trees. Where trees are growing on turf, the effects of a moderate quantity only will be noticeable by the earlier and heavier yield of grass. Yet this will not benefit the tree, and unless a large quantity is afforded, the labour entailed, so far as the tree is concerned, is wasted. Rainy weather, which usually stops pruning, &c., affords opportunities for carrying out this kind of work.

THE ORCHARD : TOP DRESSING.—That orchard trees are much benefited by being afforded suitable top-dressings, I have full proof in the orchard under my charge at this place. The soil of this orchard is of the poorest kind, light and gravelly. For several past years I have afforded the land a yearly top-dressing of very strong loam, almost approaching clay, and from these trees finer fruit is now obtained than from bushes of the same varieties planted in the kitchen garden. Top-dressings afforded early in the winter get pulverised by frost and rain, and the earth-worms carry some of the nutriment contained in it to the roots. Any kinds of strong loam or clay form a suitable top-dressing for light soils. Where the staple is strong loam or is clayey, top-dressings of burnt earth (ballast), or charred garden refuse will attract some of the roots to the surface, and therefore, into a more fertile medium benefiting growth and the fruit. Chalk, in districts where it is to be obtained, is a valuable dressing for cold heavy land. For orchards of large extent, where the top-dressings will have to be got on the land by horse labour, preparations should be made to begin the hauling directly the ground is frozen sufficiently hard to carry a horse and cart.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buzzed Park, Uckfield.

HINTS ON URGENT WORK.—December is usually a cold month, in which all growth outdoors is brought to a standstill; but it affords opportunity in open weather to prepare plots for sowing and planting, digging and trenching being pushed on with whenever the soil is not too wet or sticky. Doing this kind of work early in the winter makes the gardener independent of the state of the weather in mid and late winter. The manure that was spread on the beds of Asparagus should be stirred about and broken to pieces; the rougher parts being left to be raked off in the early spring. By acting in this manner the utmost amount of nutriment is extracted from the manure.

HORSE RADISH deserves more attention than it usually obtains, and at this season the leaves having mostly died down, the roots may be lifted, getting out every bit by trenching the land. The long thin roots should be got out entire, these making the best sets. When all is lifted, the ground should be well manured and re-trenched, putting the manure into the bottom of the trenches. Having waited some weeks for the land to settle, holes should be made with a long dibber to a depth of 1½ foot or more if the land allows of it. The sets may be put in at 6 inches apart, or more if space is no object, letting them fall right end upwards to the actual bottom of the holes. The space between the rows may be 2 feet. If there are not enough long root-sets, the crowns may be taken off those reserved for use and planted, all the buds except the central one being removed. It is good practice to fill up the holes with some rich soil; and should the soil be too shallow to allow of perpendicular holes being made, make them in slanting fashion, filling in as before advised. Roots for use should be laid in a cool border facing north, and covered with litter.

CELERY.—The latest successions should be finally earthed up when the soil is not wet, and doing the work well, so as to exclude frost as far as possible from the stems. The ground whence early crops have been lifted should be trenched, and left rough till wanted.

SEAKALE.—"Thongs" large enough for furnishing sets for planting should be collected as the roots are lifted for forcing, cutting them into 4-inch lengths, and making a slanting cut at the lower end and a straight one at the top, so as to be able to distinguish the top from the bottom of the set. These may be planted at once, or left laid in soil till

the end of the winter. Seakale ground can scarcely be too rich, and it is always best if it have not been recently cropped with any of the Brassica family. Planting should be done as digging proceeds. The sets may be put in at 6 inches apart in the rows, or even closer, if sufficient ground be not available at present, transplanting each intermediate root in the spring; the rows, however, should not be nearer to each other than 2 feet, for it is much better to have a smaller number of good crowns than a lot of inferior ones.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES.—It is of importance to have the soil in which early Vines are being started in a healthily moist state, and to insure that this is the case, it should be afforded water at a temperature of 80° or 85° in sufficient quantity to wet it thoroughly; the water used for syringing purposes should be as warm or warmer. Protection should now be afforded the roots of mid-season Vines; and if the roots of any Vine are near the surface, they should be mulched, to preserve them from frost. When forcing is begun, the warmth of the Vine border should be not less than 60°. Ripe Grapes hanging on the Vines should be examined twice a week for decaying berries, and every leaf removed from the vine as soon as it falls. If plants must be placed in theinery, the Grapes should be cut and bottled, keeping them in a dry cool room. Grapes keep in better condition if before they are cut the leaves drop. An even temperature of 45° to 50° should be maintained.

THE PEACH HOUSE.—Those houses which have been already closed, should be kept at a very even temperature, affording air to the trees when the warmth has risen to 55° by sunheat. In sunless weather 45° to 50° may not be exceeded for the present. Keep the house moist, this is very essential, but do not allow the air either by day or night to become stagnant, let there be some motion in it, if ever so little. When water becomes necessary, let it be afforded in a pretty warm state of 80° to 85°, and the state of the border should be examined at short intervals of time with a probe-stake, for nothing is so certain to lead to fruit-bud dropping as dryness of the soil.

FIGS.—Trees in pots should be plunged in litter, kept in a shed where frost cannot harm till forcing time arrives. If the houses in which Fig trees are planted-out are used for salad plants, the roots of the Figs are liable to suffer from souring of the soil, and the upper portion should be removed before growth begins. All pruning of Figs should now be finished, and ought to consist of merely thinning out of useless and misplaced shoots. Early Figs, if treated like Peaches, do well. If pot-Figs are plunged in tanners' bark, leaves, or even in a shallow bed of leaves over water-pipes, the heat should not exceed 80°, and at the first 70° is sufficiently high.

CUCUMBERS.—The young shoots must be regularly stopped at the points, and much of the young fruit cut off before the plants are weakened. Water carefully, and afford air whenever it can be done safely, and keep up a temperature of 65° to 70°.

THE FLOWER GARDEN.

By T. H. CRASP.

THE GLOBE FLOWER (TROLLIUS).—These showy plants are among the best and most distinct of spring-flowering hardy perennials, and very useful plants for planting in moist parts of borders, &c., where other plants would not flourish. The present is by far the best time of the year for increasing and replanting Trolliuses. The plants delight in a rich moist soil. The plant is very graceful and ornamental, and the flowers are nice for indoor decoration, lasting a long time after being cut. The long stems and graceful foliage make them capital flowers for putting in vases. The finest for garden decoration are *T. europæus*, *T. asiaticus*, *T. napellifolius*, *T. Govani* fl.-pl.

TREE PÆONIES.—These are most useful and beautiful plants, grown either as isolated specimens on the lawn, or mixed with other plants in the herbaceous border. The plants prefer an open situation, exposed to the afternoon sun, for the due ripening of the wood. They need protection from north and north-east winds, and from the early morning sun, which spoils their blooms on frosty mornings if it shine on them. Pæonies will grow in any fairly

good garden soil, if it be not shallow or very dry. The present is a good time to plant them; and as the varieties are numerous and beautiful, space does not serve for the mention of particular varieties.

CLIMBERS.—The pruning of some of the deciduous climbers on walls and trellises may be proceeded with; avoiding too much neatness and stiff training which are undesirable in climbers. The Clematis, Lonicera, Passiflora which flower on the young shoots, should be taken in hand first, namely, those of the lanuginosa type, of which there are many varieties, some flowering from June to September, and others from July to October. A few of the former are Alba magna, Blue Gem, Mrs. Moore, Princess of Wales; and of the latter lanuginosa and its several varieties, as candida, nivea, pallida, violacea, Adeline Patti, Fairy Queen, Forget-me-Not, Lady Caroline Neville, Modèle, and many more. Clematis Viticella varieties bloom also on the young wood, and may be pruned at this season. C. Jackmani is another, consisting of many fine varieties, which blooms on the summer shoots. Those Clematises which flower on old wood, and must therefore get their pruning after blooming is past, are those of the Florida section, including such varieties as J. Gould Veitch, Sieboldi, Snowflake, Unique, &c., and C. patens and its varieties, of which we name Mrs. Quilter, Marie, Maud, Maid of Kent, Charles Noble, atro-purpurea, and Calypso. Tea Roses should have their long shoots tied in, but the pruning part should be left till February. The long flowering-shoots of Banksia Roses and Chimonanthus fragrans should be tied in, but the pruning should not take place till after flowering.

THE APIARY.

By EXPERT.

WIDE METAL ENDS FOR SHALLOW FRAMES.—A wide metal end, specially made for use on shallow frames, will shortly be in the market. The advisability of spacing these frames in surplus chambers at a greater distance apart than when standard frames are used, namely, half an inch, has been suggested from time to time, and, indeed, already adopted by several of our leading bee-keepers. The subject was brought up for discussion at a recent meeting of the British Bee-keepers' Association, and a resolution to the following effect was put and carried almost unanimously:—"That in the opinion of the majority present at this meeting, it is advantageous to work for combs of 2 inches width in shallow frames." The new metal ends, therefore, will have a shoulder projecting half an inch instead of a quarter, as made for the ordinary standard frame, thus allowing eight frames, spaced 1 inch apart, to take the place of ten with the old distance of half an inch between. It may be mentioned that the standard shallow frame is precisely similar to the ordinary standard in all respects, except that the depth is 5½ inches, instead of 8½ inches. The principal advantages claimed for them are, that the hive is cooled to the least possible extent when they are first put on, so that the bees are enabled to commence work earlier in the surplus chambers; that they are better filled, and more evenly sealed; consequently, the cappings can be more easily sliced off with the uncapping-knife. When spaced an inch apart, they are filled with honey with less labour to the bees, because less wax has to be provided than in the deeper frame. When in the extractor, there is no danger of a breakdown, as there is greater rigidity of the comb, and thinner sheets of foundation can be used at the start off. A shallow frame, worked as described with the wide-ends, will weigh over 6 lb. when full of honey, whereas an ordinary standard frame in a like condition will only weigh about 5 lb., with a much greater expenditure of wax. As the ends will be of the well-known W. B. C. pattern, it will be possible by shifting every other one back, to reduce to the ordinary space, should it be required to do so, on account of a diminishing honey-flow, or for any other reason.

DOUBLE NUCLEUS HIVES.—Nucleus hives made to hold two colonies will be found to be a great advantage when the time comes round again to use such things. They should be made to hold eight frames, which are divided in the centre with a thin division-board, perforated, if preferred, as on the Wells' system. The entrances should be at each end. Two nuclei in a hive of this description would no doubt winter perfectly, and spare queens could be thus kept till the following spring, at which time they are most valuable, and so difficult to obtain.

EDITORIAL NOTICES.

Local News.—Correspondents will greatly oblige by sending the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

THURSDAY, DEC. 7 { National Rose Society: Annual Dinner at the Hotel Windsor, at 6 P.M.

SHOW.

TUESDAY, DEC. 5 { National Chrysanthemum Society. Winter Exhibition, Royal Aquarium, Westminster (3 days).

SALES.

MONDAY, DEC. 4 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Plants from Belgium, Ferns, Standard and Dwarf Roses, and Hardy Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs, Liliums, &c., at Stevens' Rooms.

TUESDAY, DEC. 5 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Special Sale of Hardy Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 6 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Azaleas, Camellias, Palms, &c., from Ghent, Roses, Border Plants, and Dutch Bulbs, Liliums, &c., at Stevens' Rooms.

THURSDAY, DEC. 7 { Great Sale of Japanese Lilies, Begonias, Plants from Belgium, Standard and Dwarf Roses, and Dutch Bulbs, at Protheroe & Morris' Rooms.
Dutch Bulbs, Liliums, &c., at Stevens' Rooms.

FRIDAY, DEC. 8 { Imported and Established Orchids at Protheroe & Morris' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41° 2.

Allotments in Parishes.

THERE are few points in the Parish Councils Bill that are creating more interest in rural districts than the clause which relates to the provision of garden allotments. Almost wonderful is the growth of the allotment movement, and under the new county dispensation of technical education it is rapidly expanding, and will continue to expand for a long time. It is very obvious, that to furnish instruction in counties in horticulture is of very little value, unless effort be made to enable this instruction to be put to practical use, and that means to that end can, in a very large degree, be furnished through the agency of the parish councils, when established, there can be no doubt. Very much of the value of these councils' powers will hinge on the retention of the word "compulsorily" in the particular clause, though here subject to the sanction of the Local Government Board, it is obvious that unless some such compulsory power to "hire" (not purchase) land for allotments be granted to parish councils, they will, in their efforts to obtain suitable ground, be driven from pillar to post in the most annoying way. Whilst no duly elected public body would, under any circumstances, suggest confiscation, it is equally certain that the Local Government Board would always act the part of a just arbitrator. When, however, the question arises as to whether the needs, interests, and requirements of, perhaps fifty, perhaps a hundred, decent workers are to be of weight or not as against one person's antagonism, there should be little

doubt as to which side should kick the beam. We have already in existence several Allotment Acts. Still, the number of allotments that these have helped to furnish is relatively few; they have remained largely dead letters, through the lack of the needful compulsory powers, and also to some extent because the various local sanitary authorities working the Acts had generally little sympathy with allotments. By this time all broad-minded and honourable members of sanitary authorities, and especially of the County Councils, can hardly do otherwise than recognise the absolute need there is for this new force; and when it has been in operation a few years, even antagonists now will then admit that is a wise and valuable force.

The same need has already been found in relation to the Small Holdings Bill of the late Government; but with that we have nothing special to do now. It is worth while saying, however, that where allotments have existed, and applicants under that Act for holdings have been steady industrious tenants, showing great capacity in cultivation and cropping, their demands not only merit but should receive the fullest and kindest consideration. Where no allotments exist, it is not too much to suggest that these should be first compulsorily provided by the new parish councils, and then they should have power to advance the best workers into larger holdings some three or five years later, if they so desire. We should in that way promote a means whereby the land would be held under greatly altered conditions, and in some way assist to realise that pastoral time "when every rood of ground sustained its man." Very naturally the worker class in rural parishes, those most desirous of securing allotments, are concerned as to the threatened antagonism of the clergy, as manifested in some directions. That form of objection is dying out as the Bill is better understood. As evidence of that, we may mention a short interview we had the other day with a most earnest working vicar of a rural parish in Surrey who was positively anxious that the word compulsory in the Bill should be retained, because he felt that without such power the clause might be valueless. He is one of those genial warm-hearted men who knows how to make friends with everybody, and has amongst his parochial helpers some working men who are opposed to him in politics. Such a man would be certain of election on to the Parish Council, and very probably would be its chairman. Why is he so anxious about allotments?—because those already in existence in his parish, and so much prized by the holders, hang as a rule on a thread. They may be taken from the workers almost at any moment, and their position is far from being the best. He is profoundly concerned for the welfare of the allotment-holders, hence his deep interest in the Parish Councils Bill. Are there not numbers of clergy in the kingdom who will be as ready to welcome the Act, and assist to work it in the interests of their poorer neighbours? We think so, just as there are thousands of workers who are anxiously looking for the passage of the Act and may find it in the matter of getting allotments a saving grace. Even yet we hear people, must we add very ignorant people, assert that unless the rent of allotments is nominal they cannot be made to pay. That objection is best answered by allotment-holders themselves. If it were so, however, why this incessant demand for allotments? But the rent value of allotments is a matter to be determined by local conditions, situation, soil, accessibility, &c.; for whilst some ground hardly possesses prairie

value, other land may be found of the very best. Now, 1s. per rod, 20s. per annum for plots of one-eighth of an acre, is esteemed a very high rent, and yet at such a place as Richmond, in Surrey, that sum is paid cheerfully. There the splendid area of 20 acres, comprising 196 plots of diverse dimensions, is entirely occupied. It is provided by the Richmond Corporation as the sanitary authority, the ground being hired from the Crown at a high rental. This land was for very many years under market garden cultivation; but whilst that seemed to comprise ample ploughings, liberal manurings, and frequent croppings, it was never worked more than 12 inches in depth. The subsoil remains to-day, where yet unbroken, as hard and virgin as it was 100 years ago. We saw these allotments cropped for the first time in the summer; they were in every case well done, though owing to the shallowness of the soil suffering somewhat, as elsewhere, from the drought. We saw them again a short time since, when without exception they were as full as could be of growing, indeed, first-rate winter crops of all descriptions. Probably each 20 rods had upon it 40s. worth of winter crops, and that is perhaps a low estimate. Better could hardly have been found in any garden. Every effort was being made to store manure for use as the ground was cleared, and where there was space trenching and manuring had already begun. The workers are strangely enough nearly all engaged in some form of town occupation, knew little or nothing of gardening beforehand, some had hardly ever handled a spade, and yet their first year's results were worthy of high commendation. All honour to the Richmond Corporation. May hundreds of similar authorities be induced to go and do likewise.

STANHOPEA LOWII.—Our illustration (fig. 107, p. 689) gives a representation of this beautiful new plant, which first flowered with the importers of the species, Messrs. HUGH LOW of Clapton, in December, 1892. It was shown in flower quite recently, at the Royal Horticultural Society's meeting on Nov. 14, when it received an Award of Merit. As will be seen in the figure, it differs from the usual forms of Stanhopea as seen in gardens, in being hornless, in that respect somewhat approaching *S. ecoriata* and *S. eburnea*, which has inconspicuous horns at the base of the lip, and in being identical in form only with *S. Amesiana*, a species also imported by Messrs. HUGH LOW & Co., and which may perhaps be regarded as a white form of the species under notice. The flowers of *S. Lowii* have sepals and petals of a whitish-buff colour; the petals obscurely marked with small reddish dots. The labellum is of ivory-whiteness, with some purple lines or blotches in the interior of the hypophyll. Stanhopeas are not in fashion just now, or this would have been an introduction to have caused a great stir among Orchid-growers. Years ago the fine collections of Orchids staged at the famed Chiswick shows of the Royal Horticultural Society, did not disdain to include a large specimen of *S. tigrina*, *S. Devonienis*, or *S. oculata*, and whenever exhibited the Stanhopeas came in for a fair share of admiration. Even now when seen in flower in our Orchid-houses a Stanhopea arrests attention more than many costly species which have not so singular a form, consequently they are tolerated in many places, rather than cultivated in the manner which their extraordinary showy and fragrant, though rather fugacious flowers, would warrant. *S. Lowii* is a New Granadan species, and like all the other Stanhopeas should be grown in a basket, in order that its descending flowers may be protruded without hindrance. It was described by ROLFE in *The Kew Bulletin*, 1893, p. 63, and in *The Orchid Review*, i, p. 177, fig. 12.

LINNEAN SOCIETY.—At the meeting on Thursday, November 16, Prof. STEWART, President, in the chair, Messrs. R. ASSHETON, H. N. BERNARD, and W. H. WILKINSON were admitted Fellows. Mr. J. H. VEITCH exhibited a large and interesting collection of economic and other vegetable products of Japan, recently brought by him from that

ably large specimen of the Giant Puff-ball, *Lycoperdon giganteum*, which he had gathered at Catford Bridge, and which, in the opinion of botanists present, was above the usual size. On behalf of the Rev. Prebendary GORDON, M.A., the Secretary exhibited a plant of *Veronica salicifolia* of New Zealand, found growing in Langland's Bay, Mumbles, Swan-

ever to the primary cause of any modification of structure (*Animals and Plants*, &c., vol. ii., p. 272); 2, that modifications of structure are due to the direct action of the environment (*vide* DARWIN, WEISMANN, SPENCER, &c.); this always results in "definite variations," by which Mr. DARWIN signifies 3, that all or nearly all the individuals become



FIG. 107.—*STANHOPEA LOWII*: FLOWERS IVORY-WHITE. (SEE P. 688.)

country, and described the various uses to which different kinds of wood, fibre, grass, &c., were applied for domestic purposes; as also the way in which various Seaweeds were collected and prepared for food. As the vegetable product was in every case labelled with the scientific name of the plant from which it was prepared, the series was a most instructive one, and a hearty vote of thanks was accorded to the exhibitor. Mr. A. G. RENSHAW exhibited a remark-

able specimen of the Giant Puff-ball, *Lycoperdon giganteum*, which he had gathered at Catford Bridge, and which, in the opinion of botanists present, was above the usual size. On behalf of the Rev. Prebendary GORDON, M.A., the Secretary exhibited a plant of *Veronica salicifolia* of New Zealand, found growing in Langland's Bay, Mumbles, Swan-

modified in the same way (*Origin of Species*, 6th ed., p. 106), and consequently, 4, that "a new variety would be produced without the aid of natural selection" (*Animals and Plants*, ii., 271; *Origin of Species*, pp. 72–175). Mr. HENSLOW showed, 1, that all the species constituting the peculiar *facies* of a desert flora are the direct result of their climatic conditions; 2, that these peculiarities are in nearly all cases of the utmost benefit to the plants, such as the hardening

of the tissues, the reduction of parenchyma, the minute size of the leaves, the dense clothing of hair, a thick cuticle, the presence of wax, storage of water tissues, &c.; but, 3, these features are just those which systematists utilise as descriptive characters of varieties and species. Mr. HENSLOW observed that by DARWIN'S assuming that "indefinite variations" which are characteristic of cultivation were equally so in nature, he reasonably required natural selection to correspond with artificial selection; but that assumption he believed to be erroneous. For experiments proved that by sowing seeds in a very different medium, all the seedlings vary in the same direction, viz., that of adaptation to the new environment, verifying Mr. HERBERT SPENCER'S statement that "under new conditions the organism immediately begins to undergo certain changes in structure fitting it for its new conditions." The conclusion is thus arrived at which is expressed in the title of this paper. The functions of natural selection therefore become limited as follows: 1, the survival of the constitutionally strongest amongst seedlings; 2, delimitation of species, by the non-reproduction of intermediate forms; 3, the geographical distribution of plants by self-adaptation. An interesting discussion followed, in which Professor REYNOLDS GREEN, the Rev. Dr. KLEIN, Mr. PERRY COSTE, and others took part.

—An evening meeting will be held on December 7, 1893, at 8 P.M., when the following papers will be read:—I. "Catalogue of the described Neuroptera odonata (Dragon Flies) of Ceylon, with description of new species," by W. F. KIRBY, F.L.S., &c. II. "On the cause of the fall of the Corolla in *Verbascum*," by Signor U. MARTELLI.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY: Floral Committee, November 11.—The committee awarded First-class Certificates to Messrs. E. H. KRELAGE & SON of Haarlem, for *Lilium nepalense*, D. Don (insufficiently-known plant); *Richardia Rehmanni* (new plant); to the Botanical Garden of Amsterdam, for *Peperomia metallica*, Lind. et Rod. (new plant). Second-class Certificates to Messrs. E. H. KRELAGE & SON of Haarlem, for *Eucharis Lowi*, Bkr. (new plant); to the Botanical Garden of Amsterdam, for *Tropaeolum Lobbianum*, Spitzf. fol. var. (new plant); to *Abutilon hybridum* Souvenir de Bonn (new plant).

TECOMA SMITHII.—In the account we gave of this beautiful plant in our last issue, we inadvertently omitted to state that it was introduced from South Australia by Mr. W. BULL in 1889, and finds a place in his catalogue for 1889.

CHRYSANTHEMUM SHOW AT BECCLES.—The fourth annual show of the Beccles and district Chrysanthemum Society was held in the Town Hall on Wednesday, November 22, and following day. The exhibition was an excellent one in every way, entries being numerous, and plants and cut blooms of great merit.

PEARS ON WARM WALLS.—In the generality of seasons there are certain varieties of the Pear which, even when planted on walls having warm aspects, seldom produce fruits that can be called "nice eating." Such are all of the *Crassane* race, *Beurré Rance*, *Jean de Witte*, *Alexandre Lambre*, a Pear of Van Mons' raising, and said to be good in Belgium; *Bergamotte d'Automne*, an October and November Pear, but not usually attaining perfection in this country; *Bergamotte d'Esperen*, a very late variety, of fine quality in good years; *Bezi Mai*, another of Van Mons'; *Beurré Bosc*, B. de Jonghe, an excellent Pear in good seasons, and by some liked better than *Marie Louise*; and *Beurré Langlier*. The above are considered good varieties, but they do not always succeed in these islands, and it would be of interest to our readers if correspondents would give their experience of 1893.

NICARAGUA.—In the spring of the present year our valued correspondent, Mr. J. H. HART, of Trinidad, visited Nicaragua for the purpose of inspecting

the Cocoa plantations, the Sugar factories, and Coffee estates. Mr. HART tells us that he had little opportunity for collecting, but that the flora of the country is almost identical with that of the West Indies.

GUNNERAS.—Of the curious genus *Gunnera*, concerning which Mr. BURBRIDGE has an interesting article on p. 681, there are about twenty species. Not all have such gigantic leaves as those of the plants to which he alludes—on the contrary, *G. cordifolia*, from Tasmania, has spatulate Daisy-like leaves; *G. prorepens*, from New Zealand, has small leaves raised on very long stalks; *G. magellanica*, from the Falkland Isles, has leaves like those of the Marsh Marigold (*Caltha*); *G. lobata*, of Cape Horn, reminds one, in the shape of the leaf of *Geranium rotundifolium*. Another interesting point is the singular geographical distribution of the species. There are none in Europe, northern Asia, or North America; one is recorded from the Cape of Good Hope, one from Java and the Philippine Islands, one from Tasmania, five from New Zealand, one from the Sandwich Islands, eleven from South America, including one from Brazil, one from New Granada, five from Chili, two from Juan Fernandez, two from Magellan, including the Falkland Islands. It would therefore seem to be an essentially southern genus, having its headquarters in Chili, but creeping up to New Granada and Brazil, and extending laterally to the Cape of Good Hope, New Zealand, and Tasmania. There is some evidence to show that the genus is represented in Abyssinia (*G. perpensa*) and perhaps in Mexico. Another feature which gives rise to speculation is the marked representation in islands, as will be seen from what has been previously stated. Its presence in Java and in the Sandwich Islands is mysterious. A valuable note on the genus from the pen of Mr. J. G. BAKER will be found in our columns, July 3, 1886.

THE ORCHIDÉENNE.—A Diploma of Honour, à l'unanimité, was awarded to M. Alfred Bleu, of Paris, for a new acquisition, *Lælia juvenilis*, a hybrid between *Perrinii* and *Pinelli*; the divisions of the flower were a beautiful lilacy-rose. Diplomas of Honour were allotted for *Cattleya parthenia autumnalis aurea*, the flower pale creamy-white, very distinct-looking; *Lælio-Cattleya amœna superba*, hybrid between *Cattleya Loddigesi* and *Lælia Perrinii*, the divisions of the flower lilac, the lip creamy-white, bordered with purple—both these fine novelties were also from M. Bleu. M. Van Imshoort staged a new *Cattleya*, *C. Imshoortiana*, L. Lind. et Cogn., exceedingly curious, and described in the last number of the *Journal des Orchidées*. A fine *Cattleya labiata* from M. Linden obtained a First-class Certificate of Merit; the divisions of the flower were large, and of an exquisite rosy tint. M. Treyeran won the same distinction *par acclamation*, with a *Lælia præstans* of surprising beauty; the divisions of the flower were of unusual size, velvety, and of an exceedingly lovely colour. M. Linden showed a fine lot of *Cypripedium insigne montanum*, a remarkable *Cochlidia Noetzi*, with large and beautiful flowers of a charming colour; *Aërides angustianum*, with two clusters of great beauty; *Oncidium tigrinum*, with unusually dark blooms, the divisions of the flower deeply coloured, the lip of large sulphur-yellow, very distinctive. M. Madon staged a capital *Cypripedium insigne montanum*; M. de Lansberghe, a plant of *Cypripedium philippinense*, with six blooms; M. Van Imshoort, a fine well-flowered example of *Cymbidium affine*; and M. Linden, a delightful variety of *Cirrhopetalum Amesianum*.

"THE SILVA OF NORTH AMERICA."—The fifth volume of this superb work is now published (Boston and New York: HOUGHTON, MIFFLIN & Co.). It is dedicated to M. F. L. OLMSTED, and comprises a full description, with illustrations of the trees belonging to twelve orders, so far as they are represented in the United States, thus bringing the work up to the Sapotaceæ. We shall take an early opportunity of alluding to the work in detail, but in the mean-

time we may congratulate Professor SARGENT, not only on the excellence of his work, but upon the regularity of its publication.

DEVON AND EXETER GARDENERS' ASSOCIATION.—At the meeting of this Association at the Guildhall on Wednesday evening, November 22, Mr. HILL, of Pinhoe, presiding, Mr. GEORGE LANSDALE opened a discussion on "The Recent Shows." He remarked, that in his opinion the recent Chrysanthemum show in Exeter was second to none in the West of England. Schedules of the forthcoming private show of Hyacinths, Tulips, Anemones, Primulas, Primroses, Auriculas, and other spring-flowering plants, which has been fixed for Wednesday, March 21, were distributed.

THE ROYAL GARDENERS' ORPHAN FUND.—A well-attended meeting of the committee took place at the Horticultural Club, on the 24th ult., WILLIAM MARSHALL, Esq., presiding. The following special receipts were announced: proceeds of a concert by the Kingston Gardeners' Society, per W. Furze, Esq., £21 13s. 6d., at the opening of the gardens at Ketton Hall, Stamford, to the public, per Mr. W. H. Divers, £2 6s. 5d. Sale of fruit at a fruit show, Reading and District Gardeners' Society, per Mr. J. Pound, secretary, £5 15s.; Mr. G. W. Cummings, gardener, The Grange, Carshalton, the sum of £3 14s. paid by the public for admission to see the Chrysanthemums; Midland Carnation and Picotee Society, per Mr. R. Sydenham, £5; Mr. W. Bates, box at Twickenham flower show, £1 16s.; Mr. J. Wright, 171, Fleet Street, donation, £1 1s. Boxes: Mr. A. D. Christie, Ragley Gardens, Alcester, 8s. 9d.; Mr. W. H. Divers, Ketton Hall Gardens, Stamford, 11s. 3d.; Mr. G. T. Call, Charters, 11s.; Romford Chrysanthemum show, 5s.; Miss McDonald, Chichester, 10s. 6d.; Miss E. J. Holmes, Frampton Park Nursery, Hackney, card collection, £6 4s.; Mr. W. G. Head, box at the Crystal Palace, £2 0s. 6d. The hon. secretary brought up a financial statement of the year, and after due consideration it was resolved that five children should be placed upon the Fund. Mr. C. Osman, Commercial Street, E., was elected to the vacancy on the committee, caused by the lamented death of Mr. Hugh Low. Mr. D. Sheahan, Hartfield Road, Wimbledon, was appointed local secretary for Wimbledon and district. A vote of thanks was passed to the chairman for presiding.

—Interest in this deserving institution is not lacking in Cheshire. The Altrincham Gardeners' Improvement Society, by means of a concert held last year, were enabled to raise £20, and we are now informed by the secretary, Mr. WM. PLANT, The Gardens, Woodbegg Hall, Ashton-on-Mersey, that they will hold another of these entertainments under the patronage of Lord EGERTON, on Wednesday, December 6, in the Literary Institute, Altrincham, when they hope to be even more successful. The entertainment will consist of a "Limelight exhibition of picturesque bits near home, and glimpses of Mona's Isle and Bonnie Scotland, varied at intervals by vocal and instrumental music." We wish the committee every success.

THE ROYAL HORTICULTURAL AND THE IMPERIAL INSTITUTE.—We believe that the proposal, alluded to in our last issue, and which gave rise to so much anxiety has not been entertained, a strong feeling existing that it is better to let well alone.

HENRY CANNELL, nurseryman, of Swanley, has been awarded by the Council of the Academy (Industrial) of Science and Arts, Brussels, the diploma of that Institution, and the free membership of the same, the honour having been conferred for useful invention, commerce, and for the common good.

MR. DUNCAN WALSH.—We hear from Dublin with much regret, of the death of this gentleman, who had but recently retired from the service of the Earl of PEMBROKE, Mount Merrion, Dublin. Mr. WALSH was a leading man in horticultural circles in Dublin.

HOME CORRESPONDENCE.

THE HOME v. THE FOREIGN GARDENER.—Mr. Watson, in his very able reply to M. Lucien Linden, does not mention one of the greatest factors in the cultivation of plants, viz., the perfectly-adapted plant structure. He mentions Masdevallias as being particularly well done at Brussels, but were they not done as well, if not better, in the palmy days of Trentham, in the model house erected by the late Zadock Stevens? This British gardener was also an excellent cultivator of *Odontoglossum crispum*. Where houses have been designed by such thoroughly practical men as the above, success has invariably followed. Unfortunately, in this country, gardeners and nursery foremen are often expected to grow plants to perfection in structures entirely unsuitable to their requirements. Where will you find such marvellous results and such splendid culture as is shown by the average home market gardener? And why? It is primarily the perfect plant structure, designed, and often built with his own hands. The magnificent plants seen in the London markets could not be grown so well if it were not for the perfectly-suitable houses, as only ordinary labourers are employed in potting, watering, &c. In private gardens, and often in large trade establishments, structures are put up by the owner's desire, which, owing to their lack of cultural knowledge, are oftentimes not at all suitable, whilst the owner thinks that if the plants do not flourish, it must be the gardener's fault. Thought is given only to the beauty of the building, its tiled paths, cement and iron stages, &c., and in which the air is rendered like that of a bake-house. When our gardeners have suitable houses in which to grow their plants, we shall not have the spectacle of the foreigner telling us his culture is superior to ours. *W. H. Young.*

THE WEATHER REPORTS.—In your weather reports for the last two weeks, it is stated that in every district except the Channel Islands there was frost, and "sharp frosts," on the 5th, 6th, and 7th, Mr. Elliot, of the Falmouth Observatory, tells me that their minimums on those days were 50°, 37°.7, and 35°, and that up to the 22nd their lowest minimum for November was on the 1st, when 33°.6 was registered. Are no reports sent in from this specially-favoured locality, where Oranges have lived out-of-doors for a generation, and Bananas stood through last winter with slight protection? Information from other correspondents would be of interest. *Richd. Binns.*

IRISH GARDENERS.—I apologise to Mr. Burbidge and our friends the Irish gardeners for having appeared to overlook their claims to be regarded as equal to Englishmen (including Welshmen), and Scotchmen as cultivators. I am acquainted with a good many Irish gardeners of first-rate ability, both in Ireland and in this country. My mistake was in thinking that the term English would stand for all natives of the British Isles. I added Scotchmen to please a Scotch friend here who always corrects me if I do not give his countrymen a turn. Once upon a time to be called English was not objectionable to any native of the United Kingdom. Anyhow, whether it is to be Ireland a Nation, Separation, or what, we are united in our love of horticulture; and there is no difference between us, so far as I know, in gardening skill. *W. W.*

EARLY BLOOMING OF LILY OF THE VALLEY.—About a month ago we received by parcel-post from an unknown source, samples of Lily of the Valley "crowns," consisting of two bundles with buds of a very pale green colour, and two bundles with buds of a deep purple. After keeping them for about ten days, and receiving no communication about them, we had them potted on November 10, and to-day (November 17) the first named are in full bloom, and with the leaves fully developed. We may add that the ones with the deep purple buds, though planted at the same time and grown under the same conditions, are only about an inch high. *Pope & Sons, King's Norton.*

GRAPES SHANKING.—Not far from where I am writing, there is a vine in length 100 feet, and width 20 feet, built on high ground, and outside the viney the ground drops 4 feet. The Vines are planted in an inside border, and I have not seen a shanked berry on the Vines, Muscat of Alexandria, these twenty years, till last season, when a new gar-

dener having taken charge, the Grapes shanked very much. The cause of this seems to have been a too abundant supply of water at the roots, very much more than the former gardener had afforded them. I could mention several gardens where shanking takes place, but this Vine seems to point the moral best, as it was one of the most free from that malady, and to show that a viney should be on elevated ground. *S. Maers.*

CHRYSANTHEMUM MRS. ALPHEUS HARDY.—When visiting Hill Carr, Bowden, Cheshire, a few days ago, I was struck by the sight of the above Chrysanthemum, which is a variety that has not been successfully grown by many gardeners. There are some ten plants of the variety growing in 10-inch pots, perfect marvels of good culture, the largest plant carrying fifty fully open flowers, similar to the two flowers enclosed. This plant is four years old, and Mr. Tibbles, the gardener, told me that this plant has not been re-potted for two years, and has been grown in the Azalea-house since it was struck from a cutting. I have seen it each year since, and can say that it has always carried about the same number of flowers. More plants have been grown this season, and these are as good as the old plant, grown outside with the rest of his plants. Five plants have twenty flowers each; and two others, two years old, trained on balloon trellises, are quite as fine as the others. Again, the tops of the old plants were struck last May in 60-pots, and potted into 6-inch pots; these average from fifteen to twenty rather smaller flowers. Other Ostrich Plume varieties may be mentioned, viz., *Enfant des Deux Mondes*, *Louis Bœhmer*, *Wm. Falconer*, *W. A. Manda*, all very good, but none is equal to *Alpheus Hardy*. I may say the general collection of it is very fine indeed, the plants grown naturally for cutting purposes. In the large conservatory, which is now very gay, is a fine specimen *Cycas revoluta*, with forty large fronds 8 feet through, bearing an enormous cone—a perfect plant. In the stove there are three varieties of *Anectochilus* growing in small glass cases—beautiful healthy plants, such as we are not in the habit of seeing every day, *A. intermedius*, *A. petola*, *A. xanthophyllum*. What a mistake it is that these beautiful plants are not taken more care of! Mr. Tibbles telling me the only difficulty he finds with them is during winter, when some may damp-off; but with careful treatment, the plants are of easy cultivation. Taking this garden all through, everything is looking well, some grand Azaleas, Camellias, stove plants, and a very nice lot of Orchids in the different houses; one a *Dendrobium thyrsiflorum*, which bore thirty-five grand spikes of bloom last spring. *W. H.*

BULB, SEED, AND PLANT TRADE.—Looking through the *Gardeners' Chronicle*, I notice in the "Wanted" column, the advertisement of a firm who require the services of an "Invoice Clerk accustomed to the Bulb, Seed, and Plant Trade. Hours long. Salary 21s. per week." Truly, this is a magnificent opportunity for a man of good education, who has served ten, or perhaps fifteen years to the trade, and who may or may not be a married man, with or without a family; doubtless this clerk will be required to furnish high testimonials as to honesty, sobriety, and above all his willingness to submit to work hard for as many hours out of the twenty-four as his employer may wish to keep him at it. This I am afraid is getting to be the rule rather than the exception in the London trade. It would be better to send our boys to learn to be bricklayers, who can earn 10d. to 1s. per hour, and find ready employment as a rule. But what about those, who having plied their energies to the trade, and find it too late to turn their attention to something better? Let them ask themselves has not the time arrived when they should have a trade union to protect their interests, the necessity for which is further shown by the action of the London County Council. This body has resolved to add to their standing orders one providing that in the absence of a trade union for any particular trade, the council will fix the minimum rate of wages to be paid, the maximum number of hours to be worked, and the conditions to be observed. These regulations, it is presumed, apply to all contracts under the County Council, and this being the case, it is time those interested should be paying attention to these matters, considering the fact that large contracts are let out by this County Council for nursery stuff and seeds. *Thos. D. Smith, 5, Dingle Road, Birkenhead.*

EARLY AUTUMN FROST.—In answer to Mr. Myton's inquiries respecting early autumn frosts

(*Gardeners' Chronicle*, November 18), it is usual to have frosts in October in this neighbourhood, which is on the borders of Warwickshire. I find since 1880, with two exceptions, viz., 1883 and 1886, we have had frost in October, ranging from 1° to 15°, and in some cases of several days' duration. On October last, viz. 30 and 31, and November 1, we registered 2°, 10°, 10° of cold. *G. Mitchison, Perry Hall Gardens, Birmingham.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 28.—The holding of two meetings during November this season is a departure from the rule which has obtained during several previous years, when one only has been held. The exhibits at the meeting held on Tuesday last at the Drill Hall, James Street, Westminster, were not so numerous as on many other occasions. Orchids were very few, and only specimens shown for certificates or awards were sent. Chrysanthemums were shown by several growers, and a number of awards were made. A very fine collection of Apples and Pears were staged by an amateur.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. Robt. Owen, C. T. Drury, H. Herbst, R. Dean, Geo. Stevens, C. F. Bause, C. J. Salter, J. D. Pawle, George Gordon, Chas. Jeffries, Jas. Walker, Chas. E. Shea, T. Baines, Chas. Noble, Henry Cannell, and Peter Blair.

A group of well-grown hard-wooded flowering plants and a number of *Solanum capsicastrum* were staged by Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield. The group included *Grevillea alpina*, *Correa picta*, *C. p. rosea*, *C. bicolor*, *C. cuneosa*, and *C. ventricosa*; also *Acacia platyptera*, *Crowea latifolia*, a good decorative plant, with expanded pink flowers, that should be seen oftener than it is; and *Darwinia Hookeriana*. Also a large group of Cyclamens in first-rate health, and carrying a good number of blooms, but not nearly at their best, as the foliage concealed a great number of pushing escapes (Silver Banksian Medal).

Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, put up a pretty group of miscellaneous plants, including *Dracænas*, *Crotons*, *Ferns*, *Poinsettias*, *Calanthes*, and a few plants of *Cypripedium insignis*, very well-flowered (Silver Flora Medal). Mr. Wythes also exhibited a specimen of *Sterculia nobilis* bearing fruit.

Mr. H. B. May, Upper Edmonston, exhibited a fine specimen of *Polypodium Meyenianum*, a pretty Fern from the Philippines. This species is interesting, because the fronds are only fertile upon the terminal half, and this part withers whilst the other half is quite green (First-class Certificate). A similar award was given to some plants of *Acalypha Maca-fearna* in exceptionally good condition, bearing leaves larger than usually seen, and extremely good in colour.

A group of zonal *Pelargonium* blooms arranged in sprays was from Messrs. H. Cannell & Sons, Swanley; the varieties were similar to those exhibited by the same firm at the last meeting (Silver Banksian Medal).

Several exceptionally well-grown plants of *Lachenalia pendula* were shown by Mr. Thos. S. Ware, Hale Farm Nurseries, Tottenham; also a plant in bloom of *Leontice leontopetalum*, and a pot of *Narcissus monophyllus* (Vote of Thanks).

The absence of rain, and especially of fog, is operating to keep the Chrysanthemums in fine character. Mr. Robert Owen, of Maidenhead, had some of his new varieties so good as to win Awards of Merit. Two pretty Pompons led the way, one quite a small and compact orange-brown variety of the shade of Model of Perfection, evidently very free; and Elsie Walker, orange-brown, with the florets tipped with gold, of good size, distinct, and handsome. Awards were made to two new incurved varieties, one named Mrs. John Mitchell, a sport from Empress Eugénie, and decidedly distinct in colour, the florets silvery-pink on the surface, with a pale pinkish or rosy-buff reverse, the centre gold; and to John Gardiner, a deep yellow, somewhat small-petalled flower as shown, in the way of Mrs. Coleman, but having more gold—fine in colour, and likely to prove useful as an exhibition variety; also to the following Japanese varieties: H. M. Pollett, bright rosy-pink, the somewhat broad

petals reflexed—novel and distinct; and *Le Prince du Bois*, deep yellow, small-petalled, bright and attractive, reflexed, full and deep, but as shown rather rough in the centre. In addition, Mr. Owen had *John Noble*, an incurved Japanese, reddish-chestnut, with a bronzy reverse, broad in the petal; *Elmer de Smith* (Award of Merit), a large and promising flower, reflexed, broad-petalled, bright reddish-chestnut, with a buff reverse; and *H. L. Sunderbrick*, a broad-petalled yellow Japanese. An Award of Merit was made to a fine and striking deep golden reflexed Japanese, named *Golden Gate*, in the way of *Sundowner*, but quite distinct, from Messrs. H. Cannell & Sons, nurserymen, Swanley, Kent; to Japanese Mrs. C. Harman Payne (Calvat), pale lilac-pink, with a delicate pink or deep blush reverse, large and full, but characterised by a certain amount of roughness; and to Japanese *Anemone Judge Hoit*, an American variety, delicate pink, somewhat curled, gnarled florets, the quilted centre blush, large, and fine, both also from Messrs. Cannell, who had, in addition, several boards of fine blooms of excellent new varieties, including *Golden Wedding* (Award of Merit), a rich, deep, incurved, hairy-petalled Japanese, and many others.

From Mr. Geo. Stevens came *Pearl Beauty*, a white, massive, broad-petalled flower, of the build of *Comte de Germiny*, having a slight blush tinge, but as this was different in character to *Pearl Beauty*, as previously shown, the committee thought it best not to make an award until the true character is ascertained.

Mr. John Smith, nurseryman, Windsor, had *Royal Windsor*, a delicate blush variety, with yellow centre, strongly recommended for decorative purposes.

Mr. C. J. Salter, gr. to T. B. Heywood, Esq., Woodhatch, Reigate, had three very fine blooms of Japanese *Lord Brooke*, which had nearly lost its incurved character, but still very striking; also Japanese Mrs. *Jeremiah Coleman*, a large, delicate, blush-white variety.

From Mr. W. Seward, Hanwell, came *George Seward*, a deep dark-chestnut flower, needing development; and Mr. C. Blick, gr., The Warren, Hayes, had *Helen Crawford*, a large lilac-pink Japanese, with silvery reverse.

Japanese *Lady Emma* from Mr. J. Reynolds, gr., Netley Court, Hants, is a small soft pink variety; and Mr. James Henderson, gr., Weltham Hall, Huddersfield, had blooms of Japanese Mrs. *Hirst*, a pale yellow, narrow-petalled variety, small and thin.

In the competitive class for *Chrysanthemums* in groups, there were two competitors. Mr. E. Vince, gr., Highgate Cemetery, was 1st, with good plants, and Mr. Wythes, gr. to the Duke of Northumberland, 2nd.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. J. O'Brien (Sec.), Dr. Maxwell T. Masters, Thos. Statter, T. B. Haywood, E. Hill, J. Douglas, W. H. White, F. Sander, and H. M. Pollett.

Messrs. F. Sander & Co., St. Albans, exhibited a charming basket of the delicately-tinted, pinkish-white *Calanthe* × *Victoria Regina*, which was raised a few years ago at Burford Lodge. In growth and in the size of the flower it resembles *C. × Veitchii* (Award of Merit). Messrs. Sander also showed *C. × Sandhurstiana*, a rich rose-crimson form of the *C. Veitchii* section; *Cypripedium* × *Pryorinum* (*Lathamianum* × *Harrisianum* × *♂*), a massively-formed flower, in which the basal part of the upper sepal is nearly black, changing upwards to crimson, and broadly margined with white; the broad petals and shapely pouch are greenish-yellow, tinged with dark red; *C. × Lynchianum* (*Spicerianum* × *selligerum majus* × *♂*), with flowers somewhat resembling those of a *C. × Leeanum*, but with the upper sepal quite two-thirds pure white.

Messrs. Jas. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, exhibited their new *Cypripedium* × *Minos* (*Spicerianum* × *Arthurianum* × *♂*); the upper sepal was pure white, with various shades of purple at the base, the petals taking the downward curve as in *C. × Arthurianum*, they and the lip being dull yellow, tinged with brown (Award of Merit); the curious little *C. × Arête* (concolor × *Spicerianum* × *♂*); *Lælio-Cattleya* × *Cornelia* (*L. pumila* × *C. labiata* × *♂*), a dwarf plant, with flowers like a small *C. labiata*; the singular *Cataetum Darwinianum*, a species from British Guiana (Award of Merit); the pretty North American *Habenaria ciliaris* (Botanical Certificate), and *Cypripedium* × *Cleola*.

Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed the fine *Lælia anceps Amesiana*, with white sepals and petals tipped with crimson, and intense dark maroon crimson lip (First-class Certificate); *Cypripedium* × *Fairriano-Lawrenceanum* (*Lawrenceanum* × *Fairriano* × *♂*) a very pretty flower of the *C. × vexillarium* type. The broad upper sepal was white, with purple and crimson lines radiating from the base; the petals and lip much as in *C. × vexillarium* (Award of Merit); and as *C. × Engelhardtæ*, a name of continental origin, a pale form of *C. × Leeanum*.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed a flower of a very distinct form of *Cypripedium* insignis named *C. i. illustre*, the ground colour of a clear yellow, the sepals, petals, and the upper portion of the lip spotted with light chestnut brown. It had a few crimson spots on the white tip of the upper sepal, and was altogether a well-marked variety (Award of Merit).

C. J. Lucas, Esq., Warnham Court, Horsham (gr., Mr. Duncan), sent two well-grown plants of the singular *Dendrobium D'Albertisii*. Mr. H. A. Tracy, Orchid Nursery, Amynd Park Road, Twickenham, sent *Cyperorchis Mastersii*. Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr., Mr. Howes), exhibited a fine plant of *Cypripedium* × *Cobbianum* (*Lawrenceanum* × *Sallierii* × *♂*), with pale green leaves, very prettily marked with dark green transverse lines; and shining rich-coloured flowers, equal in size to those of *C. × Harrisianum*.

W. Thompson, Esq., Walton Grange, Stone, Staffordshire (gr., Mr. W. Stevens), sent a two-flowered spike of the rose-coloured *Cattleya Victoria Regina*. Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, N., showed *Calanthe* × *Mylesii*, like a pure white *C. × Veitchiana* (Award of Merit).

Messrs. Hugh Low & Co., Clapton, sent two varieties of *Cypripedium* × *Pluto* (*Boxalli* × *calophyllum*), with prettily spotted shining flowers, in the way of *C. × vernixium*, and *C. × calurum Ainsworthii*.

W. Rufus Lee, Esq., Beech Lawn, Audenshaw, Manchester, exhibited *Cypripedium* × *Mary Lee* (*Leeanum* × *Arthurianum* × *♂*), a very pretty variety, with many of the features of *C. × Leeanum*. The flower had a small area at the base of a bright green, the rest pure white, on the green base and also on the white surface immediately above it were some uniform small purple spots. Petals and lip resembling one of the forms of *C. × Leeanum* (Award of Merit). The same exhibitor also sent a good example of *C. × Leeanum superbum*; and Mrs. Haselfoot, Moor Hill, West End, Southampton (gr., Mr. N. Blandford), exhibited a dozen good spikes of varieties of *Cattleya labiata*.

Fruit Committee.

Present: Philip Crowley, Esq., in the chair; and Messrs. T. F. Rivers, H. J. Pearson, W. Wilks, Harrison Weir, Geo. Goldsmith, Geo. Bunyard, J. Cheal, Wm. Warren, J. Wright, J. A. Laing, A. Dean, G. T. Miles, G. Wythes, Jas. Hudson, H. Balderson, F. Q. Lane, Robert Hogg, and A. H. Pearson.

A capital collection of fruit, chiefly Apples, but including a few dishes of good Pears, was staged by Mr. Geo. Goldsmith, gr. to Sir Edmund Loder, Leonardale Gardens, Horsham; the most noticeable among the well-coloured, good-sized Apples, were the following:—*Peasgood's Nonsuch*, Lord Derby, *Mère de Ménage*, *Bismarck*, *Cox's Orange Pippin*, *Blenheim Orange Pippin*, *Lady Henniker*, *Tower of Glamis*, *Adams' Pearmain*, *Hollandbury Pippin*, *Barnack Beautv*, *Emperor Alexander*, *Lane's Prince Albert*, *Newton Wonder*, *King of the Pippins*, &c. The Pears included good specimens of *Glou Morceau*, *Marshall Vaillant*, *Catillac*, &c. (*Silver Knightian Medal*).

Mr. T. Arnall, Brookside, Headington Hill, Oxford, was awarded a *Bronze Banksian Medal* for twelve extra large fruits of *Pear Uvedale's St. Germans*; the largest fruit weighed 3 lb. 8 oz., and the twelve a total weight of 27 lb. 6 oz. A very fine cluster of *Banana* fruits were shown by Mr. C. E. Smith, gr. to Jas. Quartermain, Esq., Silvermere, Cobham, Surrey (Cultural Commendation).

The English Fruit and Rose Co., Hereford, exhibited a dish of *Byford Wonder Apple*, a pale-coloured, very firm, good-sized fruit (Award of Merit). Messrs. W. E. Brown & Son, The Nurseries, Wells, Somerset, had a few fruits of *Bartlett's Glory Apple*, very similar in size and colour to *Blenheim Orange Pippin*. Messrs. Geo. Bunyard & Co., Maidstone, showed a dish of *Foster's Scarlet Prolific Apple*; this was a good-looking fruit, of medium size, and very highly coloured. Another good-

looking Apple was shown by the same exhibitors, named *Bunyard's Christmas Pearmain*. A seedling Apple, named *Ouseley's King of the Valley*, came from Messrs. J. Feed & Sons, Roupell Park Nurseries, London. MM. Chantrier Frères, Horticulteurs à Morte Fontaine, sent four fruits of *Diospyros Kaki* (Vote of Thanks). The Liverpool Horticultural Co., Ltd. (Mr. J. Cowan), exhibited two bunches of a black Grape named *Hamburgh-Colmar*, and described as a cross between *Gros Colmar* and *Black Hamburgh*. The Grape appeared very similar to *Gros Colmar*, and the flavour appeared but little better if so good.

BURY ST. EDMUNDS.

NOVEMBER 9.—A *Chrysanthemum* show was held on the above date in the Corn Exchange, Bury, under the auspices of the Bury and West Suffolk Horticultural Society. This is the first held by the Society, but it is expected that it will be continued annually. The success of the exhibition exceeded the hopes of the committee. Mr. E. W. Lake was President, and Mr. W. Armstrong the Hon. Sec. Conspicuous amongst the prize-winners were Mr. G. A. Partridge and Mr. R. Burrell. In all there were twenty-one classes, and these were of the ordinary character, including special classes for groups arranged for effect, for specimen plants, and for cut flowers. A few also were devoted to bouquets, table plants, Primulas, and fruit.

THAMES DITTON.

NOVEMBER 15.—The show of *Chrysanthemums*, &c., of the Ditton Society, held in the Village Hall on the above date, was in advance of that held last year, when the Society was inaugurated. For three trained plants, Mr. W. Mearning, gr. to Mr. W. Whitley, was 1st; and Mr. A. Piper, gr. to Mr. C. Godfrey, 1st for six untrained specimens. Mr. Mearning had the best group for effect; and the same exhibitor, together with Mr. Plowman, gr. to Mr. Laversmith, and Mr. H. Farr, gr. to Hannibal Spear, Esq., was one of the principal exhibitors in the classes for cut flowers. Cottagers created a display highly satisfactory, especially such as came from Mr. S. R. Crowne, Boxtrees, Long Ditton, and Mr. Mark Fenn, of Chestnut Villas. At one of the ends of the room was a fine group of *Orchids* from Mr. Taylor, gr. to J. Croyle, Esq., of Ember Grove, Esher, and also a number of *Pelargoniums* and other plants, which added very considerably to the attractiveness of the exhibition.

EALING HORTICULTURAL.

NOVEMBER 15.—A very good *Chrysanthemum*, &c., show was held at the Lyric Hall, Ealing, on the above date. Groups in a space 9 feet by 6 were a pretty feature, and 1st honours were gained by Mr. S. Wickenden, gr. to R. Dawes, Esq., Edmondsclote House, with a bold and effective arrangement, this also gaining the National *Chrysanthemum* Society's Silver Medal; 2nd, a good display, Mr. C. Edwards, gr. to W. Owen, Esq., The Elms. In the smaller groups, the 1st prize was gained by Mr. C. Long, gr. to E. P. Oakshott, Esq., with an effective arrangement; 2nd, Mr. W. Harman.

For the best three large-flowered specimen plants, 1st, Mr. S. Wickenden; and Mr. Roberts, gr. to J. Harris, Esq., Braemar, 2nd, both exhibitors contributing well-flowered plants. The successful exhibitors of three Pompons were Messrs. C. Edwards and W. G. Rickerd. Table plants were well shown by Mr. Roberts, gr. to J. Harris, Esq.; and Mr. C. Long, who gained the prizes in the order named.

Cut Blooms.—Twelve Japanese. In this class a very fine stand was staged by Mr. C. Edwards, 1st; and one hardly less good by Mr. C. Long, 2nd. Mr. C. Long was 1st for twelve incurves, with neat, well-finished blooms; 2nd, G. Rickerd, gr. to T. Lilley, Esq.

Twelve bunches Pompons, very pretty exhibits taking prizes in the order named, were contributed by Messrs. C. Long and C. Edwards. The premier Japanese bloom, *Lord Brooke*, was shown by Mr. C. Long; and the premier incurved was *Violet Tomlin*, shown by Mr. C. Edwards. These prizes (Medals) were offered by the National *Chrysanthemum* Society. Stand of *Chrysanthemums*, 1st, Miss Savage, Woodlands; 2nd, W. C. Rose, Esq., Deccan.

Vegetables were well shown by Messrs. Long and Peasey, and culinary and dessert Apples by Messrs. Harman and Woods. The successful exhibitors for black Grapes were Messrs. C. Edwards and G. Rickerd. Non-competitive exhibits were numerous

and good. Mr. C. Holden, florist, Ealing, exhibited a finely-bloomed plant of *Chrysanthemum* *Sour Melanie*, 28 feet round, and bearing 2000 blooms. Other noteworthy competitors were, Mrs. H. B. Smith, Court florist, very effective floral decorations; Mr. S. Wickenden, group of *Chrysanthemums*; Mr. G. Reynolds, gr. to the Messrs. de Rothschild, group of foliage and flowering plants; Messrs. Hart Bros., florists, Acton, a fine group of *Chrysanthemums*; and a very effective cross, wreath, and chaplet from Mr. W. Bown, florist, Broadway.

LEWES AND DISTRICT.

NOVEMBER 15, 16.—A very successful show of *Chrysanthemums*, &c., was held in the new Municipal Building and Corn Exchange, Lewes, on the above dates. A few of the chief winners of prizes on this occasion are given below.

For twenty-four cut blooms, incurved, Mr. Sayers, gr. to Mrs. Cook, Nutley, was 1st; and Mr. Tourle, gr. to F. Barchard, Esq., Little Horsted, was 2nd.

For twenty-four Japanese varieties, Mr. A. F. Grace, of Steyning, was 1st; and Mr. A. Slaughter, was 2nd. Mr. Grace was also awarded a Certificate of Merit, by the National *Chrysanthemum* Society.

For twelve, and also for six Japanese varieties, Mr. Tourle was 1st.

For six incurved, one variety, 1st Mr. A. Slaughter, with Lord Alcester; whilst Mr. Grace was 1st for six Japanese, with good examples of Golden Wedding.

For six distinct Japanese, Mr. Slaughter beat Mr. Grace, and was also 1st for six distinct incurved vars.

Plants.—Mr. C. Funnell, gr. to Mrs. Thorne, Lewes, was 1st, for a group of *Chrysanthemums*; and Mr. E. Brooker 2nd.

A group of stove and greenhouse plants with flowers was badly judged, Mr. C. Watkins, who was placed 1st, being considerably behind Mr. J. Adams, gr. to the Rev. Sir G. Shiffner, Bart.

Mr. J. Carley was 1st for six untrained plants, and Mr. Smith 1st for six Pompons, and again for four standards.

Mr. Denman and Mr. Stidworthy were the winners of the 1st and 2nd prizes, for twelve untrained specimens.

Table decorations were well shown by Miss Adames and Mrs. Stroud, who were 1st and 2nd in each class.

The prize winners for collection of vegetables were found in Mr. Geo. Helman, gr. to Viscount Gage, Mr. C. Watkins, Mr. Grover, Mr. Briggs, and Mr. E. Brooker.

The chief winners in fruit being Messrs. Mercer, Grover, Carley, Richardson, Helman, and Stidworthy.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 15, 16.—In point of quality, the autumn exhibition held in the Guildhall on the above dates was equal to the average of shows at Winchester. Cut bloom was very good, and Mr. Neville, gr. to F. W. Flight, Esq., Twyford, won 1st prize for thirty-six blooms, half of them to be incurved, and half Japanese. It was an exhibit of a most creditable character; Mr. Brown, gr. to A. B. Welch Thornton, Esq., Beaupaire Park, was 2nd. Mr. Trinder, gr. to Sir H. Mildmay, Bart., Dogmersfield Park, had the best stand of Japanese varieties. Mr. Hughes, gr. to W. Baring, Esq., had the finest twelve incurved; and Mr. Agate, Havant, the best six of any variety of the Queen family *Chrysanthemum*. Plants of nice proportions, and capitally flowered, were shown by Mr. Can, gr. to W. A. Gillett, Esq. The best group of *Chrysanthemum* plants was arranged by Mr. Broome, nurseryman, Tower Street; and the best group of miscellaneous plants were those from Mr. Can. The Messrs. Flight, Webb & Golding, arranged the most attractive stand of *Chrysanthemums*, foliage, Ferns, and grasses.

Fruit made a very good display; Mr. Hillier, nurseryman, had an attractive non-competitive group of stove and greenhouse plants; and Mr. Molyneux, gr. to W. H. Myers, Esq., M.P., Swanmore Park, Bishop's Waltham, had a grand stand of cut blooms, representative of nearly all the sections of *Chrysanthemums*.

THE ISLE OF SHEPPEY CHRYSANTHEMUM.

NOVEMBER 15, 16.—It says something for the enthusiasm of *Chrysanthemum* cultivators that this corner of Kent, having the sea as a boundary on one side, should be able to hold a *Chrysanthemum* show at all, and bring together some remarkably good blooms. Sheerness, being much engaged in ship-building and naval affairs generally, does not support the *Chrys-*

anthemum show as it might and should, but the promoters of the exhibition hold on and hope for a change for the better. The Victoria Hall was well-filled, and looked bright and pleasant—a contrast to the cold and darkness without. One of the principal exhibitors was Mr. A. Radwell, gr. to A. W. Howe, Esq., the President of the Society, and he carried off a goodly number of 1st prizes with plants, cut blooms, vegetables, &c.

The principal cut flower class was for twelve incurved and twelve Japanese; Mr. G. Ray, Sittingbourne, taking the 1st prizes with some capital blooms of both of the former; Lord Brooke, Stanstead White, W. H. Lincoln, Miss A. Hartshorn, and Mrs. C. H. Payne were very fine; and he had excellent incurved. Messrs. W. Ray & Co., Sittingbourne, were 2nd, with blooms only a little inferior.

Vegetables were good. One class was for three heads of Savoy and three stems of Brussels Sprouts, both of which do well in the district. There were some good Apples and Pears, and excellent Potatoes from that well-known Kent grower, Mr. E. Chopping, Milton, Sittingbourne.

We hope the *Chrysanthemum* will continue to flourish in this corner of the garden of England.

TUNBRIDGE WELLS, MID KENT, AND EAST SUSSEX CHRYSANTHEMUM.

NOVEMBER 15, 16.—A very successful exhibition. The more remarkable exhibits were groups of miscellaneous plants, Solanums, specimen *Chrysanthemums* (especially dwarf-trained), and collections of vegetables and Apples. Mr. Charlton had a good collection of vegetables and *Chrysanthemums* in the ante-room; other exhibits not for competition came from Mr. J. Rust, gr. to the Marquis of Abergavenny, Eridge Castle, who had grand fruit in quantity, backed by well-grown plants of *Chrysanthemums*.

Plants.—For eight *Chrysanthemums*, a Silver Cup and a money prize were offered as 1st prize. Mr. J. Smoker gained the honour, with good examples of Val d'Andorre, L'Adorable, Mrs. Forsyth, and others; Mr. W. H. Wickens, gr. to J. Wheelwright, Esq., being 2nd.

For a group of *Chrysanthemums*, arranged on a space 12 feet by 6 feet, a second Silver Cup and a money prize were offered, Mr. H. Nightingale being the winner of the 1st, Mr. Austin of the 2nd prize.

Miscellaneous groups were well represented, and had a very pleasing appearance, the 1st prize going to Mr. J. A. Lither, gr. to W. Wainwright, Esq., for one of the prettiest mixed groups we have seen this season; Mr. L. Dupont, gr. to C. B. Powell, Esq., 2nd. Mr. J. Smoker was 1st for six dwarf-trained plants.

Six plants, Japanese, were also well shown by Mr. Tickner, gr. to H. Hewetson, Esq., while for six bush plants (not disbudded), Mr. J. Tickner, gr. to Mrs. Nelson, was 1st.

Pyramids were good, and those staged by Mr. Tickner and Mr. Smoker well deserved the 1st and 2nd prizes, awarded in like order. A group of *Chrysanthemums* in the amateurs' class resulted in Mr. G. Tickner taking 1st, with a grand lot.

Cut Flowers.—Twenty-four cut blooms, large-flowered incurved, were particularly good, Mr. J. Legg and Mr. J. R. Heasman securing 1st and 2nd prizes respectively. For the same number of Japanese varieties: 1st, Mr. Heasman, and 2nd, Mr. J. W. Moss, with very good specimens. Mr. Legg was 1st for twelve incurved, and Mr. Heasman 2nd. Mr. G. Harries was 1st for twelve Japanese; Mr. J. W. Moss 2nd.

Six Japanese of any one variety brought some excellent examples of Vivian Morel and Etoile de Lyon from Mr. J. W. Moss and Mr. J. Snow, who won in the order named.

Fruit was good throughout, the chief prizes going to Mr. T. C. Moorhouse, for Grapes; to Mr. F. Bridger, for dessert Pears; Mr. W. Johnstone, for dessert Apples; and to Mr. F. Bridger, for culinary Apples.

Vegetables were very prominent, the best collections coming from Mr. S. Standen, Mr. W. Johnson, and Mr. A. Henderson, who were 1st in their respective classes.

A special prize was offered by Messrs. Bunyard & Co., Maidstone, for twelve dishes, composed of four of dessert Apples, four culinary ditto, and four dessert Pears, and here Mr. F. Bridger was 1st.

PARKSTONE.

NOVEMBER 15, 16.—The first show of the Parkstone *Chrysanthemum* and Horticultural Society was

held in St. Peter's School-room, and was a decided success. Sixty-five classes were included in the schedule, and the general quality of the exhibits and the number of entries was satisfactory. Mr. T. H. Marsh is chairman of committee, and Mr. T. K. Ingram, Hon. Sec.

Groups of *Chrysanthemums* arranged for effect made a very good display. In the leading class, Mr. W. Weeks, gr. to E. N. Blanchard, Esq., and Mr. T. Gould, gr. to Mrs. Dawson Damer, were the most successful competitors.

Cut blooms were also good, Mr. W. Taylor, gr. to Mrs. Elphinstone, Christchurch, was a good 1st for a stand of twelve Japanese, as well as for a like number of blooms of incurved.

Mr. E. Shave, gr. to W. W. Moore, Esq., Bourne-mouth, was 1st for Anemones and reflexed varieties, staging good blooms in each class.

Vegetables were shown remarkably well, and fruit though not present in great quantity was of good merit. Mr. T. K. Ingram, contributed a grand bank of *Chrysanthemums*, &c., from the Parkstone Nurseries, which attracted a good deal of attention, and added greatly to the general effect of the exhibition.

SHEPTON MALLET.

NOVEMBER 16, 17.—The third annual exhibition of *Chrysanthemums*, fruits, and flowers was held in the Town Hall on the above dates. Groups to consist chiefly of *Chrysanthemum* plants made a creditable display. Mr. J. Webb, gr. to Miss Davis, Oakhill, Shepton Mallet, was 1st in the leading class.

Cut Blooms.—Four good stands of twenty-four blooms, twelve incurved and twelve Japanese, distinct varieties, were shown by Mr. W. R. Williams, gr. to J. F. Hall, Esq., Dinder, who was awarded premier position. Mr. J. Webb was a good 2nd.

Fruit was not extensively shown, but what was staged was fine in quality.

Miscellaneous exhibits included seventy-two fine dishes of Apples, eleven good dishes of Pears, and two grand dishes of Medlars from Messrs. Browne & Sons, Priory Nursery, Wells. These were Highly Commended, and were very much admired. The Hon. Secretary (Mr. W. H. Allen), and Hon. Treasurer (Mr. R. Norton), deserve a word of praise for the admirable manner in which they arranged and carried out the details of the show.

SHEFFIELD CHRYSANTHEMUM.

NOVEMBER 17, 18.—The exhibition held in the Corn Exchange on the above dates will compare favourably with any held in previous years; and the competition for the handsome prizes offered, brought exhibitors from far and near. Messrs. W. and G. Drover, Fareham, Hants, won the highest prizes for blooms of incurved and also for Japanese varieties, by the flowers possessing fine quality, besides being arranged with good taste.

In the first-named class, Mr. Jellicoe, gr. to F. Gossage, Esq., Camp Hill, Woolton, Liverpool, was a good 2nd; and in the latter, Mr. Heany, gr. to G. C. Schmitz, Esq., Mossley Hill, was 2nd. Mr. Blair, gr. to the Duke of Sutherland, Trentham, was 1st for twelve incurved blooms, as was Mr. Heany for twelve Japanese. Mr. Jellicoe was 1st for six blooms of Japanese and six reflexed. Messrs. Scott and Redmill were the winners of the 1st prizes in the classes confined to the district, with handsome specimens.

In the amateur classes, Mr. Broomhead was quite unapproachable in all classes of cut blooms; and Mr. W. Redmill, gr. to J. G. Lowood, Esq., Five Oaks, Sheffield, staged the best groups of *Chrysanthemums*. Mr. C. Scott, gr. to J. Colley, Esq., Sheffield, had the finest specimen plants of Japanese varieties; and Mr. E. Green had the best plants of incurved varieties—both having those best suitable for the style of training adopted.

THE SUTTON COLDFIELD CHRYSANTHEMUM SHOW.

NOVEMBER 22.—The eighth annual exhibition, held on the above date, was a most successful one. Four excellent groups of *Chrysanthemums* were staged in the open class, Mr. J. E. Pears, gr. to J. D. Ripplingill, Esq., Manor Hill, winning with a beautiful group of well done plants in foliage and quality of bloom; and 2nd, Mr. R. Popwell, gr. to W. H. Tonks, Esq., Sutton Coldfield, with a well-arranged group.

With specimen plants in pots, Mr. Pears was well

to the front with capital naturally trained cut-back plants of considerable size and exceptional merit.

In the class for twenty-four blooms, twelve incurved and twelve Japanese, Mr. A. Hughes, gr. to W. L. Hodgkinson, Esq., Erdington, was 1st, with good blooms; 2nd, Mr. A. Jenkins, with a good selection.

In the class for twelve blooms, six of each class, Mr. Pears was again 1st with a good lot; 2nd, Mr. A. W. Wills.

Some good Apples and Pears and vegetables were exhibited.

It is an unusual thing to see prizes offered for a collection of fungi, but it is so annually here, and two good collections were staged by men employed on the railway.

Mr. A. W. Wills, J.P., sent, not for competition, some good Orchids; Mr. H. E. Yates, a good panful of *Calanthe vestita*; and Mr. Groves, nurseryman, Sutton Coldfield, a fine bank of *Chrysanthemums* and other plants, and a good display of cut blooms.

NEWCASTLE FLOWER SHOW.

NOVEMBER 23.—The annual meeting of the Durham, Northumberland, and Newcastle-upon-Tyne Incorporated Botanical and Horticultural Society, took place at the offices of the Society, Cross House Chambers, Westgate Road, Newcastle, on the above date, Mr. Nathaniel Armstrong presided, and there was a good attendance. The following is taken from the annual report:—Your Council announced in the report of last year that it had made arrangements for amalgamating the summer show with that of the Northumberland Agricultural Society, believing that by so doing the finances of both would be materially benefited; the result has quite justified the course pursued. Owing to an unusual spell of fine weather, extending over the three days, the takings at the gates reached the large sum of £2183 3s. 9d., this Society's proportion being one-third, or £727 14s. 7d., and it is gratifying to know that the balance in hand is £824 7s. 11d. It is proposed in future to hold the summer show in the Recreation-ground, North Road, instead of the Leazes Park, as it is more convenient, and centrally situated.

It was announced that the shows for 1894 have been fixed to be held on April 18 and 19 (spring), and July 18, 19, and 20 (summer). The balance-sheet, presented by Mr. J. A. Baty (treasurer), showed that during the year £800 had been invested in deposit shares in the Tyne-side Assets Purchase Company, and there remained in the bank £24 7s. 11d. The subscriptions amounted to £502 5s. 6d., and the receipts from the spring and summer shows to £921 2s. 4d. The balance in hand had increased during the year from £412 5s. 6d. to £824 7s. 11d. £332 16s. had been expended in prizes, £70 in fireworks, and £83 6s. in "music, fares, and expenses."

Councillor Fox moved the adoption of the reports. Mr. B. Cowan, of South Shields, seconded, and congratulated the meeting on the condition of the Society.

The report having been carried, Mr. Edward Joicey, J.P., was elected president of the Society, and the Mayor of Newcastle (Ald. Quin) vice-chairman.

It was stated that the spring show of the Society would be held in the Olympia instead of the Town Hall.

Mr. Armstrong asked if it was not possible to hold a *Chrysanthemum* show in Newcastle as in the case of Gateshead and Shields. He would suggest that one be held next year.

Mr. Cowan agreed with the idea of a show, but thought that it should be arranged outside the Society, as there might be a difficulty in increasing the price of subscriptions, &c., of the Society.

There appeared to be a feeling in favour of the holding of such a show, but whether under the Society or not was not decided. Eventually the matter was referred to the council.

The meeting concluded with a vote of thanks to the chairman.—*Newcastle Daily Leader*.

SCOTLAND.

NORTH OF SCOTLAND HORTICULTURAL AND ARBORICULTURAL ASSOCIATION.

THE members of this Association held their monthly meeting in the Christian Institute, Aberdeen, on Wednesday, the 15th inst. There was a good attendance, and Mr. John Munro, of the Polmuir Nurseries, occupied the chair. The feature of the evening was

an exhibition of what was described as "novelties of the year." It consisted of the best specimens of flowers, fruit, and vegetables, grown by the exhibitors. A few facts concerning the treatment given to each of the specimens were given by the various exhibitors, among whom were Mr. Grigor, Mr. Harper of Duthie Public Park, Mr. William Reid, and several others. The proceedings proved very instructive and enjoyable. Mr. J. Crichton, Balmagath, afterwards read a paper on the rearing of that most charming of all autumn-flowering plants "*The Chrysanthemum*," in which he gave some valuable hints and information. A collection of beautiful *Chrysanthemums* were on exhibition, and were much admired. The lots shown represented two distinct methods of culture, the largest bloom, grown by Mr. James Crichton, gr. to Mr. Collie, Balmagath, Cults, having four blooms on a plant, while fifteen to twenty of the smaller blooms were grown on a single plant. These latter were grown by G. Ross, gr. to Mr. D. McHardy, Cranford, Mannosfield. One of Mr. Crichton's specimens measured 32 inches in circumference. Cultural Certificates were awarded to Mr. J. Crichton and Mr. Ross, Cranford, for *Chrysanthemums* and Orchids. After an interesting discussion the proceedings were brought to a close with the usual votes of thanks.

Obituary.

JOHN DANIELS.—We regret to announce the death of this gardener, formerly at Swyncombe Gardens, Henley-on-Thames, and which took place near the latter town on November 1. Mr. Daniels had attained the age of seventy-seven years. It may be remembered that he gained a great reputation as a successful cultivator of *Bougainvillea spectabilis*, and for flowering sprays of which he was in the year 1860 awarded the Silver Medal of the Royal Horticultural Society. At that time, and for a few years previously, and for many years subsequently, he used to flower this magnificent plant in a large greenhouse, quite 400 square feet of glass being covered with its growths, and it would have covered more space if the terminal shoots could have extended further. The plant at Swyncombe was planted with its roots in proximity to the boiler, and the boiler projecting through to the inside of the house, made the end very hot, so that plants near it were attacked by red-spider, scale, &c., but it suited this plant exactly, as no insect except the green-fly infest the *Bougainvillea*. Later in point of time, Mr. Daniels had reason to think the roots had penetrated far beyond the restricted space originally allotted them, and to this fact he owed in some measure the wonderful vigour and floriferousness of this plant.

Mr. Daniels was born at Kniveton, near Ashbourne, Derbyshire, in the year 1816, and while quite a child he was placed with a nurseryman of the neighbourhood, who, perceiving in the lad marked ability, and trustworthiness of character, would send him away when quite young with a gang of men to lay out estates and effect improvements in pleasure-grounds. Here he remained for something like seven years, after which he became second gardener at Swithland Hall, in the county of Leicester, after three years service he became head gardener at Shenton Hall in the same county. Thence he went to Elsenham Hall, in Essex, where he remained for a period of nine years, and left in consequence of the death of the then owner of the estate, George Rush, Esq. In the year 1850 he went to Swyncombe Park to take charge of the gardens, and eventually of the estate, and here he remained as gardener to the Rev. C. E. Ruck-Keene, and to his son and successor, Major Ruck-Keene. In addition to cultivating the *Bougainvillea* with so much skill, he designed and planted a pinetum, which is filled with choice specimens. He improved the estate in many directions, and always with marked success, and the spring garden years ago was, perhaps, the best in the county, while in the woods he planted and naturalised many things of an extremely interesting character. About eighteen months ago he retired on a pension, living near the scene of his former work, and died as above stated.

His services were much in request as a judge at Oxford and elsewhere. A daughter living near Swyncombe survives him. R. D.

H. G. QUILTER, who died on November 23, at Felixstowe, aged seventy, was at one time a very prominent figure in matters horticultural. To our older readers he was well known in connection with the highly successful provincial show of the Royal Horticultural Society, held at the Lower Grounds, Birmingham, in June, 1872, which was opened by H.R.H. the Duke of Connaught, and resulted in a net profit of more than £2000. But Mr. Quilter won his spurs in outdoor-gardening previously by his enthusiasm and success in developing the late John Fleming's ideas of "Spring Gardening" (first displayed at Cliveden for the delectation of the famous Duchess of Sutherland, and afterwards carried to the highest pitch of perfection by Mr. Quilter at the Lower Grounds). The spring-bedding at the Lower Grounds, carried out in a most consistent though lavish manner for many successive years, showed residents in the Midland Counties how capable Mr. Fleming's ideas were of giving, at comparatively small cost, a most beautiful display of hardy flowers at the season when they are most rarely seen, and, consequently, most desired. Mr. Quilter was a great enthusiast in this matter, but he was also a good man of business. He had living close to him a huge population, who only needed something deserving attention to attract them, and he provided an outdoor entertainment of the most attractive kind, which drew them to the Lower Grounds in hundreds of thousands; and it is no extravagance to say that his display of "Spring Gardening" did more to make it popular than the efforts of any other man. He was seconded in his efforts by Mr. Fleming afore-named, Mr. Philip Frost of Dropmore, Mr. Peter Barr, and others. Subsequently he tried to develop other ideas at the Lower Grounds, which involved the building of a costly aquarium and theatre. These were peculiarly unsuccessful, and a large amount of capital was lost. Mr. Quilter then removed to the Bath Hotel at Felixstowe on the east coast, where he developed a large business, continued his gardening practice, and was mainly instrumental in promoting the development of that favourite watering place. He died, after a short illness, on November 23 last.

ISAAC DIXON.—We regret to announce the death of Mr. Isaac Dixon, who for upwards of thirty years had been with Messrs. Chas. Lee & Sons, Hammersmith, as Manager of their Feltham nursery. He travelled for the firm during nearly twenty years, and was consequently well-known and as much respected. He was on his journeys in the West of England, and having taken a chill was obliged to return home from Bath, and after a fortnight's illness, died on November 18, aged 58. The funeral took place on Saturday last at Feltham.

MR. HOWARD.—We regret to announce the death, at the age of fifty-eight years, of Mr. Howard, on November 27, at Southgate. He was well-known as a grower for Covent Garden Market, and previously as a gardener to E. Brand, Esq., Bedford Hill, Balham, where he gained considerable reputation as a cultivator. At the International of 1866, Mr. Howard caused a sensation by his exhibit of three or four magnificent specimens of *Eucharis*, shown in tubs 5 feet in diameter. At that time the *Eucharis* was a novelty. Mr. Howard was an enthusiastic supporter of the Gardeners' Orphan Fund and other charities.

EXCHANGE.

MR. W. S. LEE, Summerhouse, Woodseate, Sheffield, wishes to exchange three bound volumes of the *Gardeners' Chronicle*, from 1841—1843 inclusive, for other books on gardening.

ENQUIRY.

"He that questioneth much shall learn much."—Bacon.

MESEMBRYANTHEMUM.—The director of the Botanic Garden, Zurich (Professor Dr. Hans Schinz), is anxious to procure, by purchase or otherwise, one or more species of *Mesembryanthemum* of the section *Sphæroides*, such as *M. obconellum*, &c.

MARKETS.

COVENT GARDEN, November 30.

[We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

PRICES rule as last week.

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aram, per doz. bl.	4	0-8	Narciss, French, white,	12	0-3
Bouvardias, per bun.	0	6-1	— yellow, 12 bun.	3	0-6
Carnations, 12 blms.	1	0-2	Orchids:—		
Chrysanthemums, 12			Cattleya, 12 blms.	6	0-12
— bunches	0	6-8	Odontoglossum		
— doz. blooms	2	0-3	crispum, 12 blms.	2	0-6
Eucharis, per dozen	4	0-6	Pelargoniums, near-		
Gardenia, per dozen	2	0-4	let, p. 12 bun.	4	0-6
Hyacinth, Roman,			— 12 sprays	0	6-1
12 sprays	0	8-1	Pyrethrum, 12 bun.	2	0-4
Lilac (Fr.), per bun.	4	0-6	Roses, French, p. doz.	2	0-3
Lilium lancifolium,			— p. box of 100	2	0-3
— p. doz. blooms	2	0-3	— Tea, per dozen	0	6-2
Harrisii, p. doz.	0	6-9	— coloured, dozen	2	0-4
Lily of the Valley,			— yellow (Maré-		
per dozen sprays	2	0-3	chals), per doz.	2	0-6
Maiden Hair Fern,			— red, per dozen	1	0-1
12 bunches	4	0-6	Tuberose, 12 blms.	0	4-0
Marguerite, 12 bun.	1	6-3	Violets, Parmé, p. bn.	2	6-3
Mignonette, 12 bun.	2	0-4	— Czár, per bun.	2	0-2
Primula, dble. p. bun.	0	6-1	— English, per doz.	1	6-2

ORCHID-BLOOM in variety.

CHRYSANTHEMUM-BLOOM very plentiful, price is low in consequence.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Adiantum, per doz.	6	0-12	Ficus elastica, each	1	6-7
Aspidistra, per doz.	15	0-30	Foliage plants, doz.	12	0-42
— specimen, each	7	6-21	Marguerite, per doz.	6	0-12
Chrysanthemums, doz.	6	0-9	Mignonette, doz. pots	6	0-9
— large plants, each	1	6-2	Palms, various, each	2	0-10
Cyperus, per dozen	4	0-10	— specimens, each	10	6-8
Dracena, each	1	0-5	Pelargonium, scar-		
Erica, various, p. dz.	9	0-24	let, per dozen	3	0-6
Evergreen Shrubs, in			Poinsettias, per doz.	12	0-15
var., per dozen	6	0-24	Primulas, per dozen	6	0-9
Ferns, various, doz.	4	0-9	Solanums, per doz.	9	0-12
— small, per 100	4	0-6			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, per bush.	1	6-7	Pine-apples, St. Mi-		
Cobs, per 100 lb.	32	6-...	chael, each	2	6-7
Grapes, per lb.	1	0-3			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0	4-...	Lettuces, per doz.	1	3-2
Beet, red, per dozen	1	0-2	Mushrooms, pannel	1	3-2
Carrots, per bunch	0	4-6	Mustard and Cress,		
Cauliflowers, each	0	2-4	punnet	0	2-...
Celery, bundle	1	0-13	Parsley, per bunch	0	2-03
Cucumbers, each	0	4-10	Shallots, per lb.	0	3-...
Endive, per dozen	1	3-16	Tomatoes, per lb.	1	0-...
Herbs, per bunch	0	3-10	Turnips, per bunch	0	4-06
Leeks, per bunch	0	3-...			

POTATOS.

Supplies during the last few days have not been quite so heavy, and in consequence the market prices have had a tendency to harden. J. B. Thomas.

SEEDS.

LONDON: Nov. 23.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that the most interesting feature of the past few days has been a sudden demand for American Red, many cartloads of which have just found buyers here at the tempting rates current. There is no change in either Alsike, White, or Trefoil. Ryegrasses are neglected. Canary-seed is 1s. dearer. Hempseed continues cheap. Canadian Linseed is firm. There is nothing new in respect of either Haricots or Peas. Spring Tares are in fair request.

FRUITS AND VEGETABLES.

BOROUGH: November 28.—Quotations:—Cabbages, 2s. 6d. to 5s.; Cauliflowers, 4s. to 6s.; Savoys, 3s. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. 6d. per bag; Apples, 1s. 3d. to 6s. per bushel.

SPITALFIELDS: November 28.—Quotations:—Cabbages, 2s. 6d. to 3s.; Savoys, 3s. to 6s.; Cauliflowers, 4s. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 2s. 6d. per dozen bunches; Onions, 5s. to 6s. per bag; do., English, 5s. 6d. to 6s. 6d. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

STRATFORD: Nov. 28.—Quotations:—There has been a good supply of all kinds of produce at the above market during the past week, and a brisk trade has been done at the under-mentioned prices:—Cabbages, 1s. 6d. to 2s. 9d. per tally; Savoys, 1s. 9d. to 3s. 9d. do.; Greens, 1s. to 1s. 3d. per bag; Cauliflowers, 9d. to 1s. 3d. per dozen; do., 3s. to 7s. per tally; Turnips, 1s. 2d. to 1s. 9d. per dozen bunches; do., 20s. to 40s.

per ton; Carrots, household, 40s. to 50s. do.; do., cattle-feeding, 25s. to 35s. per ton; Parsnips, 8d. to 1s. per score; Mangels, 22s. to 26s. per ton; Swedes, 22s. to 27s. per ton; Onions, English, 150s. to 165s. do.; do., Dutch, 6s. to 6s. 6d. per bag; do., Valencia, 6s. to 6s. 6d. per case; Apples, English, 2s. to 5s. per bushel; Brussels Sprouts, 1s. 3d. to 1s. 6d. per half-sieve; do., 2s. 3d. to 2s. 9d. per bushel; Celery, 8d. to 1s. per roll; Horseradish, 1s. to 1s. 6d. per bundle.

FARRINGTON: Nov. 30.—Quotations: Celery, 8s. per dozen; Cauliflowers, 1s. to 1s. 3d. per dozen; Horseradish, 1s. 3d. per bundle; English Onions, 6s. 6d. to 7s. 6d. per cwt.; case Onions, 6s. 6d. per case; Sprouts, 1s. 6d. per half-bushel; cooking Apples, 4s. per bushel; Blenheim, 6s. 6d. to 7s. per bushel; Grapes, 1s. to 1s. 6d. per lb.; Almeria, 10s. 6d. to 12s. 6d. per barrel; Tomatos, English, 5d. to 7d. per lb.

POTATOS.

BOROUGH AND SPITALFIELDS: November 28.—Quotations ranged in price from 35s. to 100s. per ton.

STRATFORD: Nov. 28.—Quotations:—Magnums, dark-land, 35s. to 42s. 6d.; do., light, 40s. to 60s.; Bruces, 45s. to 65s.; Sutton's Abundance, 60s. to 75s. per ton.

FARRINGTON: Nov. 30.—Quotations:—Hebrons, 80s. to 100s.; Magnums, 40s. to 60s.; Snowdrops, 70s. to 90s.; Main Crop, 60s. to 90s.; Regents, 50s. to 70s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 154s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s.; new Mixture, 115s. to 130s.; and Straw, 35s. to 55s. per load.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending November 25.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
0	3 —	2	34	+ 485	— 8	2 —	220	46 8	5	24
1	3 —	1	37	+ 287	+ 29	2 —	175	24 6	16	32
2	2 —	—	31	+ 417	— 30	0 over	154	19 0	17	37
3	2 —	7	32	+ 503	— 3	5 +	151	18 8	15	43
4	3 —	4	36	+ 637	— 10	2 —	143	17 8	20	41
5	4 —	6	32	+ 554	— 17	3 —	142	20 7	17	44
6	2 —	8	29	+ 454	— 5	4 —	175	35 4	25	36
7	3 —	6	26	+ 723	— 65	1 +	165	27 1	16	35
8	4 —	11	28	+ 661	— 34	4 —	151	28 9	37	46
9	1 —	9	25	+ 525	— 52	3 —	189	29 9	29	32
10	4 —	11	26	+ 560	— 59	6 —	165	27 0	24	36
* 4 —	24	9	+ 828	— 44	3 —	163	24 8	16	54	

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

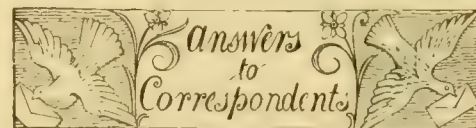
THE PAST WEEK.

THE following summary record of the weather for the week ending November 25, is furnished from the Meteorological Office:—

"The weather was exceedingly changeable, with frequent showers in most districts. Severe northern gales occurred over the United Kingdom generally at the commencement of the week, and slight gales on one or two subsequent occasions.

"The temperature was below the mean in all districts, the deficit being least (1°) in 'Ireland, N.,' and greatest (4°) in 'England, S. and S.W.,' 'Ireland, S.,' and the 'Channel Islands.' The highest readings were observed as a rule on the 25th, when the thermometer rose to between 51° and 53° in most districts, and to 54° in 'Ireland.' The lowest readings which occurred at various times in different parts of the country ranged from 20° in 'Scotland, E.,' and 22° in 'Ireland, N.,' to 28° in 'England, N.W.,' and to 35° in the 'Channel Islands.'

"The rainfall was less than the mean in most districts, but about equal to it in 'England, N.E.,' and in excess of the normal in 'England, E. and N.W.' Snow fell in many parts of the United Kingdom on the 19th, and again in several of the western and northern districts on the 22nd and 23rd. "The bright sunshine was in excess of the mean in most of the grazing districts, but about equal to it or a little below the mean in the Wheat-producing districts. The percentage of the possible duration ranged from only 5 in 'Scotland, N.,' to 25 in 'Scotland, W.,' 29 in 'Ireland, N.,' and 38 in 'England, S.W.'"



** Numerous Communications, Reports, &c., are unavoidably held over.

BEGONIAS FROM SELF-FERTILISED FLOWERS: *Begonia*. The colours are fairly constant.

BEGONIAS, VARIETY OF COLOUR IN SEEDLINGS RAISED FROM ARTIFICIALLY-FERTILISED BLOOMS: *Begonia*. Having regard to the great variety of the crosses you have made, we think that you are likely to get as good a selection of colour in the blossoms as if you had bought seeds.

BEGONIAS: *Subscriber*. The tubers should not be potted, but kept like Potatoes—that is, not perfectly dry. There should be some slight dampness about, such as would be found on an earthen floor in a cool cellar, or in a potting-shed. The tubers keep pretty well in boxes of sand several layers thick. Sawdust is a bad material to plunge them in, as in certain conditions of moisture it favours the growth of fungus or mouldiness, and when kept very dry, it would absorb the juices of the tuber; these latter may be potted and started in the latter end of March, in a temperature of 55° to 65°.

CHRYSANTHEMUMS: *Dartford*. We cannot undertake to name florists' flowers. Send them to some grower of these plants.

CELOGYNE CRISTATA: *T. P. W.* Probably the cool end of your Cattleya-house is not warm enough for Celogyne just as they are pushing forth their flower-spikes. Could you not afford them a somewhat warmer place, affording them but little aerial moisture, and not much at the root?

CUCUMBER ROOTS: *Constant Reader*. The little knobs on the roots are full of "eel worms," so often described and figured in these columns. Burn the plants, get fresh soil, and start afresh.

EARL'S COURT EXHIBITION OF 1893: *Exhibitor*. We know nothing whatever of the affairs of this venture, and cannot, therefore, answer your request for information about the distribution of prize-money.

ELECTROS: *D. T.* We cannot inform you; nor do we, as a rule, dispose of our electros.

FRUIT DRYING: *B. R.* See *Journal of Royal Horticultural Society*, 1890, p. 532.

GLADIOLUS AND DAHLIA: *Subscriber*. The former should be taken from the ground, and removed to a cool, dry cellar, with just what soil hangs to them. Do not clean off the "brood," or cut the tops. The latter should be cut off at 6 inches high, and be dug up without injuring the tubers. Do not use the stalk to pull them by, nor wrench the tubers from the rootstock. Pick off the soil, and stand them in an airy place for twenty-four hours before placing them also in the cellar. Be sure that the frost does not get at them, and if the cellar is very dry, or frost likely to enter it, lay the roots in sifted coal-ashes or dry soil.

HELIANTHUS SOLEIL D'OR: *Windleburn*. The same as *H. multiflorus* var. *grandiplenus*. We do not know the name of the raiser.

MICROSCOPICAL WORK: *B. R.* Apply to the Science and Art Department, South Kensington. We do not know anyone who gives private instruction in this subject.

NAMES OF FRUITS: *T. P. W.* The large Pear is Catillac, and the smaller Glou Morceau.—*J. S.* Glou Morceau.—*J. W.* 3, Adams' Pearmain—others appear to be local sorts unknown to us; 4, Pear Poire Gendron.—*E. L. H.* 1, May, probably, be Annie Elizabeth; 4, Col. Vaughan; 5, 6, Golden Nonpareil; others not known.—*L. S. W.* Pear Knight's Monarch.

NAMES OF PLANTS: *A. C.* 1, *Cupressus Lawsoniana*; 2, *Eragrostis pungens*; 3 *Cupressus Lawsoniana*; 4, *Thuja gigantea*; 5, *Juniperus virginiana*; 6, *Cupressus (Retinospora) obtusa*.—*P. R. D.* 1, a form of *Retinospora plumosa* of gardens; 2, *Juniperus taxifolia*; 3, a form of *Retinospora plumosa* of gardens; 4, *Cupressus Lawsoniana*; 5, *Retinospora filifera*; 6, a form of *Retinospora plumosa* of gardens.—*T. S. M.* *Basella alba*.—*Jos. T.* We have often stated that we do not undertake to name florist's flowers, send them to some grower.—*G. W.* *Hakea laurina*.—*T. A. D.* 1, *Croton Johannis*; 2, *Xylobium latifolium*; 3, *Anthericum lineare variegata*.—*S. B. L.* 1, *Lycaste leucantha*; 2, *Cymbidium sinense*.—*P. & Son.* *Ansellia gigantea*.

NARCISSUS BULBS: *W. K.* The grub found in the centre of the bulbs is that of the *Narcissus-fly*, *Merodon Narcissi*. You can do nothing beyond destroying all affected bulbs by burning them.

ONCIDIUM UNICORNE: *T. P. W.* This plant, as regards the flower, does not resemble *O. concolor*, as you seem to suppose. It is figured in *Bot. Mag.*, t. 3109. Panicle thin, straggling; flowers small, pale yellow.

PEACH TREE DYING OFF AT THE ROOT: *G. H. C.* The roots may have got into bad soil, or something that was injurious to the roots. It may be a case of loss of health from age; we cannot say without knowing more than you tell us about the tree.

PEAR SCALE ON BUSH TREES: *Subscriber.* It can be got rid of by the common cheap remedy of coating every branch and twig with a suffocating mixture of soft-soap, lime, sulphur, cow-dung (to make it stick), and soot to darken it. Put on as a thick paint with a brush, or as a thin wash that will pass through the nozzle of the garden engine, in that case doing it twice or thrice. A wash of Gishurst's Compound Soap, at the rate of 4 oz. to a gallon of hot water, is a good remedy, and a safe one if used before the middle of the month of February, but it must be used with a hard brush.

PLAGIARISM: *P. M. O.* The charge is not made out. At p. 151 you will find adequate acknowledgment.

POTATOS FROM ZAFFRA: *J. A. C.* Scotch Champion, largely cultivated in Ireland and the North some years ago, but of late years it has almost gone out of cultivation in this country, although still more or less grown in Ireland and Scotland.

PROTECTING SMALL FRUITS FROM BIRDS BY MEANS OF A PERMANENT FRAME-WORK OF GAS PIPING AND WIRE-NETTING: *W. C.* It answers every expectation, if you admit the birds at seasons when they do not destroy the buds or eat the fruit.

RATING OF NURSERY AND MARKET GARDENS: *P. & Sons.* The assessment is in respect of one-fourth of the nett annual value, but this does not apply to the poor-rates. See *Gardeners' Chronicle*, May 21, 1887, p. 676.

SIX NEW BORDER CARNATIONS: *Jersey.* Pride of Great Britain, yellow; Duke of York, crimson, clove-scented; Duchess of Fife, fine flower, rosy-pink; Horace, daz'ling scarlet; Ketton Rose, deep pink; White Dame, pure white, strongly fragrant. These are new varieties, shown by Mr. T. Ware.

COMMUNICATIONS RECEIVED.—Dutch Horticultural Society. *W. B.*—*E. W. F.*—*W.* and *J. B.*—Prof. Oudemans, Amsterdam.—*T. H. C.*—*G. Subrai*, La Mortola.—*H. T.*—*C. W.*—*J. H. B.*, Utrecht.—*T. D. S.*—*F. E. T.*—Sutton & Sons.—Mrs. Burton.—Customs (next week).—*H. F.*—*Dr. P.*—*J. H. C.*—*F. W. B.*—*H. C.*—*J. S.*—*D. T.*—*C. S.*—*C. H. Q.*—*W. G.*—*A. Astley*.—*H. H. D.*—*A. F.*—*E. C.*—*M. T.*—*R. D.*—*V.*—*Arborea*.—*A. D.*—*J.*, Guiana.—*H. A. B.*—*W. A. C.*—*J. H.*

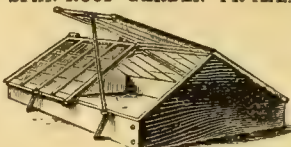
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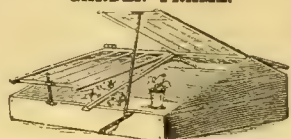
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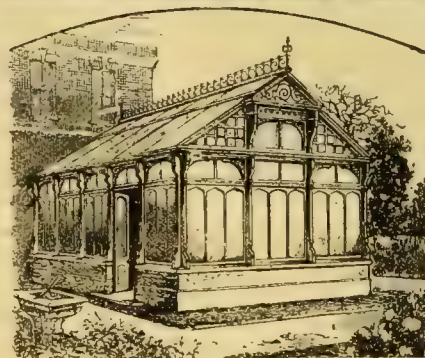
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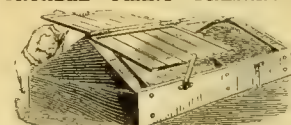


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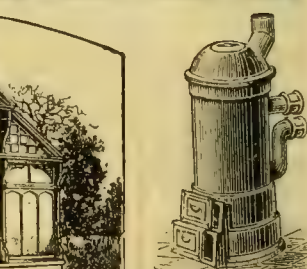
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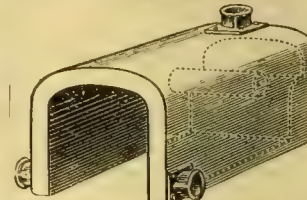


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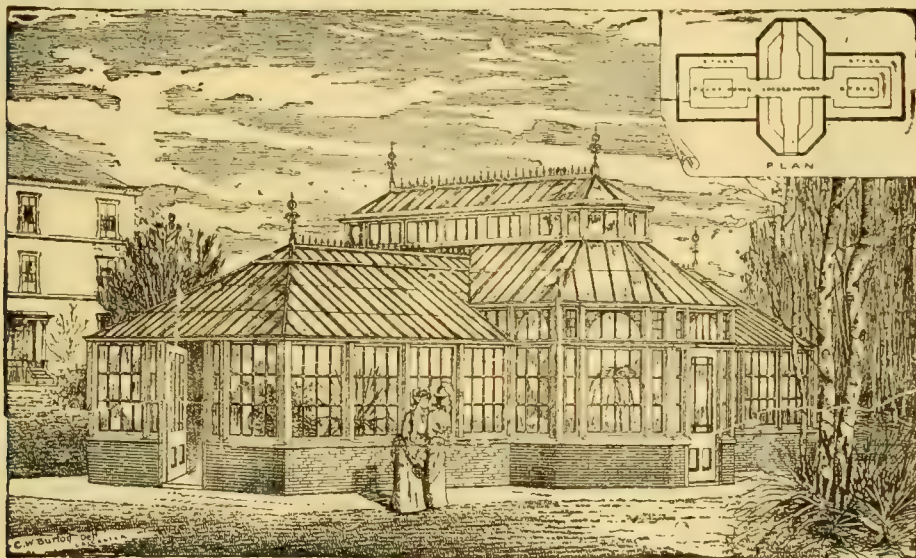
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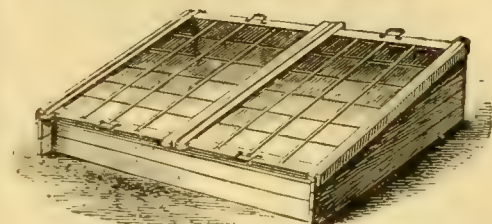
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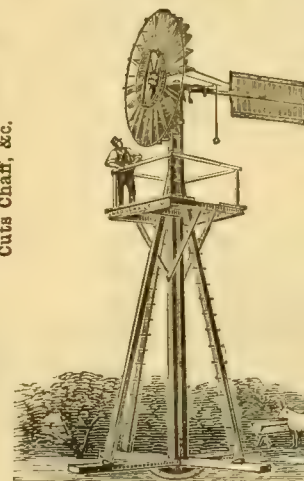
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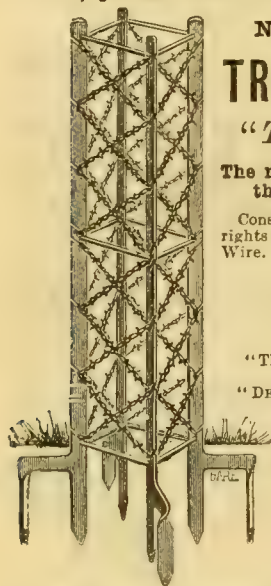
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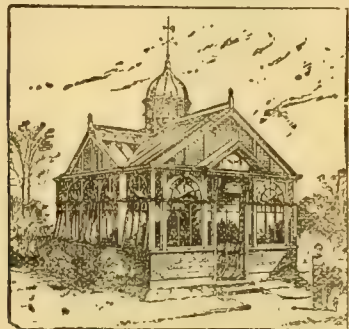
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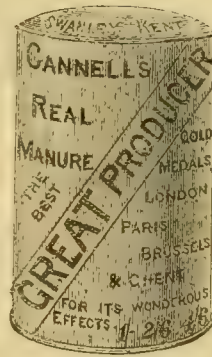
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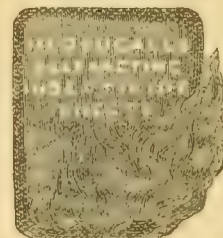
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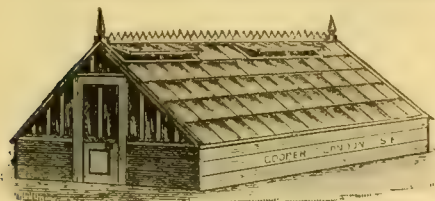
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THE AMATEUR FORCING HOUSE, TENANT'S FIXTURE (Span-roof).

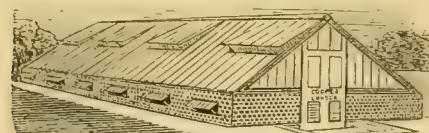


These houses are offered at an exceedingly low rate, and should be readily approved by both amateur and professional gardeners, as brickwork, which is very expensive to a small house, is entirely dispensed with.

The utility of such a house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request but almost hitherto unknown.

Specification.—Framework substantially constructed of red deal; the whole of sides, and 2 ft. 6 in. of ends, boarded with well-seasoned tongued and grooved matchboards. Half-glass door, complete with rim lock and brass fittings, in one end; glass 16 oz. throughout, English cut. Ventilators supplied according to size of house, and stays necessary for opening same; stages for plants each side of house, all woodwork painted one coat of good oil paint, and the whole structure securely packed and placed on rail.

Lot.	Length.	Width.	Height.	Usual Price.	Sale Price.
				Packed on rail.	Packed on rail.
1 to 7	7 ft.	5 ft.	7 ft.	£2 10 0	£2 0 0
8 to 10	8 ft.	5 ft.	7 ft.	3 0 0	2 5 0
11 to 12	9 ft.	6 ft.	7 ft. 3 in.	3 10 0	2 10 0
13 to 22	10 ft.	7 ft.	7 ft. 6 in.	4 10 0	3 10 0
23 to 29	12 ft.	8 ft.	8 ft.	5 10 0	3 15 0
30 to 41	15 ft.	10 ft.	8 ft. 6 in.	7 15 0	5 10 0
42 to 48	20 ft.	10 ft.	9 ft.	10 15 0	7 10 0
49 to 51	15 ft.	10 ft.	9 ft.	15 5 0	10 0 0
52 to 54	50 ft.	10 ft.	9 ft.	27 0 0	20 0 0
55 to 56	100 ft.	10 ft.	9 ft.	45 0 0	25 0 0



Specification.—Built for brickwork, 3 feet high, of thoroughly well-seasoned red deal; roof ventilation according to size; door at one end; all 21-oz. glass; painted one coat.

Lot.	Usual Price.	Sale Price.
	Packed on rail.	Packed on rail.
229 to 235	27 by 9	£9 0 0
236 to 242	20 by 12	11 0 0
243 to 246	20 by 14	14 10 0
247 to 250	40 by 9	17 0 0
251 to 255	40 by 12	21 0 0
256 to 257	40 by 14	25 0 0
258 to 260	100 by 9	40 0 0
261 to 267	100 by 12	48 0 0
268 to 281	100 by 14	55 0 0
282 to 342	Ventilating boxes for Side Walls	4 9

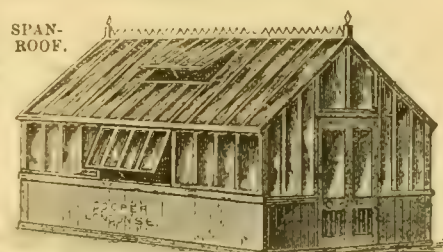
SPAN-ROOF FORCING HOUSE.

The illustration shown will convince all practical minds of the importance and utility of this class of house for Gentlemen, Nurserymen, Market Gardeners, and all those who require a cheap strong House for Forcing, or growing Cucumbers, Tomatoes, Melons, &c.

"AMATEUR" SPAN-ROOF AND LEAN-TO GREENHOUSES.

TENANT'S FIXTURES.

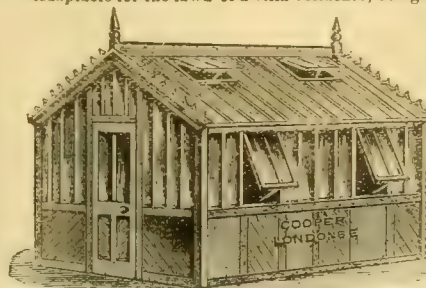
Made especially for Amateurs at a nominal figure, thereby coming within reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectable by any handy-man or gardener in a few hours. Framework is substantially constructed of red deal, the lower part being filled in with well-seasoned tongued and grooved matchboards. The house is fitted with door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and stages for each side, and good 16oz. glass throughout. All parts securely packed, and put on rail.



Lot.	Span roof.	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
						Packed on rail.	Packed on rail.
57 to 71	5 ft.	7 ft.	5 ft.	7 ft.	4 ft.	£2 16 0	£2 5 0
72 to 73	8 ft.	5 ft.	7 ft.	4 ft.	3 10 0	2 15 0	
77 to 103	9 ft.	6 ft.	7 ft. 3 in.	4 ft.	4 0 0	3 0 0	
109 to 121	10 ft.	7 ft.	7 ft. 6 in.	4 ft. 6 in.	5 0 0	4 0 0	
122 to 149	12 ft.	8 ft.	8 ft.	5 ft.	6 0 0	4 10 0	
150 to 170	15 ft.	10 ft.	8 ft. 6 in.	5 ft.	8 10 0	6 10 0	
171 to 176	20 ft.	10 ft.	9 ft.	5 ft. 6 in.	12 0 0	9 0 0	
177 to 184	25 ft.	10 ft.	9 ft.	5 ft. 6 in.	17 0 0	12 0 0	
185 to 189	50 ft.	10 ft.	9 ft.	5 ft. 6 in.	30 0 0	23 0 0	
190 to 197	100 ft.	10 ft.	9 ft.	5 ft. 6 in.	50 0 0	30 0 0	
198 to 201	30 ft.	10 ft.	8 ft. 6 in.	5 ft.	20 0 0	14 0 0	
202 to 211	Lean-to	7 ft.	5 ft.	7 ft.	4 ft.	2 8 0	2 0 0
212 to 221	8 ft.	6 ft.	7 ft. 3 in.	4 ft.	3 10 0	2 15 0	
222 to 225	12 ft.	8 ft.	8 ft.	5 ft.	5 10 0	4 0 0	
226 to 228	15 ft.	10 ft.	8 ft. 6 in.	5 ft.	8 0 0	5 15 0	

SPAN-ROOF VILLA CONSERVATORIES.

Adaptable for the lawn of a villa residence, being well and substantially-built, constructed of the best materials, and artistically finished, with diagonal panels and barge-boards. The framework is composed of 2 in. by 3 in. red deal, the lower part doubly-lined with tongued and grooved matchboards, and the roof properly fitted with sashes, which facilitates fixing or removing of same without disturbing glass.



The houses are fitted with a half-glass door, complete with rim lock, brass fittings and key, and is supplied with lattice staging for each side, footpath the entire length; gutters, down pipes, suitable ventilators, and necessary ironwork for opening same. All woodwork painted two coats of good oil paint, glass cut to sizes, and all parts securely packed on rail. Prices:—

Lot.	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
					Packed on rail.	Packed on rail.
313 to 351	9 ft.	6 ft.	7 ft.	4 ft. 6 in.	£7 10 0	£5 10 0
352 to 358	12 ft.	8 ft.	8 ft.	5 ft. 6 in.	10 0 0	7 0 0
359 to 363	15 ft.	8 ft.	8 ft. 6 in.	5 ft. 6 in.	12 0 0	8 10 0
364 to 371	20 ft.	9 ft.	9 ft.	6 ft.	16 16 0	12 0 0
372 to 347	25 ft.	9 ft.	9 ft.	6 ft.	21 0 0	15 0 0

21 oz. for Roof 5 per cent. extra.

SALE CATALOGUE POST-FREE.—SEE NEXT PAGE.

CONTINUED FROM PRECEDING PAGE.

A detailed illustration of a wooden crate or box, shown from a three-quarter perspective. The crate is constructed from numerous vertical wooden slats. On the front face, the text "COOPER, LONDON." is printed in a bold, serif font. The crate is shown sitting on a small patch of ground, with a few lines indicating its shadow.

LOT.					Usual Price.	Sale Price.
375 to 386-1	Light Frame	4 ft. by 3 ft.	...	£0 18	...	£0 14
387 to 397-2	"	"	6 ft by 4 ft.	...	1 12	1 2
398 to 405-1	"	"	6 ft. by 4 ft.	...	1 10	1 0
406 to 408-2	"	"	8 ft. by 6 ft.	...	2 14	1 18
409-3	"	"	12 ft. by 6 ft.	...	3 15	2 5

An illustration of a large, rectangular, segmented object, possibly a book cover or a large sheet of paper, with the text "LONDON" visible on the right side. The object is shown from a perspective view, revealing its thickness and the segmented nature of its surface. The segments are arranged in a grid-like pattern. The text "LONDON" is printed in a serif font on the right edge of the object. The illustration is rendered in a classic, engraved style with fine lines and shading to create a sense of depth and texture.

	Each.	s. d.		Each.	s. d.
812 to 827—12 in. by 12 in.	...	7 6	...	5 6	
828 to 839—14 in. by 14 in.	...	8 6	...	6 6	
840 to 853—16 in. by 16 in.	...	9 0	...	7 0	
854 to 868—18 in. by 18 in.	...	10 0	...	8 0	
869 to 871—20 in. by 20 in.	...	11 0	...	9 0	
872 to 887—22 in. by 22 in.	...	12 0	...	10 0	
888 to 896—24 in. by 24 in.	...	13 6	...	11 0	

Putty, prepared especially for Greenhouse work.—Best, 6s. per cwt.; packages, 6d. per cwt.

A detailed black and white illustration of a large, boxy industrial machine, possibly a steam engine or a pump. The machine has a prominent horizontal section in the middle, which appears to be a large cylinder or a hopper. On the right side of this section, the words "COOPER LONDONSE" are inscribed in a bold, sans-serif font. The machine has various pipes, valves, and structural details, suggesting a complex mechanical design. The overall style is that of a technical drawing or a historical illustration.

Best Quality, Perfect Slabs, 27 in. wide.					
Usual Price.			Sale Price.		
	s.	d.		s.	d.
3 ft. long	1	0	7 ft. long	2	6
4 ft. "	1	8	8 ft. "	2	6
5 ft. "	1	8	9 ft. "	2	11
6 ft. "	1	11	10 ft. "	3	6

LOT.	NO.	ft. in.	ft. in.	ft. in.		
1934 to 1943—1.	Suitab'le for Terrier ...	2 5	1 6	2 5	1/-	12/6
1944 to 1956—2.	Colleys, Re-trievers & Spaniels...	3 6	2 3	3 4	2/-	21/-
1957 to 1968—3.	St. Bernards, Mastiffs & Newfoundlands...	4 6	2 6	4 2	36/-	3 -/-

A black and white illustration of a bottle of Cooper's London stout. The bottle is dark with a light-colored label featuring a circular emblem. It is placed inside a simple wooden frame that has 'COOPER LONDON' printed on its horizontal bars. The frame is supported by four legs.

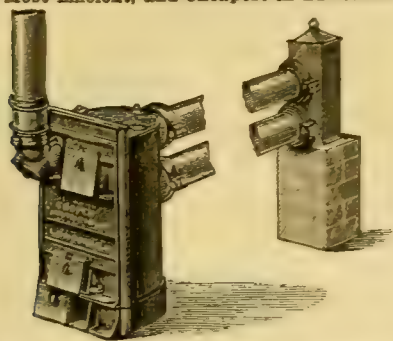
LOT.		Sale Price.	Usual Price.
1989 to 1987—No. 0	... ..	£0 15 0	£1 0 0
1988 to 1990—No. 1	... ..	1 0 0	1 10 0
2000 to 2021—No. 2	... ..	1 10 0	2 5 0
2022 to 2043—No. 3	... ..	2 0 0	3 5 0
2044 to 2057—No. 4	... ..	2 5 0	3 10 0
2058 to 2069—No. 5	... ..	2 10 0	4 0 0

LOT.	Usual Price.	Sale Price.
2299 to 2318—1 ft. 8 in. by 1 ft. 6 in. ...	£1 5s. ...	18s.
2319 to 2337—2 ft. 6 in. by 1 ft. 10 in. ...	£1 10s. ...	20s.
2338 to 2351—4 ft. by 2 ft. ...	£3 0s. ...	40s.

WM. COOPER, 747 to 755, OLD KENT ROAD, LONDON, S.E.

WILLIAM COOPER'S SEVENTH ANNUAL CLEARANCE SALE.

CONTINUED FROM PRECEDING PAGE.

"INVINCIBLE" HOT-WATER APPARATUS.
Most Efficient, and Cheapest in Existence.

Requires no sunk stakehole, and no brick setting. Will last all night without attention. Will burn house cinders, therefore costs next to nothing for fuel. Anyone can fix it. A child can stoke it. Success guaranteed. No 1 boilers only, capable of heating 75 ft. 4 in. piping.

LOT.	Sale Price.	Usual Price.
2070 to 2250	£1 15s. 0d.	£2 15s. 0d.

Cost of Complete Apparatus for Greenhouses with 4 in. pipes, flow and return along one side cut and fitted, so that if the internal measurement of the greenhouse is given, the apparatus will be sent completely ready for fixing, an advantage which will be appreciated by all. Securely and carefully packed on rail at the following respective prices:—7 ft. by 5 ft., £2 12s. 6d.; 9 ft. by 6 ft., £2 17s. 6d.; 10 ft. by 7 ft., £3; 12 ft. by 8 ft., £4; 15 ft. by 10 ft., £4; 20 ft. by 10 ft., £5; 25 ft. by 10 ft., £4.

LOT.	Usual Price.	Sale Price.
2251—About 12,000 yds. 4 in. Socket Hot-water Pipes, in 6 ft. and 9 ft. lengths, at per yd.	2s. 3d.	1s. 9d.
2252 to 2286—Sets of Stoking Tools.	3s. 0d.	2s. 0d.
2297—About 1½ cwt. of Round India-Rubber Rings, for 4-in. Socket H-W. Pipes, at per lb.	6s. 0s.	3s. 6d.
2298—About 2 cwt. Square India-Rubber Rings, for 4-in. Expansion Joints, at per lb.	4s. 6d.	2s. 3d.

TIMBER DEPARTMENT.

WELL SEASONED RED DEAL SPECIFICATION.

LOT 2352 to 2463.
MATERIALS REQUIRED FOR SPAN-ROOF 100-FT. BY 12-FT. CUCUMBER-HOUSE.

Best Red Deal, all planed, rabbetted, &c., ready for use, Door and Ventilators made.

Any alteration can be made to suit any size house at a corresponding alteration in price.

105 ft. 1½ by 6 Ridge,	
105 ft. 1½ by 4 Capping,	
230 ft. 3 by 3½ Plate,	
210 ft. ½ by 3 Drp.,	
4—8 ft. 2½ by 3 End Rafters,	
120—8 ft. 1½ by 3 Bars,	
15 Ventilators about 4 ft. by 2 ft.	
15 Ventilators, Seats about 60 ft.	
1 Door and Frame 6 ft. by 2 ft. 6 in.	

Packed free on rail. Usual Price, £9 10s. Sale Price, £7.

LOT.	Usual Price.	Sale Price.
2464—93,000 ft. Run. No. 1 Sashbar per 100 ft. run	3s. 0d.	2s. 0d.
2465—137,000 ft. Run. No. 2 Sashbar per 100 ft. run	3s. 9d.	2s. 9d.
2466—56,000 ft. Run. No. 3 Sashbar per 100 ft. run	5s. 0d.	3s. 6d.
2467—177,000 ft. Run. No. 4 Sashbar per 100 ft. run	6s. 6d.	4s. 6d.

£10,000 worth of other Prepared Timber as per separate list, 25 per cent. off, to clear.

LOT.	Usual Price.	Sale Price.
2468—375 Top and Side Ventilators, 2 ft. by 2 ft. 4 in.	2s. 0d.	1s. 6d.
2469—270 Marginal Light Doors, 6 ft. 6 in. by 2 ft. 6 in.	12s. 0d.	7s. 0d.
2470—1,550 Squares 6 in. Tongued, Grooved and Beaded Match Board	7s. 6d.	5s. 6d.
2471—750 Squares 6 in. Feather Edge Boards	7s. 6d.	5s. 0d.
2472—700 Squares 1 in. Floor Boards	12s. 0d.	9s. 0d.
2473—450 Machine-turned Finials, per doz.	6s. 0d.	3s. 0d.
2474—125 doz. Casement Stays for opening Ventilators, per doz.	6s. 0d.	3s. 0d.
2475—149,000 ft. Run Slatting Battens, ½ by 2 ... per 100 ft.	1s. 3d.	1s. 1d.

DEALS, 3 by 11, Yellow, 4d.; 3 by 9, 3d.; 3 by 7, 2d.; 2½ by 7, 1½d.; 2 by 7, 1d.; 2 by 6, 1d.

FOR SECTIONS OF THE ABOVE, SEE SEPARATE SHEET.
CUTTING FLATTING, 9d. per 100 ft.; Deeping, 2s. 3d. per dozen 12 feet.

PLANED EXTENDED TRELLIS.
MADE OF BEST YELLOW DEAL.

LOT.	Open.	Usual Price.	Sale Price.
2476 to 2551—12 ft. by 1½ ft.	...	2 8	2 0
2552 to 2601—12 ft. by 2 ft.	...	4 0	3 0
2602 to 2650—12 ft. by 2½ ft.	...	4 6	3 6
2651 to 2699—12 ft. by 3 ft.	...	5 6	4 0
2699 to 2731—12 ft. by 3½ ft.	...	6 0	4 6
2732 to 2753—12 ft. by 4 ft.	...	7 6	5 6
2754 to 2789—12 ft. by 5 ft.	...	8 9	6 3
2789 to 2850—12 ft. by 6 ft.	...	10 6	7 6

All Timber consigned at the Cheap Timber Rate to all parts of the Country.

SUNDRIES DEPARTMENT.

LOAM—SURREY.

LOT.	Usual Price.	Sale Price.
2851. Splendid Quality, full of Yellow Fibre.		
Usual price: 2s. 6d. per sack; 5 for 12s.; 10 for 20s.		
Sale Price: 1s. 6d. per sack; 5 for 7s.; 10 for 13s. 6d.		
In Truck Loads, F.O.R., usual price, 16s. per ton; sale price, 14s. per ton.		

WILLIAM COOPER'S GENERAL POTTING COMPOST.

2852. Specially Prepared.	
Usual price: 2s. 6d. per sack; 6 for 13s.; 10 for 20s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	

WILLIAM COOPER'S CELEBRATED CHRYSANTHEMUM COMPOST.

2853. Usual price, 2s. per bushel.	
Sale price, 1s. 6d. per bushel.	

WILLIAM COOPER'S PREPARED COMPOST FOR POTTING FERNS.

2854. Specially Prepared.	
Usual price: 2s. 6d. per sack; 6 for 13s.; 10 for 20s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	

WILLIAM COOPER'S PREPARED COMPOST FOR POTTING BULBS.

2855. Specially Prepared.	
Usual price: 2s. 6d. per sack; 6 for 13s.; 10 for 20s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	

2856. LEAF SOIL, BEECH and OAK, WELL DECAYED.

Usual price: 2s. 6d. per sack; 6 for 13s.; 10 for 20s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	

2857. THE ORIGINAL CELEBRATED ORCHID PEAT.

ALL Rich Brown, Pure Branched Fibre.	
SELECTED IN TURVES.	
With Dust and Roots taken out.	
Usual price: 4s. per sack; 6 for 25s.; 10 for 45s.	
Sale price: 3s. per sack; 6 for 18s.; 10 for 25s.	

2858. BEST BROWN FIBROUS PEAT,

FOR HANDBOOK AND STOVE PLANTS.	
Usual price: 2s. 6d. per sack; 6 for 13s.; 10 for 20s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	
Special quotations for Truck Loads, F.O.R.	

2859. GOOD GENERAL PEAT,

FOR FERNS, &c.	
Usual price: 2s. per sack; 6 for 10s.; 10 for 15s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	
Special quotations for Truck Loads, F.O.R.	

2860. RHODODENDRON PEAT.

Usual price: 3s. per sack, 6 for 10s.; 10 for 15s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	

2861. SPECIAL OFFER OF RICH BROWN LOOSE PEAT.

Of the very best quality. All waste extracted.	
Ready for use.	
Usual price: 2s. per sack; 6 for 10s.; 10 for 15s.	
Sale price: 1s. 6d. per sack; 6 for 7s. 6d.; 10 for 13s. 6d.	
Special quotations for Truck Loads, F.O.R.	

2862. WILLIAM COOPER'S SUNSHADE.

Supersedes all other preparations of the kind.	
The cheapest, most efficient, and convenient preparation for shading greenhouses, conservatories, glass roofs, and windows of all descriptions. Is applied cold—an enormous advantage over preparations requiring to be used whilst hot. May be used either inside or outside, and produces a pleasing effect. Is not washed off by rain, but can be instantly removed when desired by rubbing over with a brush whilst it is wet. Made in various colours—White, Pale Blue, and Pale Green.	
Usual prices, in tins: 1 lb., 1s.; 2 lb., 2s.; 7 lb., 5s.	
Sale prices: 1 lb., 4d.; 2 lb., 8d.; 7 lb., 2s.	

2883. COOPER'S WONDERFUL NEW MUSHROOM SPAWN.

From many year's experience I believe this brand of Spawn to be the very best procurable—fresh, very best quality, producing abundant crops of Superior Fleshy Mushrooms.

Usual price, 4s. per bushel. Sale price, 2s. per bushel.

INSTRUCTIONS.

Mushrooms may be grown in a warm cellar or shed in winter, or in the open air in summer. Take partially dry, fresh horse manure and lay it in a heap to ferment, turn and mix it well every few days, and when well and equally fermented, which will be in from ten to fifteen days, it may be made into a bed 4 feet wide and about 2 feet deep, making it well together, and heating or treading it firmly. As soon as the temperature of the bed falls from 75° to 60°, the spawn may be inserted in pieces about the size of a walnut, about 2 inches deep and 6 inches apart. Cover with leafy soil about 2 inches deep, and beat it down evenly and firmly, placing a garden mat over the bed. Water when necessary with lukewarm water, and expect Mushrooms in from four to six weeks.



2884. WILLIAM COOPER'S GENERAL FERTILIZER.

FOR FLORISTS, GARDENERS, and AMATEURS.

This high-class Manure is strongly recommended for all kinds of Flowers, Fruit Trees, and Vegetables, and will be found invaluable, both for improving and increasing the produce.

SUITABLE FOR ALL CROPS.

POTATOS, KITCHEN GARDEN PRODUCE, VINE, FRUIT TREES, ROSES, POT PLANTS, &c.	
Usual Price: Tins, 4d.; 7-lb. bags, 1s.; 14-lb. bags, 2s.; 28-lb., 4s.; ½-cwt., 7s.; 1-cwt., 13s.	
Sale Price: Tins, 3d.; 7-lb. bags, 9d.; 14-lb. bags, 1s. 6d.; 28-lb., 3s.; ½-cwt., 6s.; 1-cwt., 10s.	

2884A. SILVER SAND (COARSE OR FINE).

2 cwt. sacks. Usual price, 3s. 3d.; sale price, 2s. 3d. Special offer. Four-ton truck on rail at pit loose, 20s.

2865. BEST COCOANUT-FIBRE REFUSE

(FRESH AND CLEAN).	
9d. per sack; 10 sacks, 7s.; 15 sacks, 10s.; 20 sacks, 12s. 6d.; 30 sacks, 18s. Sacks included. Truck, 100s., free on rail over 2 tons, 30s.	

Moistens in Heat. Holds Heat in Winter. Invaluable for Potters, Planting, Forcing, Decorating, and used on Strawberry beds is preferable to straw, keeping the fruit clear from grit, and at the same time nourishing the plants. For lightening heavy soils it is particularly useful, and when the soil is light and dry, it is of great advantage as a mulch. All slugs and insects are destroyed by its use.

As I have not a great quantity of this in stock, and not being able to replace at the price, I will, if not insured otherwise, send other goods to value should it be all sold before I receive your order. First come, first served.

2866. SPECIAL OFFER TO THE TRADE

100 tins Sunshade and 100 tins Fertilizers, to retail at 4d. and 6d. each. 30s. on rail.

ODD GREENHOUSES.

LOT. ALL HOUSES ARE COMPLETE AS PER LIST.	
2866A Lean-to Amateur Greenhouse, 49 ft. by 14 ft., for 2 ft. 6 in. Brickwork. Usual price £25. Sale price, £15.	
2867 Lean-to, Complete for Brickwork, 17 ft. 6 in. by 7 ft. Door in front left end. Usual price, £7. Sale price, £4.	
2867A Span Roof Greenhouse, Complete, 14 ft. by 10 ft., for Brickwork. 1 ft. 6 in. Side Lights. Usual price, £3 10s. Sale price, £4 5s.	
2868 Lean-to Greenhouse, Complete, Door in front, 6 ft. 6 in. by 7 ft. 6 in. Usual price, £3 10s. Sale price, 30s.	
2869 Lantern Roof Conservatory, Complete, 10 ft. by 8 ft. Nearly new. Usual price, £17. Sale price, £7.	
2870 Circular Light Span-Roof Conservatory, 12 ft. by 8 ft. Usual price, £14 10s. Sale price, £7.	
2871 Circular Light Span-Roof Conservatory, 15 ft. by 10 ft. Usual price, £19. Sale price, £9 10s.	
2872 Span-Roof Conservatory, 20 ft. by 10 ft., Roof in Sashes. Usual price, £20 10s. Sale price, £10.	
2873 Lean-to Greenhouse for Brickwork, 15 ft. by 10 ft. Usual price, £5. Sale price, £4.	
2874 Span-Roof Greenhouse, 40 ft. by 9 ft., for Brickwork. 2 ft. 6 in. Side Lights. Usual price, £15. Sale price, £15.	
2875 Lean-to Greenhouse for Brickwork, 9 ft. by 6 ft. Usual price, £4. Sale price, £2.	
2875A ½-Span-Roof Greenhouse for Brickwork, 25 ft. by 10 ft. Usual price, £17. Sale price, £10.	
2876 9 Odd Cucumber Frames, about 6 ft. by 4 ft., 20 lights, 4s. each to clear. Usual price, 20s.	

SALE CATALOGUE POST-FREE.

WM. COOPER, 747 to 755, OLD KENT ROAD, LONDON, S.E.

WALTON HEATH LOAM!!!
WALTON HEATH LOAM!!!
WALTON HEATH LOAM!!!

D. PITT AND SONS, Contractors, Reigate, Surrey, beg to announce that they can supply the very best quality Walton Heath Yellow Fibrous Loam, delivered into trucks, at Reigate Town Station, at 7s. 6d. per ton. Second quality ditto, at 5s. 6d. per ton.
REIGATE SILVER SAND, at 7s. 6d. per ton.

W. H. LASCELLES & CO.,
HORTICULTURAL BUILDERS,
121, BUNHILL ROW,
LONDON, E.C.



CONSERVATORIES,
GREENHOUSES,
ORCHID HOUSES,
VINERIES,
PEACH HOUSES, &c.
Plans and Estimates Free.

GLASS! CHEAP GLASS!

In Stock Sizes.
 15-oz., per 100 ft., 8s. 6d. (12x10, 18x12, 18x14, 24x14
 21-oz., " 11s. 9d. (14x12, 20x12, 18x16, 24x16
 14 x 3 Prepared Sash Bar at 6s. per 100 feet.
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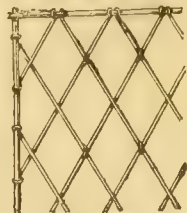
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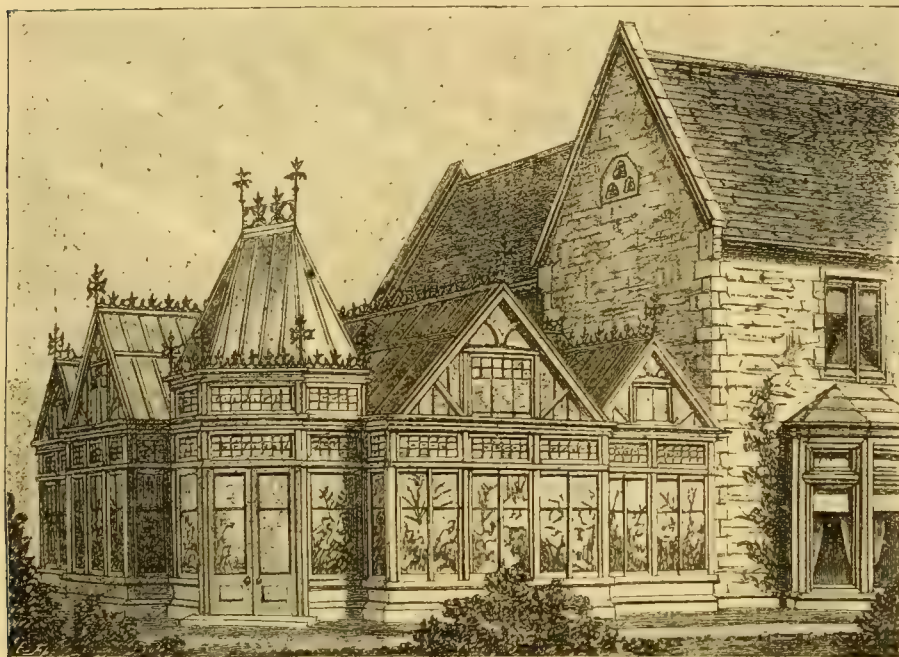
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SERIES.

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"GARDENERS' CHRONICLE."

Continued Increase in the Circulation.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per Cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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"NEWTON WONDER,"

as the best late Apple in cultivation; fruit keeps till June;
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100 GARDEN LIGHTS (New), 6 × 4 ft.,
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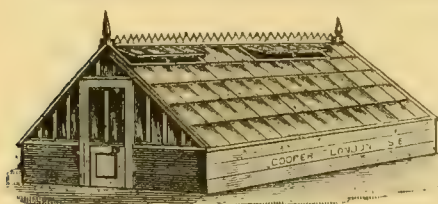
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Goods are offered subject to being on hand on receipt of reply. Cash to accompany all orders, and prices to be strictly *nett*. All orders will be executed in rotation, and carefully packed and put on rail, except those otherwise stated.

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THE AMATEUR FORCING HOUSE. TENANT'S FIXTURE (Span-roof).

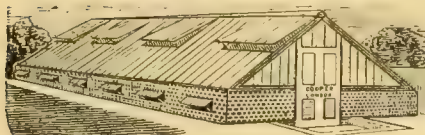


These houses are offered at an exceedingly low rate, and should be readily approved by both amateur and professional gardeners, as brickwork, which is very expensive to a small house, is entirely dispensed with.

The utility of such a house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request but almost hitherto unknown.

Lot.	Length.	Width.	Height.	Usual Price.	Sale Price.
1 to 7	7 ft.	5 ft.	7 ft.	£2 10 0	£2 0 0
8 to 10	8 ft.	5 ft.	7 ft.	3 0 0	2 5 0
11 to 12	9 ft.	6 ft.	7 ft. 3 in.	3 10 0	2 10 0
13 to 22	10 ft.	7 ft.	7 ft. 6 in.	4 10 0	3 10 0
23 to 29	12 ft.	8 ft.	8 ft.	5 10 0	3 15 0
30 to 41	15 ft.	10 ft.	8 ft. 6 in.	7 15 0	5 10 0
42 to 48	20 ft.	10 ft.	9 ft.	10 15 0	7 10 0
49 to 51	25 ft.	10 ft.	9 ft.	15 5 0	10 0 0
52 to 54	50 ft.	10 ft.	9 ft.	27 0 0	20 0 0
55 to 56	100 ft.	10 ft.	9 ft.	45 0 0	25 0 0

SPAN-ROOF FORCING HOUSE.



The illustration shown will convince all practical minds of the importance and utility of this class of house for Gentlemen, Nurserymen, Market Gardeners, and all those who require a cheap strong House for Forcing, or growing Cucumbers, Tomatoes, Melons, &c.

Lot.	Length.	Width.	Height.	Usual Price.	Sale Price.
229 to 235	20 by 9	20 by 12	11 0 0	£3 0 0	£3 0 0
236 to 242	20 by 12	11 0 0	8 0 0	11 0 0	8 0 0
243 to 248	20 by 14	14 10 0	11 0 0	14 10 0	11 0 0
249 to 250	40 by 9	17 0 0	12 0 0	17 0 0	12 0 0
251 to 255	40 by 12	21 0 0	16 0 0	21 0 0	16 0 0
256 to 257	40 by 14	25 0 0	20 0 0	25 0 0	20 0 0
258 to 260	100 by 9	40 0 0	25 0 0	40 0 0	25 0 0
261 to 267	100 by 12	48 0 0	33 0 0	48 0 0	33 0 0
268 to 281	100 by 14	55 0 0	40 0 0	55 0 0	40 0 0
282 to 342	Ventilating boxes for Side Walls	4 9	2 3	4 9	2 3

"AMATEUR" SPAN-ROOF AND LEAN-TO GREENHOUSES.

TENANT'S FIXTURES.

Made especially for Amateurs at a nominal figure, thereby coming within reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectable by any handy man or gardener in a few hours. Framework is substantially constructed of red deal, the lower part being filled in with well-seasoned tongued and grooved matchboards. The house is fitted with a door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and stages for each side, and good 16 oz. glass throughout.

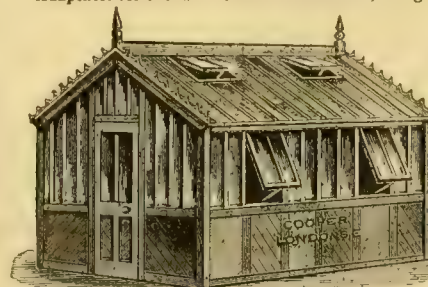


All parts securely packed, and put on rail.

Lot.	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
57 to 71	Span-roof	7 ft.	5 ft.	4 ft.	£2 16 0	£2 5 0
72 to 76	"	8 ft.	5 ft.	4 ft.	3 10 0	2 15 0
77 to 108	"	8 ft.	6 ft.	4 ft. 3 in.	4 0 0	3 0 0
109 to 121	"	10 ft.	7 ft.	4 ft. 6 in.	5 0 0	4 0 0
122 to 149	"	12 ft.	8 ft.	5 ft.	6 0 0	4 10 0
150 to 179	"	15 ft.	10 ft.	6 ft. 6 in.	8 10 0	6 10 0
171 to 176	"	20 ft.	10 ft.	6 ft. 6 in.	12 0 0	9 0 0
177 to 184	"	25 ft.	10 ft.	6 ft. 6 in.	17 0 0	12 0 0
185 to 189	"	50 ft.	10 ft.	6 ft. 6 in.	30 0 0	23 0 0
190 to 197	"	100 ft.	10 ft.	6 ft. 6 in.	50 0 0	37 0 0
198 to 201	"	30 ft.	10 ft.	6 ft. 6 in.	20 0 0	14 0 0
202 to 211	Lean-to	7 ft.	5 ft.	4 ft.	2 8 0	2 0 0
212 to 221	"	9 ft.	6 ft.	4 ft. 3 in.	3 10 0	2 15 0
222 to 225	"	12 ft.	8 ft.	5 ft.	5 10 0	4 0 0
226 to 228	"	15 ft.	10 ft.	6 ft. 6 in.	8 0 0	5 15 0

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Adaptable for the lawn of a villa residence, being well and substantially-built, constructed of the best materials, and artistically finished, with diagonal panels and barge-boards. The framework is composed of 2 in. by 3 1/2 in. red deal, the lower part doubly-lined with tongued and grooved matchboards, and the roof properly fitted with sashes, which facilitates fixing or removing of same without disturbing glass.



The houses are fitted with a half-glass door, complete with rim lock, brass fittings, and key, and is supplied with lattice staging for each side, footpath the entire length; gutters, down pipes, suitable ventilators, and necessary ironwork for opening same.

All woodwork painted two coats of good oil paint, glass cut to sizes, and all parts securely packed on rail. Prices:—

Lot.	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
343 to 351	9 ft.	6 ft.	7 ft.	4 ft. 6 in.	£7 10 0	£5 10 0
352 to 358	12 ft.	8 ft.	8 ft.	5 ft. 6 in.	10 0 0	7 0 0
359 to 363	15 ft.	8 ft.	8 ft. 6 in.	5 ft. 6 in.	12 0 0	8 10 0
364 to 371	20 ft.	9 ft.	9 ft.	6 ft.	16 16 0	12 0 0
372 to 374	25 ft.	9 ft.	9 ft.	6 ft.	21 0 0	15 0 0

21 oz. for Roof 5 per cent. extra.

For full Specification of Sale, see last week's three-page advertisement in the *Gardeners' Chronicle*.

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HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered

HOT-WATER BOILERS,

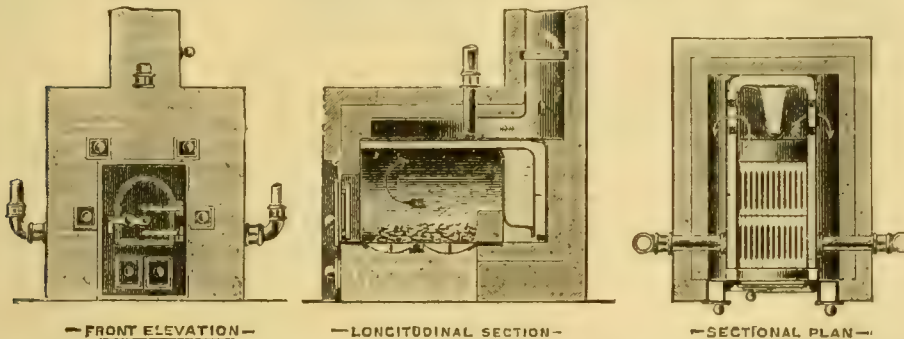
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SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

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The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

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	3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep		1000 ft.	Price
M B 1	3 ft. 2 in.	by 2 ft. 0 in.	by 2 ft. 0 in.	Calculated to heat 4-in. piping as follows:—	1280	£15 0 0
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M B 3	5 0	by 2 3	by 2 6		4000	" 32 0 0
M B 4	6 6	by 3 0	by 3 0		7000	" 50 0 0
M B 5	8 6	by 4 0	by 3 9			" 83 0 0

SPECIAL BOILERS made to suit all purposes and requirements, and Estimates given for HEATING APPARATUS.

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Messrs. Dicksons, Limited, Chester, write:—"The Flower Pots you have so largely supplied us with are light, strong, and well made, and in every respect highly satisfactory."

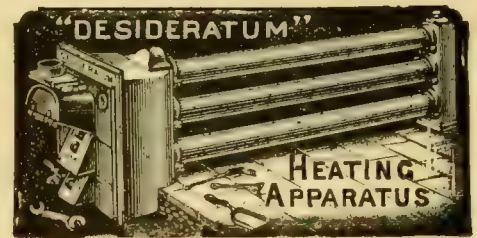
Messrs. Richard Smith & Co., Worcester, write:—"We beg to say that we are highly satisfied with your 'Garden Pots'; they are well made, light, yet strong, and we like them better than any other we have ever used."

Mr. William Bull, 536, King's Road, Chelsea, London, writes:—"For nearly thirty years I have been using your Garden Pots, and still find them the best and cheapest."

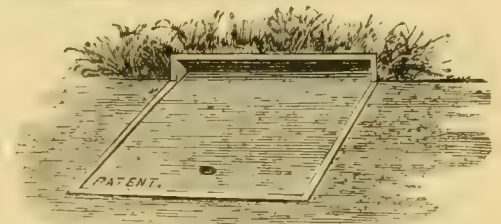
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THE IMPROVED GARDEN GULLY (VINCE'S PATENT).

This useful invention is a great improvement on the ordinary Garden Grating, and is especially suitable for hilly walks and drives. As they never get stopped by rubbish or sand they effectually prevent the washing away of the gravel in heavy storms, and they save half the labour in cleaning out the cesspools. The prices are:—

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(The larger sizes are very strong for carriage drives.)

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TERRA-COTTA! PORTABLE! FOR COAL!

Pure and ample heat, 24 hours for about 1d., without attention.

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GREENHOUSES Heated 24 Hours for about One Penny. Pamphlets, Drawings, and authenticated Testimonials sent. See in use at Patentee's.

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COCOA-NUT FIBRE REFUSE,

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LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.

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**FRUIT TREES,
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VINES,**
OF ALL THE FINEST VARIETIES,
NEW AND OLD.

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A LARGE AND SELECT STOCK IS NOW
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Invites an inspection from intending Planters to the following well-grown TREES, having stout, clean stems, with handsomely-furnished, well-balanced heads, and from frequently transplanting are splendidly rooted; the girth of the stem is taken at 4 feet from the ground:—

ACER DASYCARPUM, 14 to 20 feet, girth 4 to 8 inches.
" **WIERI LACINIATUM**, 10 to 14 feet, girth 3 to 5 inch.
" **NEGUNDO VARIEGATA**, Standards, 8 to 10 feet.
" **REITENBACHI**, 12 to 14 feet, girth 4 to 5 inches.
" **SCHWEDLERI**, 12 to 18 feet, girth 4 to 8 inches.
" **WORLEYI**, 12 to 14 feet, girth 3 to 6 inches.
BEECH, Purple, Pyramids, and Standards, 10 to 20 feet, girth 4 to 9 inches.
BIRCH, Silver, 12 to 14 feet, girth 3 to 5 inches.
CERASUS SEROTINA (American Bird Cherry), 12 to 16 feet, girth 5 to 7 inches.
CHESTNUTS, Horse, 14 to 20 feet, girth 6 to 11 inches.
" Double White, 14 to 16 feet, girth 6 to 8 inches.
" Scarlet, 12 to 16 feet, girth 4 to 10 inches.
" Brioti, 10 to 14 feet.
ELMS, English, 10 to 12 feet, girth 3 to 6 inches.
" Guernsey, 16 to 18 feet, girth 7 to 9 inches.
LIMES, 12, 16, and 20 feet, girth 3 to 10 inches.
" **EUCHLORA** or **DASYSTYLA**, 12 to 14 feet, girth 4 to 6 inches.
" Silver-leaved (*Tilia argentea*), 12 to 14 feet, girth 5 to 6 inches.
LIQUIDAMBAR, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 12 to 14 feet, girth 4 to 5 inches.
" Scarlet American, 12 to 14 feet, girth 4 to 5 inches.
POPLAR CANADENSIS NOVA (the true variety), 12 to 16 feet, girth 6 to 7 inches.
SYCAMORE, Common, 12 to 17 feet, girth 4 to 7 inches.
" Purple, 14 to 16 feet, girth 6 to 7 inches.
THORNS, Double Pink, 8 to 10 feet.
" Paul's Scarlet, 8 to 10 feet.
" Double White, 8 to 10 feet.

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" Weeping, Purple, Pyramids and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
" Cut-leaved Weeping, Pyramids and Standards, 10 to 12 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 8 to 10 feet.

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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 9, 1893.

THE ROSE-GARDEN IN AUTUMN.

I DO not mean by this to imply the early autumn; and, indeed, there is a good deal of difficulty in determining when our seasons begin and end; but I mean rather to refer to the work that is to be done in the Rose-garden about November and the early part of December. I am sorry to say that this year I am compelled to be like the finger-post pointing the way, but not going along it, for the illness of my gardener has completely thrown me back, and several of the directions I give for the benefit of others, I have as yet been unable to follow out myself.

The eccentricities of the past Rose season were not confined to the summer, but have been continued on throughout the growing season. When I looked round upon my small rosary about the middle of July, I thought the outlook very poor; I saw no signs of those long shoots coming from the base of the stems, on which we are wont to rely for our next year's bloom; but after the rains of that month a marvellous change took place: the buds began to push forth, and grew on so rapidly, that shoots of 7, 8, and 9 feet, are not unusual—in fact, I have never seen such vigour in any preceding year. Why this should be so, with the soil in the condition in which it was, I do not know, but probably it may be somewhat like what the late Dr. Henry Bennet said in the *Rosarians' Year-book* concerning the Riviera Roses, that the long, dry summers gave a period of rest to the plants, and that when the autumnal rains set in, they started off with marvellous rapidity, and developed a wealth of beauty during the dead part of the year. We have not the climate of Mentone, and therefore the efforts of our poor Roses are confined to their making a good supply of wood. Although we have had two or three sharp touches of frost, there has been nothing, nor is there anything, to interfere with the operations now necessary.

First of all, with regard to planting: there are two classes of persons who are interested in this, those who are about to make a Rose-garden, and those who merely wish to replenish their beds where losses have been experienced during the summer.

I can quite endorse the views lately put forward by a contributor as to the mistakes which are made in selecting a place wherein to grow Roses; but I believe that, in the majority of cases, the error is made of providing too much shelter rather than too little. As to great places, I have invariably found that the larger they are the worse care does the Rose obtain; sometimes, indeed, the influence of "my Lady" is brought to bear when "his Lordship" has

dismissed the subject with a sneer. I remember some years ago, for instance, going to one of the grandest places of historic interest in the Midlands, when, as I usually find, the gardener and I became very good friends. "I am ashamed," he said, "to show you my rosary; but what can I do? the Countess would have it so, and I can only obey orders." I went to see it, and a melancholy sight it was. Planted in really unctuous soil, the plants had grown abnormally strong, but as the place was surrounded by a belt of high Elms at no very great distance, the plants had been drawn up, the shoots were long and weak, and covered with mildew, whilst the flowers were poor and hardly recognisable. Had I my choice between an over-exposed situation and an over-sheltered one, I should certainly prefer the former. Where it is necessary to form a new plantation, be it large or small, with a couple of thousand or two hundred, the same rule holds good—they must have a place to themselves. Of course, a few may be planted in the borders, if necessary, but no one who would desire to enjoy them thoroughly will grudge them the place to themselves. The best plan is to place them in beds 4 feet wide, the length to be determined by the number of plants to be used. I believe the conviction is gradually forcing its way amongst amateurs, that the Briar stock seedling or cutting is preferable to the Manetti; this is evident from the large number of these stocks now planted by nurserymen in comparison with former years. In planting, the width between the plants will be regulated by the exigencies of the grower; 3 feet is a very good allowance, but where space is of importance they may be put closer together.

I do not think it is at all desirable ever to place manure in the beds unless they are trenched, and the manure laid at the bottom. All plants, when freshly put in, should have short stakes placed there in order to prevent them from being blown about in high winds; and they should be firmly planted, the roots being carefully spread about. After the planting of the beds has been completed, they should be mulched over, and so left during the winter.

Where the only work of planting is that of supplying gaps, which have been made from one cause or another, the same rules must be observed, that is, no manure put into the holes, firm planting, and securing of the plants. When this is completed, the earth may be drawn up to the collars of all the plants, in the same way in which Potatoes are earthed up, and the beds covered over with farm-yard manure, that is, where it is possible; but in our part of the country, East Kent, there is hardly any straw, and many of us have been obliged to litter our horses with the German moss litter, which however excellent for that purpose, does not afford the same amount of material for after use.

With regard to pruning, I have of late years advocated the practice of cutting out in the autumn all the blooming wood of the past season, leaving only those long shoots from whence we expect our crop of the next year. These shoots are, as I have said, in many instances, so strong that the question is, whether they shall be cut back hard in the spring, or left longer. It is said, if the former course be adopted, we shall have a quantity of wood next year, but not so much bloom. I am myself inclined to adopt another method, namely, that of pegging down. Many years ago I recollect seeing in the gardens of the late Mr. Charles James Perry, of West Bromwich, Birmingham, a bed of Roses so treated, and nothing could have been more beautiful than the effect. From

nearly every axil bloom-buds started, and the whole length of the shoot was covered with flowers. I do not know whether the flowers on shoots so treated would stand the test of exhibitions, probably not, as the shoot would have too many flowers to support for that purpose; but I do know that the effect for garden decoration was very fine. The shoots were bent down, and secured to short stakes; or, a short hooked stake was used, and the shoot was pegged down much in the same way as Verbenas. In the foregoing directions I have had in my mind simply the hybrid perpetuals. Teas must be treated differently, they are even now at the end of November growing and flowering, and these shoots must of necessity succumb to the first severe frost; in the meantime care must be taken to protect the lower parts of the shoots by earthing them up as already directed for H.P.'s, and then spreading some covering over the bed in the way of mulching, or litter of any kind that may be at hand for the purpose. I do not think on the whole that the Teas are much more delicate than the hybrids; there are some varieties which are of weakly constitution, as there are some hybrids which are so also, but on the other hand such varieties as Marie Van Houtte, Madame Bravy, Madame Lambard, and Comtesse Riza du Parc bear quite as much hard weather as any hybrids. With regard to garden Roses, I have not much to say, the longer growing kinds will require fresh staking, or where planted against walls or fences, fresh nailing and securing; they do not require any protection, and are tolerably well able to take care of themselves. There are two good climbing Roses in this section which ought to be added to any collection, Bardou Job and Turner's Crimson Rambler—both bright in colour, the former nearly single and the latter a good semi-double. *Wild Rose*.

ORCHID NOTES AND GLEANINGS.

ZYGOPETALUM GRANDIFLORUM, *Hemsley*.

A MEXICAN and Granadan species, also known as *Galeandra grandiflora* and *Batemannia grandiflora*. The flowers are produced on a basal scape, each flower being about 3 inches in diameter. The sepals and petals are light green, with five to seven longitudinal red-brown lines. The lip is sharply denticulate at the margins, white with reddish-purple raised lines, which are also denticulate. The crest is semi-circular, orange-yellow with numerous red-brown radiating ridges, each of which terminates in a spine-like tooth in front. Habitat and culture as for *Stanhopea Lindenii*, t. 393.

LYCASTE CINNABARINA.

A handsome species, originally discovered by Warszewicz in Peru, and now introduced into cultivation by MM. Linden. The oblong sepals and petals are white, the lip light orange-brown, elliptic oblong, obscurely three-lobed, narrowed at the base, 4-cm. long, the lateral lobes small, rounded, obtuse, the central lobe orbicular-oblong obtuse or emarginate, undulate, toothed, with a large fleshy callus. *Lindenii*, t. 394.

CATTLEYA VELUTINA.

Flowers $3\frac{1}{2}$ inches in diameter. Sepals and petals spreading, oblong obtuse, orange-brown with purplish spots, lateral lobes of lip convolute, anterior lobe suborbicular, white with radiating purple veins. Native of South Brazil. *Lindenii*, t. 395.

VANDA TRICOLOR VAR. HOVEAE.

Segments white, red-spotted, lip deep rosy-lilac. *Lindenii*, t. 396.

BARKERIAS FROM HIGHBURY.

Three weeks ago the Right Hon. Joseph Chamberlain, M.P., forwarded some splendid spikes of

varieties of *Barkeria Lindleyana* and *B. elegans*, which gave excellent proof of the successful culture of these plants in his collection. The object of the present note is to point out the extraordinarily long time these elegant rosy-crimson Orchids last if kept in a cool room without gas. The spikes were borne on the plants for a considerable time before being cut, and were fully expanded when we received them; and after three weeks in water under the conditions stated, the flowers are as fresh as when received. The genus *Epidendrum* has many species which last a long time in bloom, but the *Barkeria* section seems of the longest duration.

DENDROBIUM SUPERBIENS.

This is not as yet a common species, and its beauty would warrant an importation of it being made. A fine inflorescence with a dozen rose-purple flowers is sent by Mr. James Crispin, Nelson Street, Bristol, who grows it with *D. Phalaenopsis*, *D. bigibbum*, &c. Flowers of *Cypripedium* \times *vexillarium*, *C. x Arthurianum*, and others come with the *Dendrobium*, the two hybrids of *C. Fairrieanum* named fully warranting the remark of the sender "What lovely things these are!"

CYPRIPEDIUM \times LEEANUM VARIETIES.

Messrs. Heath & Son, nurserymen, Cheltenham, who are famed for the fine varieties of this plant, and especially for their noble *C. x Leeanum giganteum*, send a box of flowers showing the great variety of beautiful forms given by their seedlings of *C. Spicerianum* crossed with the best forms of *C. insignis*. Some have the upper sepal nearly all white, and with scarcely any purple spotting; others have very large dorsal sepals, with purple markings, spread almost entirely over the surface except the margin, and there are all grades between these two extremes. The flowers are all of fine size and substance.

CATTLEYA WALKERIANA VAR. NOBILIOR.

Notwithstanding the fact that the "nobilior" variety of *C. Walkeriana* (bulbosa), originally illustrated in the *Gardeners' Chronicle*, June 9th, 1893, and of more recent introduction (fig. 108, p. 713), than the type, is of stronger growth than the earlier importations; in but few gardens has it been induced to thrive for any length of time. It is usually grown in baskets or on blocks, but Mr. E. Hill, gardener to Lord Rothschild, at Tring Park, has had the best success with it for years, by growing it in pots, and standing these on a ledge of the brickwork at the end of the house in which *Vanda teres* is grown, and close to the glass end of the house, where the plants have plenty of light. Every year the plants increase in size, and the pseudobulbs young and old are stout and plump. For some time they have been giving a succession of their large dark rose, fragrant flowers, and will yet continue a long time. *L. crispilabia* also thrives in the same way.

BULBOPHYLLUM HIRTUM.

This singular and exquisitely-fragrant species is flowering in the Orchid-houses at Tring Park, and is noteworthy on account of its elegant nodding racemes of small white flowers, having on each spike one or two odd flowers different in colour (yellow), and somewhat in structure low down on the ascending or basal portion of the inflorescence. On a small scale the arrangement is of the nature of the odd flowers in the *Arachnanthe* (*Vanda*) *Lowii*, and probably serves some useful end in the economy of the plant by furthering fertilisation by insect aid.

LÆLIA ANCEPS VARIETIES.

These are now very beautiful in Lord Rothschild's collection at Tring, and are being used to form some beautiful table decorations. All the known varieties are to be found in the house devoted to them at Tring Park, and among the specimens, the champion plant of the true white *L. anceps Williamsii*. A spike of the fine *L. a. Schroderae* of the *L. a. Amesiana* class, has charmingly crimson-tipped petals and fine purple-crimson lip.

ARACHNANTHE CLARKEI.

A native of the Sikkim Himalaya, where it grows on a thickly-wooded crest or ridge, at about 6000 feet elevation. It was discovered by Mr. C. B. Clarke, F.R.S., the indefatigable Indian botanist whose name it bears. It was introduced by Messrs. Hugh Low & Co., of Clapton, in 1885 or 1886, and flowered for the first time in this country in the autumn of the latter year in the collection of the late Mr. John Day at Tottenham. It also is a native of Bhotan. It is allied to *A. Cathcarti* of Benthams, the old *Vanda Cathcarti* of Lindley, on which the genus *Esmeralda* was founded by Reichenbach, which, however, being identical with the older genus *Arachnanthe* of Blume, should not be recognised. It is readily distinguished from *Vanda* by its articulated lip, which is common to all the species, but in the present one is so delicately attached that the slightest touch imparts to it an oscillatory motion. It is much more easily cultivated than *A. Cathcarti*, and requires cooler treatment and

PHALANOPSIS SANDERIANA.

A native of the Philippine Islands, introduced by Robelin to the establishment of Messrs. Sander in 1882. It flowered for the first time in 1883 in the collection of Lord Rothschild, and is by some considered as likely to be a natural hybrid between *P. Aphrodite* and *P. Schilleriana*. It is supposed to be the source of the traveller's tale concerning a scarlet *Phalanopsis*, the flowers being really of a rosy-lilac. *Reichenbachia*, t. 68 (1).

ABBERLEY HALL GARDENS.

DURING a recent journey through the Teme Valley, I found myself at Abberley Hall, the fine Worcestershire seat of W. Jones, Esq., situate on an eminence overlooking some very fine scenery, and enjoying extensive views. I knew the gardens of Abberley Hall by repute, and knew Mr. Young as an advanced and trustworthy gardener. I was not disappointed

The collection of *Chrysanthemums* in flower at the time had a very fine effect, consisting as it did of about 600 plants, 350 being grown for large flowers to adorn the conservatory, and the remainder as bushes to supply cut flowers. The newest and best varieties are grown.

The Peach wall, which is 100 yards long, is a model of its kind. Every tree is perfect, and they never fail to yield large crops. The difficulty is, that the fruit sets so thickly that a great deal of time is consumed in thinning it. The following varieties are grown: Dymond, Stirling Castle, Walburton Admirable, Dr. Hogg, Crimson Galande, Noblesse, Sea Eagle, and Barrington.

I may here remark that every part of these fine gardens was in perfect order, and the crops in the kitchen garden, the inmates of the stove and greenhouse, and the beds and borders of hardy flowers all told of good cultivation. *Quintin Read*.

CHRYSANTHEMUMS ABOUT LONDON.

(Continued from p. 619.)

MESSRS. H. CANNELL & SONS.—A visit to the Swanley Nurseries at this season is especially cheering, inasmuch as the floral treats to be seen there are so little in character with the not too kindly elements outside. The winter-blooming zonal *Pelargoniums*, for instance, filling three or four of the long, low, span-roofed houses, are unquestionably tonic in their effect upon the mind, after battling with the fierce wind, and perhaps damp, misty atmosphere on the way there. One feels little inclined to differ from Mr. Cannell when in his quite pardonable pride he speaks in such flattering terms of his gay favourites, and declares that no other plant can create so bright a show as they present in the dulllest, most unfavourable portion of the year. There are hundreds of gardeners in parts distant from London to whom such a sight would be a revelation; for, after all, the places are not numerous where the culture of these well-known plants is a success, when grown for winter-blooming. But these were not the objects of our visit at this time, and it was only on our way to the *Chrysanthemum-house* that Mr. Cannell led us through those of which we now speak. In passing, therefore, we must only remark that *Raspail Improved* is the best double scarlet ever seen, and its blooms, produced in greatest freedom, are large, very double, and wonderfully bright. The single varieties continue to show improvement in colour and in size.

The house devoted to the *Chrysanthemums* is a large one, long, and wide, and there were about 3500 plants arranged there, giving a grand show, and comprising a great number of novelties and seedlings. In noticing a few of these, and others of earlier date, we can only mention a few of those that were in good form at the time of our visit. Robert Owen, an incurved Japanese, of bright golden bronze, is a compact pretty flower, well worth growing by all. The Duke of York was represented by three good blooms on a plant; the flower is very large, and the florets are rosy-magenta, with reverse side of deep pink, shaded with silver. This, and Robert Flowerday, appear to be much alike in form and in colour. The new Golden Gate was good; it has very broad florets, buff, or bronzy-buff, in colour, and it will make a large flower another season. Mrs. Wm. F. Dreer is another Japanese, flower rather smooth-looking, of bronze and yellow, and showing invariably a good centre; it came from America last season. Ernest Westland is a large, heavy-looking Japanese, with rather short and somewhat narrow florets, but very deep, in colour a mixture of dull red and yellow—a seedling from France last season. An experiment had been made with Col. W. Smith, by grafting it upon another variety, and the result indicates that treated so, the florets are not given to damping; as this variety is a sinner in this way sometimes, a larger batch will be treated thus next season. Comtesse de Galbert is a pale flesh-coloured incurved Japanese, and will make a good flower; the colour is especially pleasing. A very deep reflexed Japanese is Ville de Nimes; the florets are rather short and narrow, in colour pink,



FIG. 108.—CATTLEYA WALKERIANA VAR. NOBILIOR. (SEE P. 712.)

more light. Its handsome orange, buff, and brown flowers are produced in the autumn, and lasts about six weeks. *Reichenbachia*, t. 65, from a plant in the Royal Gardens, Kew.

ZYGOPETALUM BURTII.

A native of Costa Rica, where it was discovered by Eadnes in 1867, and imported by Messrs. Veitch. It requires to be placed in the warmer end of the Cattleya-house in a very shady position. It should be grown in good fibrous peat, with plenty of drainage and abundance of water when growing, but none must be allowed to stagnate about the roots. The plant is well figured in *Reichenbachia*, t. 66.

CATTLEYA PARTHENIA X.

This handsome hybrid was raised from *C. fimbriata* fertilised with the pollen of *C. Mossiae*, *C. fimbriata* itself being also a hybrid between *C. Aclandiae* and *C. intermedia*. The sepals and petals are pure white, the lip is entire, with a wavy margin. The convolute side lobes white, the disc light yellow, and the front lobe delicately pencilled with light rose. It was raised by Mr. Alfred Bleu of Paris in 1878, but did not flower until 1889. It requires the same treatment as *C. Mossiae*. *Reichenbachia*, t. 67.

in finding evidence of this in the excellent Grapes and *Chrysanthemums* and the renowned Peach trees. Mr. Young is not an exhibitor, and therefore the outer world has but little opportunity of seeing his productions. Turning into one of the vineries, planted with Mrs. Pince's Muscat, Black Alicante, and Lady Downe's Seedling, well-finished bunches of Mrs. Pince were noted, some of which weighed from five to seven pounds. It is well known that this Grape requires much skill to grow it to perfection. The bunches of Black Alicante were quite as good as those of Mrs. Pince, massive, tapering, and furnished with a great breadth of shoulder, the bloom and finish being perfect. It is no uncommon thing to have the bunches five or six pounds each, and Mr. Young has no difficulty in securing such year after year. The Lady Downe's Seedling, though good, were not so large as the others, owing, I was told, to a root having got into the subsoil of the border, but now that the runaway root has been found and cut close back, the Vine has improved. The Muscat Grapes, in another vinery, were quite as good as the above, the bunches large and the berries plump, and of that amber tint which is characteristic of the Muscat of Alexandria when in its best state.

with a shade of cream at centre. Leviathan is expected to make a capital Japanese, flowers large, rosy-crimson, with silver reverse. Madame Chas. Molin is a white flower, of the habit and form of Vivian Morel, and will be well worth growing as a white one of that form. Amy Chantler is a very pretty flower, the centre florets are marked with a tinge of amaranth, but the rest of the flower is pure white—quite a charming variety. David Rose is an American seedling, flowers heavy-looking, deep, and large; florets wide, and of a dark rose colour. Golden Wedding, Etoile de Lyon, Vice-President Calvat, Sorteaux of 1893, and Mille. Thérèse Rey were noticeable for good flowers, as were A. H. Neve, Vivian Morel, Lord Brooke, and Souvenir de Madame G. Eynard, the latter a fine decorative variety, of bronzy-crimson and yellow. Mr. Jas. Carter is a small flower, introduced by Messrs. Carter & Co. from Japan, which may be described as a neat little bloom for button-holes and such work; the florets are straw-coloured, short, extremely narrow, and a little quilled. Piper Heidsieck is a seedling of the same kind, but the flower is a little larger, and almost white.

The work of propagating the varieties is done in a systematic and excellent manner. In several of the houses there are thousands of small plants that have been lifted from the open ground, and as they have never been in pots, and have never had any strong manures, they are certain to throw healthy and clean suckers. When brought into the houses, they are cut down, placed thickly together in rows, and covered with ordinary soil.

Besides the attractions at Swanley already noticed, we may mention the house used for the display of winter-blooming Begonias, which is already beginning to look enticing, but which may be seen at its best about February next; and another house containing a quantity of Bouvardias.

Cyclamens, Primulas, and such plants, are looking well. *Visitor, Nov. 18.*

FORESTRY.

THE USE AND ABUSE OF THINNING.

THERE are probably few foresters of the present day who still thin their woods by the well-known rule of leaving a distance between each tree equal to one-third of the average height. However efficacious the adoption of such a principle would be in assisting to produce a healthy plantation, no one with any pretensions to a knowledge of sylviculture would hope to produce clean timber thereby. Advanced sylviculture follows closely in Nature's footsteps, not altogether because her results are better than those obtained by the art of man, but rather on account of necessity compelling us to leave the greater part of the work of timber production in Nature's hands. The forester can plant or sow his crops just as the farmer or gardener can, but he cannot afford to hoe, manure, and prune his trees with the same care and labour that we see expended on cultivated vegetables, cereals, and fruit trees. This fact constitutes the fundamental distinction between arboriculture and sylviculture. With the former any operations are permissible which stimulate the growth and improve the shape of a tree, but with the latter the skill of the forester lies less in what he is able to accomplish, than in the amount of labour he is able to dispense with.

Artificial thinning is quite an unnecessary operation in the early stages of a pure plantation's growth, for the simple reason that Nature invariably commences the work of crushing out weak individuals as soon as close order is obtained, and carries it on incessantly until height-growth culminates. By such means are the trees early deprived of side-branches, while sufficient space is ensured for the growth of the stronger or dominant trees. With mixed plantations, specific rates of growth, capacity for bearing, shade and adaptation to soil, climate and situation, determine what species shall dominate, and what be suppressed, although the latter term may only apply to the height, and not to the health and vigour of the smaller trees. The necessity for thinning here depends entirely upon the species it is desirable to retain. Where the dominant trees are light-demanders, and the suppressed shade-bearers, normal

growth may continue for a long period without artificial aid, and a mixture formed on this principle will enable a heavy crop of timber to be grown on a given area. But where this order is reversed, we must either allow the light-demander to be crowded

growing in peaty sand overlying loam and marl. The plantation in which they were growing was thinned twelve years before the trees were cut, and the following table gives the results of analyses of the respective sections:—

Height in stem.	Average Breadth of Annual Ring in the Periods.			Average Annual Increase in Sectional Area in the Periods.			Proportion of Increase of Sectional Area of two last Periods to the First.			Specific Dry Weight of Periodic Growth.			Percentage of Shrinkage in Periodic Growth.		
	1880-91.	1868-79.	1844-67.	1880-91.	1868-79.	1844-67.	1880-91.	1868-79.	1844-67.	1880-91.	1868-79.	1844-67.	1880-91.	1868-79.	1844-67.
STEM I.															
Metres.	cm.			cm.			First Period = 100.								
2	1.88	0.54	0.63	17.2	4.5	4.7	367	96	100	548	485	490	14	12	11
6	1.71	0.33	0.51	13.8	2.4	3.4	406	71	100	523	470	473	12	11	10
10	1.42	0.38	0.52	11.1	2.7	3.5	317	71	100	515	462	472	10	9	9
12	1.41	0.42	0.53	10.8	2.6	3.4	318	76	100	500	455	463	11	7	10
STEM II.															
2	1.13	0.33	0.83	10.3	2.8	3.4	303	82	100	575	460	515	11	9	11
6	1.08	0.25	0.75	8.7	1.8	2.7	323	67	100	573	435	504	11	8	11
9.5	1.13	0.25	0.79	8.2	1.7	2.5	328	68	100	563	425	501	10	8	10
11	1.11	0.25	0.80	7.8	1.7	2.3	339	74	100	575	430	468	10	7	12

A SECOND TABLE GIVES RESULTS FROM THE WHOLE OF THE TREES AS FOLLOWS:—

Volume in Cubic Metres at the End of Year.				Average Annual Increase in Volume during the Periods.			Percentage of Growth in Volume during the Periods.			Specific Dry Weight of Growth during the Periods.			Proportion of specific Dry Weight during last two Periods to First.		
1891.	1879.	1867.	1843.	1880-91.	1868-79.	1844-67.	1880-91.	79.	67.	1880-91.	79.	67.	1880-91.	79.	67.
STEM I.															
7768	5718	5288	4172	0165	0038	0045	2.49	0.80	0.94	529	460	504	105	91	100
STEM II.															
6573	5367	5080	4316	0101	0024	0032	1.69	0.46	0.63	571	443	519	112	87	100

out, or give it space by thinning. Scientific sylviculture only mixes species on the former system, for by the latter, rough timber (from non-suppression of side-branches) invariably results, unless pruning can be profitably performed; and even this operation will not always produce a straight stem.

Thinning, then, if properly carried out, assists Nature in her work, by simply removing those trees which are no longer taking part in the struggle for supremacy; or at the most, by throwing weight into the scales where the issue is doubtful, or likely to be too protracted.

So far our remarks only apply to the early half of a plantation's growth. After middle age, the formation of fresh side branches is improbable, and a healthy and properly-cleaned stem seldom throws out water-shoots. The physique, as it were, of the trees is established, and growth in an economic sense is chiefly confined to the thickening of the stems. In many cases natural thinning has provided ample space for the crowns to perform their assimilative functions, and other things being equal, a progressive increase in stem-volume is almost certain to occur in the dominant trees; but where the latter are not so far a-head of their smaller neighbours as to be entirely beyond their influence as regards light and space, artificial thinning may produce beneficial results by giving them a better supply of light for the service of their crowns. By carrying out this work in a judicious manner, the forester may enhance the value of a crop of timber, which is nearing maturity, considerably, not only by increasing the volume of the annual increments, but also by raising the quality of the wood. Some investigations carried out by Dr. Schwappach on two Scots Firs, and particulars of which were published in the *Forst und Jagdwesen* for October, 1892, clearly demonstrate this. The two trees of which stem analyses were made were 147 years of age, and

We thus see that coniferous wood does not necessarily increase in quality inversely to the breadth of the annual ring (although in many cases it is found to do so), for the specific weight of the wood formed during the last period is greater than any formed previously. It frequently happens also that after the hundredth year or so, the growth of Scots Fir diminishes in a thick wood, but in this instance the reverse has been the case after thinning had admitted additional light and air to the crowns. From a practical point of view, the increase in ring-breadth is of far more importance than that in quality. In the conversion of the timber most, if not all, of the last few years' growth of a stem is lost or put to unimportant uses, but the increased ring-breadth adds greatly to the total volume of the tree, and consequently to its market value.

The results which are likely to follow thinning thus depend greatly upon the stage of the plantation's growth at which it is performed. During the early stages, thinning (as the term is generally understood in this country) is usually more injurious than beneficial, owing to its favouring the growth of side branches, and producing rough timber; but after height growth culminates, a certain degree of open order is a great advantage. If this latter state of matters has not already been secured by the survival of the fittest only, artificial thinning may be requisitioned in order to bring it about. The exact time at which the forester should step in to perform this work will vary with species, soil, and situation, but it should be done before any serious diminution in the breadth of the annual rings occurs. This can be easily ascertained by the investigation of two or three selected stems, and although thinning may not in all cases have the desired effect, it will be found to produce it in many cases, providing other disturbing causes have not supervened. *A. C. Forbes, Bowood, Calne.*

CONTINENTAL NOVELTIES.

COCKSCOMB VESUVIUS (FIG. 111, p. 723).

This novelty has a comb of a fiery-red, on a ground of golden-yellow. The plant is of dwarf habit, and the comb is well elevated above the green foliage. The comb is less dense than those of other varieties, and the golden ground, and the red upper part, is well presented. The contrast is perfected by a line of fiery-gold running over the whole length of the head. The variety is well adapted for the market, as well as for the private garden.

DWARF FRENCH MARIGOLD, PURPLE AND GOLD.

The dwarf Marigold (fig. 109) is described as a symmetrical grower about 12 inches high, and flowers continuously from July until frost occurs. The blooms are single, about $1\frac{1}{2}$ inch across, of golden-yellow, with a purple-velvety spot on each of the six or eight florets. The flower is fragrant, and is especially good material for cutting purposes, bouquets, &c.

SUNFLOWER, LORENZ'S MILKFLOWER (FIG. 110).

This is a robust variety, growing to a height of 12 to 15 feet, when planted singly in good soil, and is branched from base to top, each branch bearing a number of medium-sized golden-yellow flowers, with small black centre. It is recommended for planting singly on lawns, and for covering naked parts in the garden.

For the opportunity of illustrating the above novelties we are indebted to Mr. C. Lorenz, Erfurt, Germany.

A TRAVELLER'S NOTES.

(Continued from p. 557.)

ASCENT OF CHOKAIZAN.—Acting on the advice of Professor Sargent, of the Arnold Arboretum, U.S.A., I made an excursion in the autumn to Chokaizan, situate within a short distance of the Sea of Japan, in northern Nihon. Thanks to the services of a jinrickshaw company I arrived in three days at the foot of the mountain, and put up in a small fishing hamlet.

Twice I have met with these companies, and find them good, relays of men every few miles. On one occasion we did 55 miles in one day, including a high mountain pass; and on another 10 miles in one and a quarter hour, an average of 1 mile in seven minutes.

On these occasions the roads were trunk roads or "kokudo." I was once on a country cross-road or "rido," and took four and a half hours for 12 miles, despite the exertions of two powerful fellows. Another advantage, and an important one appertaining to the main trunk roads worked by the companies, is the certainty of always obtaining men. On one occasion on a side road I arrived in a village, and found that an M.P. on the previous day in the course of an electioneering tour had passed through and taken every coolie the place possessed; on another I required four men, but I was told the road was so bad that eight were necessary—only two being obtainable, my luggage and boy (interpreter and cook) had to fall back on pack-horses.

At the best, a day in a jinrickshaw is fatiguing, over 6 inches deep of loose sand and stones, as along the west coast line it becomes somewhat exhausting.

A few miles on is Sendain, noteworthy for the manufacture of articles more ornamental than useful, from fossil-wood found in a hill close by. The native name is jindaisugi, the wood in all probability being *Cryptomeria*. I obtained several examples, as well as a piece of fossilised Pine, and a roll of cloth, called shifu-ori, made from silk and paper, and suitable for hot weather, the plant from which the paper used in this cloth is obtained is *Broussonetia papyrifera*. A somewhat high range of mountains is crossed by a pass kept in perfect condition. This range runs through the centre of the island almost unbroken, from Shizoka on the south coast, to the most northern point. Twice I crossed it; once en route for Chokaizan, between Sakunami and Sekiyama, and again on the return journey to Kurosawajiri, shortly after leaving Yokote. On both occasions I was struck with the extreme beauty of

the scenery, and the richness of the varied deciduous vegetation. The road, in perfect condition, running along the sides of the hills, and frequently hewn out of solid rock, passes through narrow valleys and deep ravines, every turn revealing fresh views. All sides are shut in by steep and inaccessible mountains, clothed with the densest deciduous forest, from the banks of the torrent below to their very summit. *Acer palmatum*, *Styrax japonicum*, *Quercus serrata*, *Viburnum*, *Berchemia racemosa*, and tall handsome specimens of *Æsculus turbinata* and *Magnolia hypoleuca* were all seeding freely. Beyond Sekiyama and as far as Moto-Aikai, on the banks of the Majaungawa, one of Northern Japan's most important streams, our way lay for the most part over a wide plain chiefly under Rice, now fast ripening. Villages were numerous, and bore a totally different aspect to those further south, all the houses having one end facing the street, and constructed of heavy beams and walls of mud and chopped straw. The general effect is more that of a huge barn than a domicile. The dress of the women is somewhat different, and their head-gear peculiar; a broad band is wrapt, just above the eyes, tightly round the head, and a similar one over the nostrils and mouth—a protection against dust or cold. Many of the house walls were literally hidden with strings of Tobacco



FIG. 109.—MARIGOLD, DWARF FRENCH: PURPLE AND GOLD.

leaves, drying in what ought to have been an autumn sun, but there was and has been generally very little.

From Moto-Aikai to the somewhat important seaport Sakata the jinrickshaws ran over the smooth undulating southern bank of the Majaungawa, a broad shallow stream; hills on either side, with broad belts of *Cryptomeria*, made the scenery pretty. To the south lay the peaks Haguro-san and Ewasan, the latter (the highest) being some 6200 feet elevation above sea-level; curious as being connected with a non-existing mythical third, the three together being known as San-zan, "the three mountains." The non-existing peak bears the name of Tudono-san, is marked on Japanese maps, mentioned in some European books; sign-posts point to it, its ascent is discussed by pious pilgrims, but, on the authority of the Imperial Survey Department, it does not exist. I of course asked for it, and a direction was pointed out; but when I hinted my doubts, my "boy" (a Tokyo man) laughed, and said no more. Since then I have met with the following statement:—"Though not in itself a mountain, it is a hollow on the shoulder of a mountain called Umba-ga-take. This spot is considered sacred, and is a goal of pilgrims. Those who affirm and those who deny the existence of the sacred mountain would therefore seem to be equally in the right, as the question turns on the definition of the word mountain, or, rather, of the Japanese word san."

From Sakata (where I purchased old lacquer at prices laughable when compared with those at Tokyo and elsewhere frequented by wealthy Americans and globe-trotters) it was but a short way to the village of Fukura, where I had decided to stay. Skirting the sea-shore, for the most part beneath fine plantations with little or no undergrowth, Chokaizan looming in the north, I was deposited one soaking-wet afternoon, in a small hamlet of some half-dozen habitations. Fortunately a hot spring had given an excuse for a fair inn, and during my stay visitors were not infrequent. A dreary place this Fukura—not a chicken, hence I went eggless. Fortunately, I had ample supplies.

The afternoon I spent wondering where and how I was to begin, not a particle of reliable information was obtainable; it is pretty easy to talk of doing a mountain, but when you start for a great mound 100 miles round at its base, the prospect is apt to be overwhelming. However, before I left I worked the south, south-west, and south-east slopes, rendered far easier, as there was not a tree above 700 feet, only low scrub.

Chokaizan is 7100 feet above sea-level, but the slope is so gradual, the distance to the summit is considered to be 9 ri. (1 ri. = 2.44 miles). The first recorded eruption took place A.D. 861, the last, an insignificant one, some thirty years ago; its volcanic force is said to be becoming extinct. Immediately behind Fukura the undergrowth in parts is almost entirely composed of *Quercus dentata*, low bushes, cut down for fire-wood. I first ascended from Fukura, the usual route, but soon perceived there was little worth the trouble, low shrubberies of *Quercus*, *Lespedeza*, *Ealalia*, &c., entwined with *Vitis labrusca*, *Pueraria*, and other creepers. Wood-cutters were busily at work. At some 600 feet I was able to obtain a more general idea of the vegetation of the mountain. Below stretched the plain, dotted with villages partially hidden by groves of *Zelkova*, *Diospyros*, *Camellias*, *Cryptomeria*, *Bamboos*, *Oaks*, *Mulberries*, &c. It was, I may say, entirely under Rice, from the lower slopes of the mountain to the Pine-belt lining the seashore.

To the south-east and east were numerous groves of Pines, which I subsequently found to be singularly fine, and two long lines of dense deciduous vegetation, evidently along the banks of mountain torrents. One, the most easterly, extended to a wood, in the recesses of which lay buried a Buddhist temple. Here the vegetation was richer than in any part visited, and I spent, as far as the weather would allow, the best part of two days in and round this wood. Fairly easy of access, through the numerous wood-cutters' trails, it was yet, apart from these, frequently impregnable. The banks of the torrents were so steep that it was only by clinging to the Bamboo and other undergrowth one could descend. In the wood along the torrent banks, wood-cutters are active, and I crossed several clearings, usually carefully replanted—young *Cryptomeria* as often as anything, the young plants inserted within a foot or two of the old stumps. I also came to a plantation, still quite young, of *Pyrus Toringo*. In the groves, and more especially in the one surrounding the temple, are fine specimens of *Elm*, *Zelkova*, *Beech*, *Rhus*, *Camellias* with stems 9 to 18 inches through; *Magnolia hypoleuca*, 40 to 50 feet high; *Acer pictum*, cissifolium, and quite a small forest of *palmatum* without a seed; *Cherries*, *Pyrus*, *Chestnuts*, *Æsculus turbinata*, *Eaonymus*, *Linderas*, and *Oaks*. The undergrowth is rich, *Bamboos* being most frequent; in parts are a few distinct species of Ferns. I brought away some seed, but nothing of great value; the fact is, all the really good things are known and in England already.

In returning to the railway we again skirted the sea-shore as far as Akita, meeting with, as was to be expected, *Rosa rugosa*, flowering and seeding; *Juniperus littoralis*, covered with berries; a low, pretty grey *Artemisia*, and groves of rather poor Pine. From Akita we made due east. Outside the town much Rice was being harvested, the peasants standing, despite the cold, knee-deep in liquid mud, and using a short, triangular, slightly-hooked blade, on a stout handle. Tied in small bundles, the Rice is conveyed to the sides of the fields, and there hung on rough scaffolding, especially erected for the purpose, several rows deep, to finish ripening. The task of cutting is frequently left to the women, the men loading the pack-horses, &c.

On the slopes of the mountain passes, *Pueraria Thunbergiana* was being cut, tied in bundles, and hung outside the huts to dry. From its fibre rope and twine are manufactured, specimens of which I have sent home. I also for the first time saw bundles

of Utsuji, *Lespedeza Sieboldii*, stacked to dry. On inquiry, I was informed that the small wooden nails required for lacquer boxes and other fine work are manufactured from its stiff branches. From Kurosawajiri, approached by a fine avenue of young Pines some miles long, destined, provided Nature does not destroy it, one day to be probably famous, I took train to Auomori, and crossed to Hakodate.

TOKYO.—A fruit and vegetable shop at Tokyo is not uninteresting at this season. The fruit represented in greatest quantity, hawked about the streets, or sold by poor and needy vendors at the corners of the leading thoroughfares, is naturally the Persimmon (*Diospyros*). Of the several varieties commonly met with, the most usual are a large pale one and a smaller variety of a deep rich orange colour. *Pyrus ussuriensis* is still met with, though its season is evidently passing: in flavour poor, in texture gritty, it would meet with but little favour in European countries. For a Pear it possesses the peculiarity of a deep depression at both ends, and is in both colour and shape not unlike a large Russet Apple. The finest variety I have met with is cultivated round Nügata, in the north, though Auomori supplies the capital to a large extent.

A seedless Mandarin Orange, largely exported to America from Kioto; Grapes from the fertile plains of Koshu, Figs from the districts surrounding Tokyo, Pomegranates, just bursting; Chestnuts, the choicest of which hail from Tamba, are met with everywhere.

Lilium tigrinum bulbs, scraped white, and kept in water, look appetising, and when boiled are very sweet. Roasted locusts in a tray close by were not so attractive, nor is one tempted by the solid tubers of *Colocasia antiquorum*. Dried Plums, small yellow Chrysanthemums for salad, and Ginkgo seeds—the latter a dish for epicures—are amongst those often seen.

In every street are sacks and bags of *Phaseolus radiatus*, which, when crushed to a pulp, forms one of the chief ingredients of the countless Japanese sweetmeats.

Vegetables, supplied by the same vendor of locusts and Persimmons, are large, but I should imagine coarse, with perhaps the exception of the Gurken; beautiful miniature Cucumbers, Beans, Carrots, Turnips, Onions, and Horseradish, are all fine, but the palm must undoubtedly be given to the Sweet Potato. Costing but $\frac{1}{2}$ sen per pound retail (i.e., considerably less than $\frac{1}{4}$ d.), it is cheaper than Rice—an invaluable food for both man and cattle. It yields excellent starch and alcohol, and for a change is sometimes preferable to the ordinary varieties. Handsome it cannot be called; long, round, tapering at either end; in colour a dirty crimson, each tuber looks as though it were dying of apoplexy. *James H. Veitch*.

CHICAGO.

CHRYSANTHEMUM SHOW.

THE "fair" proper came to an end in the midst of general depression, owing to the shocking murder of Mayor Harrison, and, in consequence of the confusion prevailing at Jackson Park, that location was abandoned by the managers of the Chrysanthemum show, and a new site chosen but two days before the opening of the show, the choice being the Art Institute on the Lake Front, where the World's Fair Congresses were held during the summer. There is no doubt that this change redeemed the show from failure to success, for out at the Fair, in spite of promises made by the directors, the Horticultural Building was in a state of general upheaval, electric-light wires cut out, and roadways blocked by trucks and railway tracks. Visiting the Fair two days after its official close, I was amazed at the turmoil it presented; apparently the only thought of the exhibitors was how to get away in the shortest possible time. The directors, however, still charge full rates of admission to this scene of confusion, which looks like the property-room of a gigantic theatre.

The best display at the show took the form of cut flowers and seedlings, the plants being generally poor, excepting in those grown to single stem and flower. The show represented a very wide range of territory, extending from New Orleans to Canada, and from San Francisco to Boston; while the pre-

sence of M. Crozy's new hairy white *L'Enfant des Deux Mondes*, and the amber sport from Vivian Morel, Chas. Davis, which I notice is a feature in English collections, gave the display an international character. There was not a single flower displayed on a board, this form of staging being very rare at American shows; they were all arranged in vases on long stems, the shortest being 12 inches, while other classes called for stems 18 inches to 3 feet. The great advantage of this system is, that size and quality of bloom alone cannot be considered; stem and foliage are material points in the display.

The class calling for vase of fifty blooms was superb, the 1st prize going to J. C. Vaughan, of Chicago, for a magnificent vase of *The Queen*, a large loosely-incurred white, new; this variety also received 1st for vase of one hundred blooms, and vase of twelve blooms, white. This variety is regarded as the most promising new white for exhibition and commercial purposes, surpassing *Niveus*, the great prize-winner of last year.

In the class of fifty blooms in vase, yellow, Mrs. J. G. Whildin was the winning variety; in the same class, pink, *Beau Ideal* and Mrs. Higinbotham, two new seedlings, large and incurved, and *Mermaid* were combined; while in the same class, crimson, Geo. W. Childs, was favoured.

The largest number of prizes went to E. G. Hill, Richmond, Indiana, both in cut flower and seedling classes. He exhibited *L'Enfant des Deux Mondes*, which was put 2nd to *The Queen* for vase of fifty; Chas. Davis, the first appearance here of that variety; Robert Owen, and a number of his own seedlings. He received the 1st prize, one hundred dollars for best seedling on exhibition not yet disseminated, the winner a huge globular yellow, named *Challenge*; it is extremely full, very robust in growth, and clear sulphur-yellow in colour. The same exhibitor received 1st in the class for yellow seedling with *Eugène Dailledouze*, which may be described as a mammoth Kioto, with broad incurving petals of bright yellow. The same exhibitor also received an Award for *Inter-Ocean*, which may be described as a creamy-white *Vivian Morel*. Another new yellow which received special award was *Major Bonnafon*, a superb flower, shown by Fred Dörner of Lafayette, Indiana.

A Californian seedling which caused much comment was Mrs. J. Geo. Ila, a ball-like white; it is of remarkable substance, bearing the long journey from the Pacific coast without any injury. *Pitcher & Manda*, a seedling raised by the firm of that name, showed a remarkable break; it was a large flat flower, the centre petals yellow, the outer ones forming a ring of white.

The present taste in America is for globular incurving sorts, and the raisers of new seedlings are bending their energies in that direction. Ivory is still held as one of the best commercial whites, and was shown in fine form here, but it was excelled by *Marie Louise*, a new seedling of similar form, but purer colour and narrower petals. Very few of the hairy type were shown; Mrs. Hardy is generally thought an unsatisfactory grower, while the livid colour of *Louis Boehmer* is objectionable. *L'Enfant des Deux Mondes*, while generally admired, did not create much enthusiasm.

Among amber or tawny shades, Charles Davis was perhaps the most admired variety; in pink, *Vivian Morel* appeared most frequently, and in crimson Geo. W. Childs was most prominent. Ed. Hatch, much admired last year, was coarse and streaky as seen here, but *Eda Prass* fulfilled all last season's expectations, and the same may be said of *Harry Balseley* and W. R. Smith.

In addition to the Chrysanthemums, there was a fine show of Roses, renewed day after day, and many baskets and table decorations. The entire premium list amounted to 6000 dollars in money and forty Columbian medals.

Among further awards from the World's Fair we note F. Sander & Co., for *Dracæna Sanderiana*. The final lists of awards are not yet revised, and the department is in a quandary because they have not medals enough to go round. Congress issued an

appropriation for 50,000 medals and diplomas. The judges, however, have far exceeded this number, and the Commissioners are undecided whether to ask Congress for another appropriation—which they are very unlikely to get, or whether to ask exhibitors to be content with one medal and a batch of diplomas, where more than one has been awarded. This seems rather small, but the awards mean very little, and the entire Department of Awards has received more serious criticism than any other section of the World's Fair. *E. L. Taplin, Chicago*.

"TAKING" THE BUDS OF CHRYSANTHEMUMS.

THIS is a term that has taken root in the jargon of cultivators of the Chrysanthemum, and it will doubtless remain. We have all had to make a beginning in our course of practice, and it may be thirty or thirty-one years since I made a start on my own responsibility. I had a fine lot of plants, which had been grown without any intention of exhibiting; and I knew nothing about "taking" the buds, but I happened to be honoured by a visit of a secretary of a Chrysanthemum Society, and he was good enough to say, "What a splendid lot of plants you have, but you must begin to 'take' your buds;" so I had a lesson in bud-taking. The flowers, I may say, were all of the incurved varieties at that time. I was asked to exhibit, which I did, but I found that my flowers, which I thought were good, lacked "finish." I had tried my hand at dressing, only to fail the first time, but afterwards was fairly successful. But I found that, in growing Chrysanthemums, as in growing Carnations, there was no chance to win with badly-grown flowers, and I also found that there was no chance to win unless the buds were taken at the right time. A quarter of a century ago, managers of flower-shows had an idea that the third week in November was the best time in which to hold them. Now they are mostly over by the middle of the month, and they begin in the first week. As far as I can see, it all resolves itself into a matter of taking the buds.

I was quoting from memory when I referred to *Queen of England* lately, and varieties from it, as a supposititious case, and must have confused the experience of years ago, with the necessity of obtaining blooms for exhibitions two weeks earlier. *Queen of England* and varieties of it are the mainstay of the exhibitor who shows cut blooms. If these fail, his case is hopeless. Our method of growing the *Queen of England* type during the last year or two has been to divide them into two sections. The *Queen of England*, Alfred Salter, John Doughty, and Mrs. Robinson King, should be stopped about the third week in May. *Empress of India* and *Lord Alcester* are not stopped at all. Something also depends upon the time of putting in the cuttings. We began on the 17th of last month, but not with the *Queen of England* type, which are put in six weeks or two months later. Stopping the shoots in May causes the crown buds to form as near as possible to the last week in August and the first week in September. The *Princess of Teck* and varieties raised from it are treated altogether different. The cuttings are put in about the middle of November, and I may say, that we strike all our cuttings under glass-lights in the cool Orchid-house, and seldom lose one of them. We have begun now, and will go on until March. The *Princess of Teck* varieties are *Hero of Stoke Newington*, the first sport, Mrs. Norman Davis, Lord Eversley, Charles Gibson, and Lady Dorothy. These also make a strong point in a stand of twenty-four blooms, but they are only good for the front row. I should add, that in all cases one cutting should be planted in the centre of a small flower-pot, so that the plants may, when well-rooted, be shifted into sizes larger without injuring the roots. Stop the plant in April, and select three growths, each of these will make another break in June, but grow up one shoot only from each of them, and buds may be expected to form about the last week in August. Take the "crown" buds at that date, and it is rather remarkable that

buds taken at that time, or even in September, will flower sooner than those taken the first week in August from a crown bud. Next in importance to the Queen of England and its varieties, and superior to the Princess of Teck type, is the Princess of Wales and sports from it, including Mrs. Heale, Violet Tomlin, Miss M. A. Haggas, Mrs. Coleman, and a later deep yellow, Richard Parker. We strike the cuttings of these in January, and they are grown on with a single stem until each plant produces three growths naturally, and we like to see the buds set about the middle of August.

Prince Alfred, and its reddish-brown sport, Lord Wolseley, are two sorts which require careful handling to get the blooms late enough. Cuttings should be put in late; if they are put in as late as February or early in March, they will sometimes produce the best blooms. They should be stopped in May, after the three shoots have started. Grow one shoot from each, the object being to retard the production of the crown-bud, which it will do by two or three weeks, bringing the time of bud-taking to the last days of August, which is a good time.

Lady Hardinge is a good old sort, which has held its own as long as I can remember; and the buff sport from it, Mrs. Shipman, which has also been much valued by exhibitors, but it is now surpassed by Madame Darrier. Put in the cuttings about the middle of November, or as soon after as possible. Run up one growth only, and let it break naturally into three. Take the crown-bud about August 26.

Jeanne d'Arc is a good exhibition variety. Stop the first week in June, and the growths from this stopping will form a crown-bud about the end of August. M. R. Bahuant is a distinct and very fine variety, with blooms of the Queen type; our blooms this year were not full nor of good substance, taken from what the growers call terminals started when the crown-bud showed in the second week of August. John Salter and the golden-coloured sport from it may be treated like the Queens. Take the buds about the last days in August, but it is a difficult type to grow well. The opening flowers should be placed close up to the glass roof in a good light. The above remarks have taken in nearly all the best exhibition varieties. I have not yet grown the new incurved variety Baron Hirsch, but have already bought it, in the form of cuttings for next year; we can only take our notes from cuttings put in on the 17th of this month, but very likely the tops will be taken off and struck in the spring. It is an excellent incurved cinnamon-coloured variety.

The Japanese varieties do not require so much care as the incurved sorts; but really good exhibition blooms cannot be obtained unless the crown buds are timed well. Take for instance the well-known exhibition varieties Sunflower and Edwin Molyneux: we stop these in March, and train up one shoot only; allow them to break naturally into three growths, and take the crown-buds about August 18. The question may be asked, why stop such varieties as Edwin Molyneux in March (say the third week in the month)? The reply is, simply to retard the formation of the crown-bud, for if it is allowed to break naturally, the buds form too early for the dates of the exhibitions, and flowers obtained from terminals are not good enough; but if stopped, say, March 20, and one shoot only trained up, the usual three growths will be produced later, and the crown-buds can be taken about August 18 or 20, in good time for the blooms to grow to the largest size and rich in colour for the exhibitions, instead of the colours being faded and the flowers past their best, which they might be if this stopping had not taken place.

The above remarks apply to varieties that flower early, and which cannot be grown to exhibition size from the terminal buds. Mrs. E. W. Clarke may be selected as the type of a late-flowering variety, and this can also be brought into bloom at the right time by stopping. The plants break into three growths in June, but the crown-buds from these would not form in time to give good blooms early in November. The procedure is this—pinch the point out of the plants early in April. New growths

are produced at once, and each of these must be trained up in the hope that the crown-buds will be formed about the second week in August, which will be a good time to obtain exhibition blooms the first week in November.

It is useless to lay down a hard-and-fast line, for one cannot grow Chrysanthemums by square and rule, and even the best cultivators have to consider their work daily and weekly, not only as to taking buds, but as to striking cuttings, repotting the plants, surface dressing after repotting, &c. The past season has been as fickle as any that the oldest growers have ever experienced. And good growers in different districts obtain equally satisfactory results by working in opposite directions. One of the best growers advises putting in cuttings of the Queen of England type in December; but I once



FIG. 110.—SUNFLOWER, LORENZ'S MILFLOWERED: HELIANTHUS MULTIFLORUS VAR.; COLOUR OF FLOWERS DEEP YELLOW. (SEE P. 715)

saw six faultless blooms in one stand of Lord Alcester, which were produced from cuttings struck in March. They easily won first the prize in a good competition.

In reference to my remarks recently, Mr. Brian Wynne kindly writes to say that the term "crown bud" was first used by the Liverpool growers some fifteen years ago, and that a discussion took place thereon in the *Gardeners' Chronicle* about that time. It is not a matter of supreme importance; but most growers know well what "crown bud" and "terminal bud" mean, and also how to take them. J. Douglas.

CHRYSANTHEMUM BUDS.

The most suitable time to leave the buds of Chrysanthemums so that they will develop into handsome blooms—that is, when grown on the three bloom principle—is certainly to many people most perplexing. Even amongst the most experienced growers there is a difference of opinion, so when these disagree, it makes it more perplexing still for the less experienced to know what to do with certainty.

True, there cannot be any fixed rule, as witness the past season, as by following the orthodox rules, many varieties certainly were spoiled for all good purposes. Seasons, therefore, have to be taken into consideration, for no man can tell in advance how the season is going to turn out, whether it is to be an early or a late one, with an abnormal amount of sunshine on the one hand, or an undue amount of wet on the other. If we knew this, the plants could be so arranged that the buds could be induced to show at the most suitable date, so as to ensure perfect and well-coloured flowers. Others, again, seem to come better some seasons than others, like Roses for instance, and yet the cultural details appear similar. Others, again, are more constant, and differ but little, whatever the seasons. Again, some varieties, especially amongst the Japanese, have to be experimented with, to know what to do for the best. Some of these, if the buds are set too early, come coarse, but, if allowed to run on to what the majority of gardeners now recognise as the terminal, are too small for any purpose, whether for exhibition or home show. Even where the smallness of bloom is objected to, the additional height is, as with some varieties, the running on to the terminal, means an extra 3 feet in height, and this, for those people who may have not the structure to accommodate these tall plants, is a serious objection. This much I do know, that those people who care for Chrysanthemums not merely for exhibition, but for the embellishment of the conservatory or greenhouse, look upon these tall growers with extreme disfavour, and in some cases the edict has gone forth that they will have no more of them. Taking a flower as a flower when cut, the majority of people would favour a smaller but well-formed and good-coloured bloom, to coarse early ones.

My opinion is, and I have further proved it by experiment, that with many varieties the growth must be checked by stopping in March if good-formed and well-coloured blooms are to be secured from the "crown" buds. Take Sunflower, for instance, or even Stanstead White and Avalanche, these, if grown on to the terminal before the buds are set, will only produce small and worthless flowers. Sunflower, whatever the season, I should stop the third week in March. From this stopping, one growth would be taken up and allowed to grow on and branch out in the ordinary way, and then select the three crown buds. Stanstead White and Avalanche I should only operate upon a part of the plants, as if by chance the season should turn out late, the crown buds would show rather too late to secure perfect flowers, although considerably better than terminals. Edwin Molyneux should also be stopped in March, whatever the season; this variety has been grand this season without exception, although the buds showed in a manner differently to that which is usual. For instance, the plants, although stopped in March, showed the crown buds too early, but this was exceptional, and must be attributed to the season. The shoots, therefore, were allowed to run on, and the next buds taken, when the whole of the plants, without exception, produced the handsomest flowers for the variety I ever saw. In this case, what is ordinarily known as the terminal buds, produced good flowers, but these showed during the third week in August. There are two other varieties which require more exceptional treatment still so as to produce good flowers, and those are Miss Falconer Jameson and J. Stanborough Dibben; these should be topped about the third week in March, and then allowed to form two or three shoots, and from these shoots take the first buds which show. These buds will produce perfect flowers, of good colour, and be in perfection throughout November. This, I know, is different to the usual way of treating Mrs. Falconer Jameson, but it produces a later flower, and also a better shaped flower, and of much deeper colour than if allowed to grow on without topping, and taking the first bud which shows. I have not touched upon the incurved, as no doubt that experienced grower and old exhibitor and judge, Mr. Douglas, will respond to the editorial invitation. A.

FLORISTS' FLOWERS.

ANEMONE-FLOWERED CHRYS- ANTHEMUMS.

The large Anemone and Japanese Anemone varieties have been shown well this year at the exhibitions, and perhaps these classes will be better represented in the future. Two new kinds were exhibited recently, one a small Anemone variety, named Mrs. C. J. Salter, and a fine Japanese Anemone kind, W. W. Astor. The former is a cross between Scarlet Gem, a neat, formal single flower; and Nelson, which belongs to the Japanese Anemone section, and has purplish-crimson flowers. The outcome of this parentage is a pleasing buff-coloured kind, the bloom very neat and distinct. W. W. Astor is a promising variety, the flowers large, guard-florets of a bluish tint, and the disc yellow shaded with rose. So many new varieties are raised now, that the utmost care must be taken in selecting. Of the Anemone class very promising are amongst the later acquisitions, E. C. Jukes, purplish-magenta, the centre of a golden colour, with regular guard-florets; Mdle. Nathalie Brun, white or sulphur-white, a distinct shade; and Mdle. Paule Lefont, rosy-white, with gold-shaded centre. The most beautiful of this section is Delaware, which has been shown well; it is pleasing on the plant, which is not always the case on show Chrysanthemums, the flowers large, well-shaped, and the guard-florets white, the disc delicate yellow. The Japanese Anemone class verges in many cases close upon the other section. Three good new kinds are Duchess of Westminster, which has the characteristic long petals, the colour bluish, and the disc is rose suffused with a bronzy shade; M. Dupanloup, rosy-violet, the disc tipped with rich gold, and Rodolphe Rag'onière, a delicately coloured flower, the guard-petals long and rosy-white. We should like to see more kinds of the character of Fabian de Mediana, in which the guard-florets are of very great length, longer than in any other variety, and of bluish colour, the disc purple. The Anemone-Pompon Chrysanthemums, like the others, have been more largely shown than usual, and we hope to see many new varieties added to them. Emily Rowbottom is one of the best of the more recent kinds. It is a sport from Marie Stuart, a well-known variety, raised by the celebrated John Salter in 1866. It is like the parent, the flower of excellent form and creamy-white, useful both at the exhibition and for cutting.

CHRYSANTHEMUM, WHITE LOUIS BÖHMNER.

From what we can see of this variety it is far better than the type, Mrs. Alpheus Hardy, which is uncertain, usually making very poor growth. The flowers are large, full, and open, a soft primrose colour passing to purest white with age. It is vigorous in growth, free, and retains all the good qualities of its parent, without its dull colour. *Eufaut des deux Mondes* is a synonym.

CHRYSANTHEMUM MDLE. THÉRÈSE REY.

This is a splendid Japanese variety, and this year has been exhibited finely in several stands. The flowers are refined, and very large, as is necessary now for a show bloom. They are creamy-white, the petals broad and incurved somewhat. It is the first novelty in this class of recent years. *V.*

OUR OLD-FASHIONED PINKS.

The old laced Pinks of the florist, which have been more or less popular with some florists for pretty well three-quarters of a century, are now creating a fair amount of interest, and many are taking up their cultivation; varieties greatly improved in form have been from time to time introduced, and recently several new kinds of considerable merit have been added, and exhibitions of the florists' Pinks have been organised.

There is not one of our hardy flowers which more deserves recognition and encouragement, and gives less trouble, and its fragrance generally adds another substantial reason why it should be grown. The old system of raising plants by pipings (i.e., cuttings from the side-shoots), has existed from time immemorial. I have in my early days spent many hours—I may say, days—in making pipings, and placing them firmly and close together under hand-glasses, in sandy soil, in a shady position, and not removing the square hand-glasses until they were struck; but here, in the neighbourhood of Birmingham, our best Pink growers layer the plants as they would Carnations, and have abolished the system of raising from pipings. Well, there cer-

tainly is a very great advantage gained in securing strong, healthy, well-rooted plants at the end of September for planting out, with a certainty of getting them well-established, and able to resist severe weather; not but the Pink is a perfectly hardy plant when well established, but it is so often the case that weak plants are planted out in November, with no chance of their getting established and strong before winter sets in.

Of the laced varieties, those which have a white ground colour, with purple, or shades of rosy-crimson edgings to the petals, with a dark blotch at the base of each petal, the following are some of the finest:—Amy and Ethel are two very fine flowers, raised by Mr. Brown, of Handsworth, Birmingham, and recently introduced; and Amy is the finest of all the Pinks grown. Fellowes' Rector is another very fine flower, and a great acquisition; Mrs. Fred. Hooper and Harry Hooper are also two fine varieties, raised at Bath; Bertha, raised by Mr. Paul, at Paisley, is another first-class flower; so also is Fellowes' Favourite, quite new, and most promising; Empress of India is a gem, very bright in colour; and Turner's Boiard, Turner's Godfrey, and Turner's John Ball are three good old sorts; Paul's Modesty is a very refined flower, and first-class; and three other flowers raised by Mr. Fellowes should be in every collection, viz., Minerva, Rosy Morn, and Princess Louise; and Brown's Mrs. Dark is a good useful flower. These are all varieties which are grown for exhibition purposes, still all are good telling varieties for border decoration.

As border varieties, we now have several excellent varieties of recent introduction to be added to such old kinds as Pheasant-eye, the old Paddington Pink, Anna Boleyn, and others. Mrs. Sinkins, a white Pink, soon became very popular as an improvement on the Old White, but this was superseded in quality and form by another fine white self, named Her Majesty, and this again is beaten by Mrs. Lakin, raised by Mr. Joseph Lakin, of Oxford, and is the best white Pink grown, and a fine market and decorative variety. But the Old White Pink must not be despised, for it is such an abundant bloomer, and delightfully fragrant. Lord Lyons is a very fine bright rose-coloured variety; and Derby Day, Beauty, Mrs. Barlow, and Heath's Beauty are all desirable varieties, and all more or less fragrant.

Whilst on the subject of Pinks, the large genus of *Dianthus* opens out a wide field to hybridisers, and as an instance of what can be done by cross-breeding, the Marguerite Pinks have been taken in hand by a Birmingham florist, and crossed with the florist's Carnation, and the experiment has resulted in improved form of the flower, with the habit of the Carnation, and the early-blooming properties of the Marguerite Pink, plants flowering freely in six months after sowing the seeds. Our fine varieties of Mule Pinks are hybrids, and very lovely things they are; and the whole range of the *Dianthus* genus embraces a great variety of form, habit, and colour, and all more or less beautiful. *W. D.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

PINES.—The greatest care should be exercised at this season of the year in applying the requisite heat and moisture, for excess in any form causes irreparable damage. Dripping of condensed moisture from the roof must be avoided. Plants which are now to be forced for fruiting during early spring should be allowed more heat, and if they have been well rested, and the pots are full of healthy roots, 70° at least may be given, with a rise of 10° from sunheat; bottom-heat should be 85° to 90°, and water given with care at a temperature of 90°—excessive moisture in any form is injurious. The state of the weather, and the amount of fireheat required, must determine the amount necessary. Plants forced to show fruit by extreme dryness at roots and a high temperature, give a poor reward for the labour expended on them. Plants for later succession need not have a temperature higher than 55° to 60°. Those which are swelling their fruit should not have lower atmospheric temperature than 70°, and 85° to 90° at roots. These will require looking over frequently in order to prevent the roots from becoming too dry, and at all times a healthy moisture in the atmosphere must be maintained.

VINES.—Until the buds of Vines which are now starting are pushing, the temperature need not rise

above 55° in absence of sun, when an increase of 10° may be allowed, but when growth has fairly started, an increase to 60° may be maintained at night, except during severe weather. Syringe the Vines twice or thrice daily with water about 85°, and give a supply to the roots at about 90° if they require it. Where manure is used to induce moisture, let it be turned frequently and damped. Roots in outside borders should have a temperature of about 60°, and be kept well covered by litter and leaves. Bracken is excellent for this purpose. Vines in succession-houses should also have their roots protected, and be otherwise prepared for forcing. Till the houses are closed, the atmosphere should be kept thoroughly dry and cool. Though some take off the lights in order to thoroughly rest the Vines after they have shed their leaves, I do not advise the practice. Pot Vines require careful application of moisture at the roots; water about 85° should be given, and the plants should be thoroughly watered. Gentle forcing gives the best results, and when days are longer and sunheat is more abundant, time can be easily made up with advantage to the Vines—55° to 60° from fireheat should not be exceeded. Vines in pots which are cut back and are to be forced early next year may have the drainage put right, and be surfaced with rich soil ready to be started gently into growth, and when grown early they can be forced to fruit with more certainty. Cuttings of Vines from which eyes are to be taken to supply young plants should not be allowed to become dry. When they are removed from the Vines, they should be kept in damp soil till wanted.

CUCUMBERS.—Where regular successions of Cucumbers are in request, the present time is favourable for sowing seeds of a good early variety. Use sweet turfy loam, with a third of good leaf-mould in which to sow the seeds, and cover them lightly, giving little water till leaves are formed. Keep them near the glass in a temperature of 70° to 75°. If fermenting manure is used, it should be rendered sweet by being often turned before the bed is made, and careful attention that rank steam is not confined about the plants must be given. Cover the glass well with mats or frigi-domo.

PLANTS UNDER GLASS.

By BAILEY WADDS, Gardener, Birdsall Gardens, York.

CLIANTHUS PUNICEUS VAR. MAGNIFICA.—This plant will now require liberal supplies of manure-water to help it to flower freely; it is one of the most useful flowering plants if kept clean from red-spider, which may be done by syringing it well with petroleum emulsion or Lemon-oil. If the plant can be allowed to grow over the paths on arches or festoons, its bright-coloured blossoms can be the more readily seen.

BRUGMANSIAS.—These plants, if grown in pots, should now be well pruned-in, and placed behind the stage, or in a shed from which frost is excluded; and if kept dry at the root they will be quite safe until required for starting in the spring. Those that are planted out in warm conservatory or corridors will continue to grow and flower throughout the winter, if kept supplied with water.

MANDEVILLA SUAVEOLENS should be well pruned-in, whether growing in large pots or planted out in borders, and it must be kept well up to the light; the plant must be kept rather dry during the winter. The past season was favourable for its flowering, as it enjoys plenty of sun-heat and fresh air, but a frequent use should be made of the syringe to keep red-spider under.

NERIUM OLEANDER AND N. O. ALBUM, when grown in cool-houses, should be kept rather dry during the winter, but sufficient water should be afforded to keep the foliage green and in condition. Very tall plants may be cut down, only leaving some of the green shoots which spring up from the base. Neriums grow well, and flower abundantly when planted out against a warm wall in the greenhouse or the conservatory. In the growing season the plants enjoy heat, air, and much moisture at the root. To rid the plants of brown-scale, syringe them frequently with an insecticide, laying pot-plants on their sides.

CHOISYA TERNATA.—Some plants of this sweet Hawthorn-like flower should be placed in the forcing-house, they being most useful for house-decoration. They flower abundantly if planted out against a wall or pillar in a cool-house.

ROSES IN POTS.—The H.P.'s, Teas, and other varieties which may have been placed in heat at the beginning of November should have a slight increase

of warmth, the bottom-heat being kept up to about 70°, and air admitted on mild days as much as possible, at the same time avoiding draught, syringing the plants before the flower-buds begin to assume colour, with the same composition for the destruction of mildew as that previously recommended for the Chrysanthemum. If green-fly be present in ever so small numbers, fumigation with tobacco or its preparations, or syringing with Quassia-water, must be practised, and liquid-manure liberally applied. A temperature of from 55° to 60° by night, 65° to 70° or 75° by day, with sun-heat, at the same time fresh air being admitted. Introduce into mild heat another batch of plants, plunging the pots in a gentle bottom-heat, with the temperature of the house maintained at 45° by night, 55° by day, for a fortnight. If the soil is dry, afford the plant a good watering. As an illustration of our variable climate, on November 30 the weather was fine and mild, without any appearance of frost being imminent, but December 1 opened with snowstorms, the thermometer not rising above 30° by day, and falling at night as low as 9° or 23° of frost. It is on such nights that the least neglect of the fires leads to disaster. The plants growing in the borders of the Rose-house should be closely examined at short intervals for mildew and aphid, and preventive means taken if either be observed. Dry borders should be dressed with some inodorous manure previously to being watered.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

MASDEVALLIAS, ETC.—These moisture-loving plants will now be growing freely if the house they occupy is kept at a temperature of about 50° to 55° at night, with a moist atmosphere generally, a plentiful supply of clear rain-water at the roots, and air freely admitted whenever the weather permits, especially keeping the ventilators near the floor open, provided the incoming air at first is brought into contact with the hot-water pipes. It is a mistake to try to cultivate these plants successfully in a temperature much lower than that given above, and when they are kept moist, and a lower temperature is maintained, the spotting of the leaves in some collections of these plants, and which mostly shows itself on the under-side of the leaf is likely to occur. This remark applies more particularly to *M. Harryana*, *M. Veitchii*, *M. ignea*, *M. Daviana*, and others of that section, these suffering more than others. The larger amount of fire-heat now required is apt to cause an increase of thrips and red-spider, and the plants should be frequently examined for these insects. *M. tovarensis*, now in flower, is a useful species, and none is more free to flower; it begins by opening its flowers on the old stems, and these are followed by those on the new flower-spikes, which fact shows it to be a mistake to cut off the old flower-spikes. *M. ignea*, also free-flowering, will soon open its flowers, and this plant, together with *Sophranitis grandiflora*, *Mesospindium* (*Cochlidia*) *vulcanica*, and *Odontoglossum crispum* make a good display at this part of the season, resisting fogs better than most Orchids.

ODONTOGLOSSUMS.—*O. Rossi* and *O. Cervantesi* are species that may be grown with the *Masdevallias*, and should now commence to flower. These require water abundantly at the roots, so that the flower-spikes may be strong and the duration of bloom increased. *Oncidium cheiroporum*, a charming little plant, is opening its flowers in the *Masdevallia*-house. The cooler end of this house, which may be 5° cooler than any other part of it, forms a suitable place for the plants of *Oncidium macranthum*, *O. Loxense*, *O. undulatum*, *O. superbiens*, *O. Marshallianum*, *O. tigrinum Barkerii*, *O. cucullatum*, and *Odontoglossum ramosissimum*; which may all of them have the stage [between the pots and the pots themselves] moistened once a day. The gardener must have a sharp eye for yellow thrips, for if they gain access to the new growths they soon disfigure them. Plants of *O. tigrinum*, if in flower, should be allowed to open all their blossoms, and then the spikes should be cut off. This practice saves this and other species of *Oncidiums* from being weakened, and the quality of the bloom lessened.

PLEIONES.—*P. lagenaria*, *P. Wallichiana*, *P. maculata*, the last to finish flowering, may be repotted when the flowers have faded, and roots are extending from the base of the new growths. If the operation of repotting is much delayed these roots get broken. Plants that were repotted last need not be repotted this season, provided the potting materials are still in good condition. In repotting do not divide all the pseudobulbs, but pick out the

material from among the roots, as by so doing, more bulbs may be placed in a pot or pan of 6 inches diameter than when these are separated. The potting-materials should consist of equal parts good peat, fibrous loam, sphagnum moss, leaf-mould, and a good sprinkling of finely-broken crocks, and silver-sand added, half-filling the pots or pans with clean crocks, and put a handful of sweet moss over them; and above this the pseudobulbs and potting-stuff. Water very sparingly for a time, and place in the Cattleya or intermediate-house.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

RASPBERRY PLANTATIONS.—The mild weather that has hitherto prevailed in the south allowed the gardener to get the stools dressed, and the canes tied to the stakes and wires as the case may be. Tall growers like Prince of Wales and Superlative should have stakes 8 feet in length, these being driven into the ground about 15 inches. The stakes are best when made from Oak, Ash, or Hazel, cut and made one year previously, gas-tarring the end that goes into the ground about 2 feet up, i.e., above the ground-line. These stakes will last from two to three years, whereas green stakes become rotten in one season unless very stout. In tying-in the canes, select four of the best to fasten to the stake, cutting away all others. Where strained wire is used, the canes should be tied-in at an average distance of 9 inches apart. Raspberries thrive in almost any good holding soil, and if the staple is light or infertile after clearing the ground of weeds and the longer parts of the summer mulching, afford it a heavy top-dressing of some strong kind of soil. This the frost will pulverise, and the roots of the Raspberry near the surface soon take possession of. In a stiff or retentive soil the old materials from hot-beds and leaf-mould well mixed together form a very appropriate top-dressing.

BUSH FRUIT TREES.—The season hitherto has been unusually favourable for the pruning of fruit trees, and assuming that all the bushes are now pruned and dressed with newly-slaked lime and soot to deter the birds, the ground should be cleared of weeds, prunings, and rubbish. It is best to get this kind of work finished before the New Year if possible; but no set time for doing this or for the preparation of the land can be laid down, as, according to the nature of the land, so must the practice be; and whilst stiff land is benefited by being afforded a dressing of burnt refuse, leaf-mould, or any other open materials, lighter land should be pointed over with digging-forks, levelling it, and then strewing evenly over it a dressing of the best kind of holding soil that can be obtained. For black Currants, rotten manure should be forked carefully in, not injuring the roots by so doing, and if the red and white Currant bushes lose their branches, a dressing of chalk or lime will stop it, either of them seeming to impart vitality to the land.

THE FRUIT ROOM.—Precautions should be taken to prevent the temperature of the fruit-room falling below 35°, and to ensure this ventilators should now be kept close; to avoid the frequent opening of outside doors, sufficient fruit should be taken to last for several days, the door being covered up with mats or straw. Also outside walls, unless covered with Ivy or other evergreen, should be covered with Wheat-straw kept in place with twine and nails.

THE FLOWER GARDEN.

By T. H. CRASP.

HARDY FERNS AND FERNERIES.—In open weather, the re-arrangement of existing ferneries, or the erection of new ones, may be taken in hand, the deciduous species having lost nearly all their foliage, and the evergreen ones being to a certain extent at rest. Any of the Ferns may be divided, if that be considered necessary, carefully doing this, or the results will be poor next year. Lift the roots carefully, for the greater the quantity of good roots attached to the divisions of the roots the more satisfactory will be the growth in the spring. Some gardeners prefer to transplant and divide Ferns in the spring, but I prefer performing this operation at this season. Ferneries that will not be disturbed should have a good covering of tree leaves to protect the crowns from frost, all the old dead fronds being allowed to remain for the same purpose. It is a common practice to clear off these for the sake of neatness, but doing this leaves the crowns much exposed, and is a mistaken practice, the dead fronds affording great protection to the crowns, especially when the new growth begins.

BEDDING PLANTS, VIOLETS IN FRAMES, ETC., should be aired freely in mild weather, the lights being altogether removed in the middle of the day if it be warm. Remove decaying foliage at short intervals of time, and pack a good thickness of tree-leaves, Ferns, or litter against the sides of pits and frames, as high as the glass. This will do much to keep the temperature equable, and prevent frost from entering. If frost should gain an entry, sprinkle the foliage with cold water, and keep the covering on the glass for a few days, to prevent rapid thawing. These remarks apply to the hardier kinds of bedding plants; but the tender kinds, as *Alternanthera*, *Coleus*, *Iresine*, &c., should be kept gently growing on a shelf near the light in a warm house.

ROSES.—There is not a great deal to be done during this month with out-door Roses, but a few remarks may be useful. In the first place, the plants should receive a mulching of partially-rotten manure, and the dwarfs be protected by drawing the soil up round the base of plants, just in the same way as Potatoes are moulded up, and some litter should be shaken over the newly-made cuttings of Roses and Rose stocks.

BOX-EDGING.—If work is likely to be more than usually heavy in the spring, edgings of Box may be laid at this season, and it will do fairly well if plentifully furnished with roots; but as Box, when cut at the top in the winter, always turns brown from the effect of frost, laying it afresh should, if practicable, be deferred to the spring. Never touch the plants in frosty weather.

THE KITCHEN GARDEN.

By H. O. PRINSEP, Gardener, Buxted Park, Uckfield.

THE MAKING OF HOT-BEDS.—Much careful attention will now have to be expended on this kind of work, forced vegetables being usually in much request, and unless proper care be taken in their production there will be short supplies, and those not of the best quality. The leaves of trees, if raked up and stored in heaps under a covering of hurdles or litter, will have fermented somewhat, and together with stable litter form good materials for forming hot-beds, affording a mild and lasting heat; and although hot-water heating is much used for forcing vegetables, the old hot-bed formed of these materials is preferred by many gardeners. However, a good deal of care is needed in the making, and the materials should be sweetened by being heated several times, and by turning and mixing them together twice or thrice, oftener if there is much stable-dung used. When a hot-bed is made, and the lights of the frame put on, the gardener must wait a few days till the heat rises to its maximum, and if that near the surface, say, 1 foot deep, does not exceed 80°, the bed may be made use of, always, by the way, leaving a vent at the back of the frame for the escape of the vapour arising from fermentation; neglect of this simple precaution being frequently the loss of seedlings, cuttings, and the young shoots of Asparagus, Seakale, &c.

ASPARAGUS.—Another batch of roots may be placed in heat, and when lifting it, be careful not to injure or destroy the roots, as loss of roots means reduced production of shoots. Never lift the roots out of frozen ground, if it can be helped; but if it be necessary so to do, thaw the soil by placing fermenting material on it for a few days; but if covered, as previously advised, there will be no need for this extra labour.

FRENCH BEANS.—These plants will need much care, and those which are in bearing if in heated pits should have a temperature of from 60° to 65° Fahr. at night, according to the weather, lower than this rendering the pods tough. The soil in the pots or of the bed should not become dry before affording water, or growth will be checked, and red-spider and other insects increase in number.

SALADS.—A sowing should be made of Mustard-and-Cress in shallow boxes of soil made firm, the seeds being sown on the top, and pressed in. Endive, Chicory, and Dandelion roots should be blanched in a dark warm place, and for this purpose the Mushroom house answers very well. Radishes and Onions sown at the end of October on mild hot-beds will be ready for use; and Celery will now be in good order, so that there will be no lack of materials for salads.

TARRAGON and other herbs may soon be in request, and the roots should be lifted from the open ground and boxed or potted, watered, and placed in gentle heat. Parsley and other green herbs should be protected by frames, hoops and mats, or the like, as it is difficult to gather the leaves when frozen; not only so, but plants suffer much through being denuded of their foliage when frozen.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Plants, Fruits, &c., to be Named.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be good ones, carefully packed and numbered, and not more than six should be sent at one time. Leaves only, or Florists' varieties cannot, as a rule, be named.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, DEC. 12 { Royal Horticultural Society's Committees, at the Drill Hall, James Street, Westminster.
National Rose Society's Annual Meeting, Horticultural Club.

WEDNESDAY, DEC. 13—East Anglian Horticultural Club.

SALES.

MONDAY, DEC. 11 { Dutch Bulbs, Roses, Narcissus, &c., at Protheroe & Morris' Rooms.

TUESDAY, DEC. 12 { Orchids, at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 13 { Dutch Bulbs, at Protheroe & Morris' Rooms.

THURSDAY, DEC. 14 { Dutch Bulbs, at Protheroe & Morris' Rooms.
Consignment of Lilies, Plants from Belgium, Carnations, Greenhouse Plants, and Roses, at Protheroe & Morris' Rooms.

FRIDAY, DEC. 15 { Orchids, at Protheroe & Morris' Rooms.
Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—40°·7.

WE have already alluded to the issue of successive parts of this monumental work, published by HOUGHTON, MIFFLIN & Co. of Boston and New York. With exemplary regularity, the volumes appear one after another, so that now the publication of the fifth volume gives us an opportunity once again of calling attention to one of the most remarkable works of the century. The orders treated of in this instalment, so far as the North American trees are concerned, are Hamamelidaceæ, Rhizophoraceæ, Combretaceæ, Myrtaceæ, Cactaceæ, Araliaceæ, Cornaceæ, Caprifoliaceæ, Rubiaceæ, Ericaceæ, Myrsinaceæ, and Sapotaceæ. These are dealt with in the same encyclopædic manner as the preceding orders.

Professor SARGENT's style is clear, accurate and free from hesitancy, as might be expected from one who knows his subject so thoroughly well. His extended travel, not only in every part of his own country, but also in Japan, and his familiarity with the trees in cultivation in the Arnold Arboretum which he directs, and in the principal gardens of Europe, enable him to

take broad views as to the identity of species and their geographical distribution. Acting probably on the conviction that some modifications of the neo-American, or Otto Kunzean methods of nomenclature will, in spite of the warnings of ASA GRAY, be adopted by the coming race of American botanists, Professor SARGENT largely adopts that system.

Where it is possible to start afresh, it is no doubt better to act remorselessly on principles, but when we have to deal with a literature already vast in amount, and extending over nearly a century and a half, it is late in the day to set up a new standard.

The elaborate synonymy set forth by Professor SARGENT, and the addition of the principal dates for the publications quoted, however, go far to remove any inconvenience that European botanists might here and there experience.

The plan of the work is to give an exhaustive account of the genera, and species of North American trees (excluding shrubs), together with copious references to botanical literature and incidental notes on the history and properties of the several trees in which even the general reader will find much to interest him. As illustrations, we may mention an excellent summary of the history, properties, and mode of cultivation of the Clove tree, and the numerous biographical sketches of deceased botanists. Each species, moreover, is figured in the most careful manner, so that the botanist gets what artists, who are not botanists, do not give him—an accurate portrayal of the tree so far as the limits of size permit, and correct structural details such as we have no right to expect from an artist.

The present volume may surprise some on first opening it by the number of tropical and semi-tropical species that it includes, such as the Mangrove, the Terminalia, several Eugénias, under which latter heading the article on the Clove above alluded to occurs; Mimosa, &c. This is accounted for by the circumstance, very likely to be overlooked, that Florida gives a home to many outlying species whose head-quarters are in the West Indian Islands. In Florida they reach their most northerly limits of distribution, and so comes about the seeming anomaly of tropical genera occurring in the United States. The inclusion of the genus *Cereus* among the trees of North America may also occasion surprise, as we do not usually associate trees and Cactuses; but of course there is every reason to do so, as the *Cereus giganteus* forms a tree 50 to 60 feet in height, and which occurs abundantly in some parts of Arizona. As a further illustration of the encyclopædic nature of the book, we find a record that *Cereus giganteus* first flowered in Europe at Kew in July, 1891.

Under *Cornus florida* mention is made of THOMAS FAIRCHILD and his work. The circumstance that he was the first, of set purpose, to raise a hybrid plant (a *Dianthus*) is not mentioned, though it naturally gives FAIRCHILD a first-class position in the hierarchy of botanists. The American Cornels, by the way, though so beautiful, rarely flower with us; and the Californian *C. Nuttallii*, we are told, does no better in the Eastern States of the Union. *Pinckneya pubens*, again, is a tree with beautiful flowers, which we should be glad to see in cultivation again. It was introduced here so long ago as 1786, by JOHN FRASER, but "it is rarely cultivated, and has never received from gardeners the attention which the beauty and peculiar structure of its flowers would justify."

Rhododendron is represented by a plate of

R. maximum, the only tree of the genus within the author's limitations; nevertheless, it affords the opportunity for the insertion of an excellent article on *Rhododendrons* in general.

By the way, the artificial character of the distinction between trees and shrubs receives curious illustration in the case of *Kalmia latifolia*, treated as a tree in this book, but which, when cultivated in this country, is always of shrubby habit.

Obviously, we might extend our notice to almost any length, and then not exhaust the points of interest the book presents to varied classes of readers.

We cannot say more of the present volume, whether as regards the work of the author, or that of the artists, than that it is on a level with the previous four.

Some of our readers may be glad to know that it has been added to the LINDLEY Library, where it may be consulted by horticulturists, and that, of course, it forms part of every great botanical library.

ROYAL HORTICULTURAL SOCIETY.—The last meeting for the year will take place in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, December 12. The Fruit, Floral, and Orchid Committees will assemble at 12 o'clock, and new Fellows will be elected at 3 o'clock. The Scientific Committee will meet at 4 P.M.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are requested by Mr. G. J. INGRAM, Secretary, to inform those of our readers who are interested in the above, that the sum of £2 11s. has been received from Mr. BAILEY WADDS, gardener, Birdsall, Yorks; and the sum of thirty guineas from the Reigate and District Chrysanthemum Society.

AGRICULTURAL AND HORTICULTURAL EDUCATION is now well to the front as a subject in a large number of rural districts. At Horncastle it has been ordered that agricultural chemistry shall be taught in the classes, held at the local science and art rooms. In the neighbouring county of Norfolk, Mr. MOREHOUSE has, on the same subject, been delivering a course of lectures (with experiments), to the villagers of Cley. Attendances have been good, and interest, especially in experiments, of an encouraging character. At Winslow, in Buckinghamshire, the young idea is not taking so kindly as it might do to the class for teaching the elements of gardening, for while in classes associated with other subjects there are as many as fifty-five students, those attending the gardening class have not yet totalled ten. The lecture which was to have been delivered at Saffron Walden, on the 20th ult., on the subject of horticulture, was unavoidably postponed, and that because owing to the accumulation of snow-drifts and other impedimenta thrown across the highways by the storm, the lecturer was unable to undertake the journey to the town. As the lecture is, however, one of a series, it will not be lost. At Hertford, on the 20th ult., the Mayor showed his interest in horticulture by attending a meeting of the local horticultural society, at which an instructive paper on "Maures" was read by Mr. WALLIS, gr. to Mr. H. SHEPHERD CROSS, M.P. After the paper had been read, prizes were awarded to the best samples of Apples exhibited in the hall, where Mr. WALLIS had earned the thanks of his brother members of the society and their friends.

GARDENING INSTRUCTION.—The County Council of Worcestershire, recognising the great value of the work carried on by Mr. UDALE, have this year raised the grant to the Union to the sum of £450, it being understood that a second Instructor be appointed, and the scheme extended to the whole of the county. Accepting this responsibility, the Gardening Instruction Committee of the Council, out of many applicants, selected Mr. QUINTIN READ as assistant instructor. Mr. READ entered upon his duties on 11th of September, and his work promises



VIEW IN THE CONSERVATORY AT THE BOTANIC GARDENS, BIRMINGHAM.

to give much satisfaction. The following is a summary of the work done in the year ending September 30, 1893:—

No. of Visits paid to—	
Field allotments	284
Cottage gardens	252
Amateurs' gardens	156
Gentlemen's gardens	41
Market gardens, orchards, and farms ...	78
Lectures and conversational meetings ...	60

These lectures have been illustrated by admirable diagrams prepared by Mr. UDALE, and two practical demonstrations have been given on the pruning of fruit trees. The visits have been to seventy-five fields, representing about 2000 allotments. The range of lecture-subjects has included the following:—root crops, Potatoes, soils and manures, seeds and plant growth, green crops, small fruit culture, large fruit culture, insect pests, window plants and hardy flowers, work for the month, &c. Mr. UDALE reports that distinct progress is visible in regard to the more general and judicious use of lime in dressing fruit trees, preparation of soil, improvement of crops (Potatoes especially), and cleanliness of ground. He recommends the good policy of keeping the boundary hedges free from weeds, and a periodical "brushing down" of Nettles, Thistles, and other native plants, in good time to prevent their seeding; also of making arrangements, as far as possible, to keep the vacant allotments cleaned, in order to prevent fouling of the adjacent land. The council must record their opinion that a great measure of the success of the scheme is due to Mr. UDALE himself, who by his tact, ability, and energy has rendered the movement so popular. It is not easy, says the report of the council, in so short a time, to remove the many prejudices in favour of ancient methods that modern needs have rendered obsolete. In many instances the kindly reception of the instructor has been of benefit to him in showing the capabilities of this fruitful county, and in giving him opportunities of observing intelligent systems of cultivation, which he was enabled to encourage in general practice. The full benefit of the instruction cannot be realized until time has elapsed, but the progress already made is a source of great gratification to the council.

THE WEATHER IN THE RIVIERA.—A correspondent wrote to us from La Mortola, on November 29, saying that the weather still remained very mild, the temperature ranging from 40° to 45° minimum, to 58° to 64° maximum. Vegetation in the garden is luxuriant; almost all the species of *Oreopanax* are in flower; also *Hakea saligna*, *H. eucalyptoides*, *H. pugioniformis*, *Eucalyptus tereticornis*, *E. Lehmanni*, *E. crebra*, *Templetonia glauca* and *retusa*, *Russelia juncea*, many species of *Daphne*, thirty or thirty-five species of *Salvia*, *Echidnopsis cereiformis*, *Euphorbia splendens*, *Pelargonium*, *Geranium*, *Begonias*, *Tecomas*, a quantity of *Solanums*, amongst others, *S. betaceum*, *laciniatum*, *ciliatum*, *Cervantesi*, *tomentosum*, *pseudo-capsicum*, &c.; *Hebeclinifolia*, *Cineraria amelloides*, *plataniifolia* and *populifolia*, *Helichrysum bracteatum*, many *Senecios*, and a great many other plants, are all in full bloom.

A GARDENER'S DUTIES.—Mr. PENLEY, the well-known actor, is fond of gardening. He also keeps cows; but, when on his behalf, Mrs. PENLEY asked a gardener whom he (Mr. PENLEY) engaged to look after the cows, he (the gardener) declined, and was dismissed. Mr. PENLEY, however, had not heard the last of the matter, nor did he until in the Godalming County Court. However, the Judge held that it was no part of a gardener's duties to attend to cows, and awarded a month's wages to the claimant.

THE GREAT GALE which raged on the 18th and 19th ult. did enormous damage in some of the Scotch forests, and in the South also much injury was occasioned. At Cheshunt it blew down a large tree, which, falling on the conservatory of valuable plants owned by Col. HAYWOOD, practically destroyed the whole of them. At Wiveliscombe, in Somersetshire, as elsewhere, it rooted up a number of Apple trees. At

North Curry, in the same county, it blew down two noble Elms. At the little village of North Aston, in Oxfordshire, the collapse of a tree was unfortunately associated with the death of a little girl who happened to be passing it at the time; and notably in Cambridgeshire, it made the return from the markets a journey which will be more memorable than it was pleasant for the farmers and market gardeners.

BOTANIC GARDEN FOR CARDIFF.—At a recent meeting of the Parks Committee of the Cardiff County Council a resolution was passed to the effect that £500 be voted for the purpose of erecting a glass-house, and for buying a collection of herbaceous plants. This is intended to be the nucleus of a botanic garden, to be formed in connection with the Roath Public Park, now being made under the superintendence of Mr. W. W. PETTIGREW, the Council's head gardener, and which will be opened early in the spring.

PHENOMENAL FRUITS and vegetables have not failed to put in an appearance even during November. At the recent Chrysanthemum show at Cambridge, Mr. REEVE, of Mill Road, Huntingdon, exhibited Apples which were part of a third crop borne by one of his trees during the past season; and at Coggeshall, Mr. HOTCHKIN, of the Gas Works, recently gathered a second crop of Apples from one of his trees, which are described as being nearly equal in appearance and size to the first crop. At Horncastle, Mr. ATKINSON, of the Railway Inn, dug up a root of Potatoes, consisting of no fewer than eighty-two tubers, fifty-four of them being suitable for table use, and the total weight of the root being 21 lb. It (the root) was of the new variety known as the Woodhall Wonder.

CHRYSANTHEMUM SHOWS are now all but over for the season. In nearly all directions they have on the average more than held their own when compared with those of last year. One of the best attended was that at Norwich, where the spectators numbered over 8000, and the takings for admission came to £190. At Wokingham the pleasures of the show were not confined to people who paid for admission; the committee with exemplary kindness invited the inmates of the local workhouse and almshouses. At Ely, comparatively inaccessible though it is, the blooms and plants were by no means of wholly local growth; among the exhibitors were one or two of the most persevering metropolitan growers. At Beccles, where the judges were Mr. FISHER, gardener to Sir HUGH ADAIR, and Mr. JONES, gardener to Mr. J. J. COLMAN, M.P., the show in the opinion of those competent gentlemen marked a distinct advance on that of last year.

MUSHROOMS have been under the consideration of the members of the Taunton Farmers' Club. They (the farmers) have possibly learned how keen is the demand for Mushrooms in large centres of population. Certain it is that they attach so much value to the palatable fungi that they have unanimously passed a resolution condemning the old-time practice of allowing Mushrooms to become the property of those "early birds" who in the Taunton as in other districts have been wont to rise with the lark, and to gather Mushrooms wherever found. This, say the Taunton farmers, is a state of things which cannot be allowed to continue. Mushrooms are in future to be regarded not as the property of enterprising early risers, but as belonging to the occupiers of the land on which they grow. Any persons who may set their face against the resolution arrived at by the Somersetshire yeomen, and seek to gather Mushrooms in the old-time manner, are to be prosecuted.

HORTICULTURAL MEETING AT GHENT, ON DECEMBER 3.—The thermometer on the night of December 2—3 fell to 6° C., below zero 21° F., thus preventing many nurserymen and amateurs from sending exhibits to the meeting. M. JULES HYE, however, was very successful with his fine hybrid, *Cypripedium fastuosum* (*Spicerianum* × *hirsutissimum*), which gained for him a Certificate of

Merit *par acclamation*. The upper sepal of the new Orchid resembles that of *Spicerianum* in form, the green base is spotted all over with blackish purple, the purplish rose-ground has a violet sheen over it, spotted over half its height, and with a broad, dull-white border; the mid-rib broad and unusually dark; the petals like those of *hirsutissimum*, three-fourths green and much spotted; the tip is the tint of that of *hirsutissimum*, surrounded with a clear green band, hairy at the base, the lower sepal pale green, the lip dark, glossy, well-veined; staminode yellowish-green, surrounded with glossy purple, the tip ivory white. M. JULES HYE also gained a Certificate of Merit for *Lælia Gouldiana*, a beautiful dark variety. M. WALLEM obtained a Certificate of Merit for a *Dracæna Sanderiana*, which he accompanied with the following note:—"From a commercial point of view this *Dracæna* is one of the best plants introduced during the last few years. We have had ocular demonstration that the plant staged by SANDER & Co. at the Quinquennial Exposition was afterwards shown for some days at the World's Fair at Chicago, whence it was returned to London, not appreciably injured.

HORTICULTURE AT THE ANTWERP EXPOSITION UNIVERSELLE.—There will be held during the World's Fair at Antwerp a permanent exhibition of ornamental trees and shrubs, Roses, perennials, Rhododendrons, Azaleas, fruit trees, &c. This exhibition will be in the grounds of the Exposition Universelle. The temporary shows will number four, as follows: 1st. From May 11 to 16, a general exhibition of horticultural products, fruit, and vegetables grown under glass. 2nd. At the end of June, an exhibition of cut Roses and other flowers, floral decorations of all kinds, plants for rooms, flowering plants of the season, and fruits grown under glass. 3rd. At the end of September, a fruit show, plants grown for export and market, cut flowers, &c. 4th. At the conclusion of the general exhibition, a Chrysanthemum show.

COMPLIMENTARY DINNER TO MR. GEORGE CANNON.—A committee has been formed at Ealing for the purpose of carrying out a complimentary dinner to Mr. GEORGE CANNON, on the occasion of his leaving the service of Messrs. CHARLES LEE & SONS, to go into business on his own account. The dinner is to take place in the Lyric Hall, Ealing, on the 15th inst., and at the request of the committee the chairman will be Mr. RICHARD DEAN.

RETIREMENT OF M. L. GILLEKENS.—For twenty-six years M. L. GILLEKENS has been Director of the Ecole d'Horticulture of Vilvorde, and he has now tendered his resignation. The Royal warrant, while accepting the resignation, authorises M. GILLEKENS to retain his present title as an honorary distinction.

"BOTANICAL GEOGRAPHY."—M. GEORGES POIR-AULT is publishing in parts a French edition of Professor DRUDE's well-known work under the title of *Manuel de Géographie Botanique*. To many it may be convenient to have this standard book in French rather than in German, particularly as the translation has been revised and added to by the author himself. M. PAUL KLINCKE, 52, Rue des Ecoles, Paris, is the publisher.

"DICTIONNAIRE PRATIQUE DE L'HORTICULTURE."—The French edition of NICHOLSON's *Dictionary*, prepared by M. MOTTET, and published by M. OCTAVE DOIN, Place de l'Odéon, Paris, has entered upon its second volume. Three parts are before us, parts 17, 18, and 19, which bring the work up to the article *Dahlia*. The numerous additions, both to the text and to the illustrations, render this French edition very serviceable, even to those who possess the original.

"THE FLORA OF KENT."—Mr. A. D. WEBSTER has published under this title a list of plants observed by himself, chiefly near Bromley, and near Deal and Dover. The list does not aim at completeness, and we fear the critical botanist will

hardly look on it with favour. What can the author mean by *Cornus suecica*, which, he says, is found near the lighthouse, Dover?—and which lighthouse? In some cases the information is superfluous. It was surely not necessary to cite specific localities for the Shepherd's Purse. *Tamarix gallica* was planted in the localities mentioned by the late Mr. Masters, of Canterbury. The Kentish flora is so varied and so interesting, that we earnestly hope we may not have to wait much longer for the promised volume which will contain an authoritative record.

THE BALATA INDUSTRY AT PARAMARIBO.—

Under the name of balata, a substance similar in many respects to gutta-percha, but furnished by *Mimusops globosa*, has been from time to time brought to notice in this country in the course of the last thirty-four years, for it was in 1859 that it made its first appearance in London. In 1862, however, during the International Exhibition, some samples of the raw product were shown from British Guiana, and attempts were made to utilise it either as a substitute for, or in combination with, gutta-percha. The result was that a demand sprang up for it, and some 20,000 lb. were imported in 1865. During the next ten years the demand continued to decrease, reviving again in 1877, and after that fluctuating considerably till about three years ago, when but a very small quantity found its way to the British market. The advantages claimed at first for balata was its greater ductility and tenacity than gutta-percha. But time has proved that, like gutta-percha, balata becomes brittle and cracks when exposed to the air, and that it has no advantages over the longer-known substance. As an illustration of the continued fluctuation of this product, we quote the following extract from a Report by the British Consul on the Trade and Commerce of Paramaribo for 1892:—"Although," says the Consul, "the balata exploitation has made a steady progress, the general results are not favourable, owing to the price of the article having gone down remarkably in the course of the year. Unless an improvement in the price of the article takes place, very little will be done during the next year in the exportation of it, which will be a terrible blow to the district in general. It is expected that an ordinance will soon come into force regulating this industry, and by which ordinance it shall be enacted that the grant-holder has to pay yearly a certain sum per acre of land."

"BIRDS OF MICHIGAN."—The ninety-fourth *Bulletin* of the Michigan Agricultural College is by Mr. A. J. COOK, and bears the title of the *Birds of Michigan*. This publication is not merely well and clearly printed, but generously interspersed with charming little pictures of the birds described, while the style of the writing is both concise and interesting. The pamphlet is no mere list of names, but gives distinguishing descriptions, and a short account of each species, to which are added a bibliography of bird-lore, and a full index.

FOREST TREE PLANTATION.—The University of Illinois publishes, from the Agricultural Experiment Station, a bulletin on Forest Tree Plantation, which should be valuable to all interested in the formation and preservation of plantations of timber trees. Such a publication is especially called for now, when the rapid destruction of the forests is in many places causing great anxiety for the future supply of timber, and any schemes for multiplying suitable species of trees are peculiarly welcome.

FRUIT-GROWING IN CALIFORNIA.—One of our correspondents sends us copies of San Francisco papers of October 14 and 21, containing market reports, in order to show the enormous extent to which fruit-growing is now carried on in that State. Hops also are now largely exported to this country. Forty-five car-loads were sent off from Santa Rosa on a single day to London. From Santa Clara it is estimated that 1600 car-loads of Prunes will be sent off eastward, as well as 125 car-loads of dried Apricots, and 150 car-loads of dried

Peaches, a car-load averaging 15 tons; this means 24,000 tons of Prunes, 2250 tons of dried Peaches, and 1875 tons dried Apricots. The canned goods from this State (Los Angeles and the South not being reported) were as follows, in tons:—

From—	Dried Fruit.	Canned Goods.	Green Fruit.	Raisins.
San Francisco	348	2433	...	12
Sacramento	772	397	9787	...
San José	3070	870	2743	...
Marysville	1092	488	1099	...
Stockton	1428	47	2887	405
Oakland	188	224	937	...
Totals	6943	4459	17,453	417
January	589	1880	...	1757
February	1171	1800	...	1406
March	614	999	...	828
April	218	807	...	321
May	248	1113	370	117
June	134	989	5103	94
July	427	1057	12,827	93
August	1307	2143	29,789	28
Nine months	11,456	15,247	58,542	5071

The shipments from the same terminals during the first nine months of 1892 were 22,180 tons canned goods, 14,335 tons dried fruit, 3918 tons raisins, and 40,152 tons green fruit. We forbear to quote more figures, though we have been provided with many more. The statements, astonishing as they seem, are borne out by other evidence; thus from New York, we learn, that nearly 900 tons of fresh Californian fruit were sold by auction during the season. It will be seen that the Californian growers have three strings to their bow: 1, fresh fruit; 2, canned fruit; and 3, dried fruit; and if there is a loss on one, there is pretty sure to be a gain on the other two.

CHRYSANTHEMUMS.—The *American Florist* gives a series of illustrations showing one manner in which our American cousins exhibit Chrysanthemums. As it is a great improvement on anything we do, we may add that it merely consists of placing a definite number—twelve to fifty blooms of each variety—in an ornamental vase. This allows of ready examination and comparison, and is far better than our board system. In the matter of single-stem specimens, the Americans are no further advanced than ourselves. We may add, that this paragraph was written prior to the show at the Aquarium this week, and at which the American plan has been partially adopted with great advantage.

FUCHSIAS.—Mr. CANNELL obligingly sends us two "sports" from Champion of the World, a variety with deep blue petals and red sepals. One sport has very double flowers, with red sepals and lilac petals. The other is a single flower, with red sepals and four pure white petals, traversed by pink nerves. This latter flower seems as if it were a reversion to a previous simpler form.

HORTICULTURAL COLLEGE, SWANLEY.—The Experiments Committee of the Kent County Council held a meeting at the above on Thursday, November 30. Mr. WING proposed that the secretary prepare a report of the working of the committee, and the experiments undertaken during the past year, to be submitted to the committee at the next meeting, after which it should be sent on to the Technical Education Committee. Mr. PENTLAND SMITH, M.A., B.Sc., offered to give an account of Potato Disease at the next meeting, Thursday, December 14.

COUNTY COUNCIL HORTICULTURE IN SURREY.—An interesting feature in connection with the horticultural instruction now being given in Surrey under the auspices of the County Council, is the appointment of Mr. JAMES DOUGLAS, a member of the Council of the Royal Horticultural Society, as travelling inspector of the classes. His duty seems confined to asking a few questions of the members of the class at the close of the lecture, and of

reporting as to the general interest and intelligence shown by those present. The duty is no light one, as no fewer than 240 lectures are being given during the winter, in courses of six each, at 40 diverse centres, many of them in remote parts of the county, necessitating very late hours. The lecturers are Mr. J. WRIGHT of the *Journal of Horticulture*, Mr. A. DEAN, Kingston-on-Thames, and Mr. G. GORDON of the *Gardeners' Magazine*. Ten lectures per week are divided between them, the lion's share being taken by the two first-named. The courses started on Mondays, September 25 and October 2, and will for the present year conclude on December 15 and 22. The course opened with lectures on flowers and fruit, and change to vegetables as the winter advances. Vegetables are perhaps the more interesting subjects, but flowers succeed in attracting many females. However, so far as the tender sex is concerned, there is no rule. In some places they do not attend any course in numbers, in others they do not put in appearance. The most rural districts generally give the best attendances. How far the appointment of Mr. DOUGLAS as mentioned may prove beneficial remains to be seen, but there seems to be evidence that in some other counties some inspection of the classes in horticulture is much more needed. So far as relates to Surrey, there is no danger of friction between the inspector and lecturers. All work amicably, and it is very probable that Mr. DOUGLAS's reports may help to strengthen the County Council in their horticultural instruction.

LETTERS OF ASA GRAY.—We are pleased to record the publication, in two volumes, of the letters of the beloved American botanist. Only those who knew him, or were in correspondence with him, can fully estimate the fascination and charm which ASA GRAY exercised over his associates. We shall take an early opportunity of making our readers acquainted with the contents of these two volumes, which are issued under the editorship of Mrs. GRAY, and published by Messrs. MACMILLAN & CO.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner took place at Anderson's Hotel, Fleet Street, on the 30th inst., about 140 persons being present; the President, Sir EDWIN SAUNDERS, was in the chair, supported by D. LOW, F.L.S., Professor AGUILAR, and Messrs. E. TRIMMER, J. G. MACMILLAN, S. HUTCHINSON, A. GIBBINGS, W. F. FORSYTH, C. E. SHEA, Dr. GEORGE WALKER, &c. At the back of the chair was a very effective and finished arrangement in plants furnished by Messrs. E. D. SHUTTLEWORTH & Co., Albert Nurseries, Peckham Rye, some noble Palms here and in other parts of the room being a very fine feature. The tables were profusely decorated with Chrysanthemums, and an excellent dessert was furnished by members of the Society. The proceedings were carried out with great spirit, and in the course of the evening the National Challenge Trophy, the Holmes Memorial Challenge Cups, Major COLLIS-BROWNE's Silver Cup, and the various medals, were presented to the winners. In proposing success to the National Chrysanthemum, the Chairman bore testimony to the fine character of the exhibitions which had been held, to the remarkable growth in the membership—150 new members having joined in the present year, and to the number of colonial societies which had become affiliated, inclusive of one at Cape Colony. It was announced that the reserve fund amounted to over £50. The musical arrangements were excellent, and the evening's engagements appeared to give the greatest satisfaction to the large company present.

LONDON PARKS.—Mr. W. BAILEY, superintendent of the Southwark Park, has been appointed as superintendent of the park at Dulwich. Advantage has been taken of this event by the employés at Southwark, who have presented Mr. BAILEY with a cruet-stand as a mark of their esteem.

BRITISH HEPATICÆ.—We have to announce the publication of a handbook of British Hepaticæ by Dr. M. C. COOKE, Messrs. W. H. ALLEN & Co. of Waterloo Place are the publishers. We shall allude to the volume on another occasion.

"THE ORCHID BOOK."—Under the title "*Le Livre des Orchidées*," Count OSWALD DE KERCHOVE DE DENTERGHEM, the well-known and highly-valued President of the Royal Agricultural and Botanical Society of Ghent, is about to publish a work on Orchids, which will form a companion volume to that on Palms which has achieved such a success. We await its publication with eager interest, and advise those of our readers interested in the subject to bear in mind the address of the publisher, M. AD. HOSTE, 47, Rue des Champs, Ghent.

CONSUL F. C. LEHMANN'S HERBARIUM.—The statement that the fine herbarium, formed during the last twelve years by Consul F. C. LEHMANN, chiefly in Colombia and Ecuador, is to find a home in the Botanical Department of the Natural History Section of the British Museum, will be, we are sure, pleasant news to British botanists and horticulturists. The specimens were collected at all altitudes, from the sea-level to the highest paramos, or regions of perpetual snow, and embrace a great variety of new and extremely rare species. Carefully-coloured sketches and notes taken on the spot where the plants were found enhance the value of the carefully-dried and arranged specimens. Mr. LEHMANN has done a great and lasting work for botanists in the regions he has explored, and the many new *Maedevalias* he has discovered will come as a revelation to those who thought all the beauty of the genus had been worked out. Unfortunately, his earlier work, like that of many other diligent men, is for the time buried in the Reichenbachian herbarium.

RETIREMENT OF ED. ORTGIES.—We are authorised to announce that M. ED. ORTGIES, who for the last thirty-eight years has so ably filled the post of Curator at the Botanic Gardens, Zurich, is about to retire into private life, and will yield up his office on April 1, 1894, a time when he will be within a month or so of the jubilee of his service in the horticultural world. From 1848 for some years Mr. ORTGIES served as a young gardener at Chatsworth and in some of the London nurseries, at which time he made a large circle of English friends, which his business relations and frequent visits to this country steadily widened. At home he was noted for the cleverness with which he managed the gardens, and for his urbanity towards visitors—especially those who came from the British Isles. On the Continent M. ORTGIES won many honours, and his connection with British horticulture is kept fresh by his being a foreign member of the Royal Horticultural Society. May he long enjoy the rest he has so well earned.

ISLINGTON CATTLE SHOW.—The annual show of the Smithfield Club in the Royal Agricultural Hall, Islington, was opened on Monday last, and extended over the four following days. As is usual upon this occasion there were great displays of agricultural produce by the leading seedsmen, and an even greater display by the sundriesmen of feeding-stuffs, insecticides, implements, &c. Noticeable among the seedsmen and nurserymen were the following, Messrs. E. B. WEBB & Co., Stourbridge, SUTTON & SONS, Reading, CARTER & Co., High Holborn, HARRISON & SONS, Leicester, all of which firms were well represented by large stands of Swedes, Mangels, Turnips, Potatos, and grains. Messrs. J. CHEAL & SONS, Crawley, GAYMER & SON, Norwich (cider and Apples), and Messrs. DICKSON & Co., Chester, exhibited Apples; Potatos were from Mr. C. FIDLER, Reading, and from Mr. A. FINDLAY, Markinch, N.B. Seeds also came from Messrs. JARMAN & Co., Chard, Somerset, from Mr. H. KING, Coggeshall, Essex, and from Mr. WALTER PARSONS, Reading.

PLANT PORTRAITS.

BILBERGIA HORRIDA, Regel, *Gartenflora*, Nov. 15.

BUDDLEIA COLVILLEI, *Revue Horticole*, November 16.

CARYOPTERIS MASTACHANTHUS, *Revue de l'Horticulture Belge*, December 1. (See *Gardeners' Chronicle*, 1884, vol. xxi., p. 149.)

CEROCARPUS PARVIFOLIUS, Nuttall. — Rosaceous shrub from Colorado. *Neubert's Deutsches Garten Magazin*, n. 20, 1893.

CLETHRA ARBorea VARIEGATA, *Revue de l'Horticulture Belge*, December.

THE BOTANICAL GARDENS AT BIRMINGHAM.

[SEE SUPPLEMENTARY ILLUSTRATION.]

SITUATED in the pleasant suburb of Edgbaston, this garden is of the utmost importance as a botanical centre for the largest and most prosperous of midland towns. It is a well-planned and picturesque garden in a pretty bit of country, dotted with handsome villa residences, and surrounded by well-preserved trees. These gardens were originally designed by the celebrated John Claudius Loudon, sometime in or about the year 1831, the land having been acquired in 1829, and I believe I am right in saying that David Cameron was its earliest curator. Cameron was in many ways an ideal curator, and a friend both of Knowles and Westcott, and also of the late Dr. T. T. Mackay, and



FIG. 111.—COCKSOMB VESICATUS: VERY RED, ON A YELLOW GROUND COLOUR. (SEE P. 715.)

the Edinburgh McNabs, with whom he kept up extensive exchanges and correspondence, and his name constantly recurs in the best horto-botanical literature of his time, viz., in Knowles and Westcott's *Floral Cabinet*, in Maund's *Botanist*, and also in the *Botanic Garden*, as well as in several other periodicals; while his writings, short, clear, and logical as they are, show him to have been deeply interested in the garden flora of his day.

Cameron was succeeded by Mr. Cattin, and then the charge was given Mr. W. B. Latham, out of many competitors, and in his hands the best interests of the Birmingham Botanical Gardens have prospered for a quarter of a century.

Concerning the laying-out of this garden by London, we have the following account in the preface to his posthumous work, entitled *Self-instruction for Young Gardeners*, p. xxxvi.

"In the beginning of the year 1831 (a short time after his marriage, and after the publication of the *Encyclopædia of Gardening*), he had an application to lay out a botanical garden at Birmingham, and he agreed to do it, merely on the payment of his expenses. On this occasion I (his wife) accompanied him; and after spending about six weeks in Birmingham (which, though it is my native town, I had not seen for years), we made a tour through the North of England, visiting the lakes in Cumberland and Westmoreland."

Soon after the establishment of the garden, i.e., from 1836 to 1840, Messrs. Knowles and Westcott

began a publication called *The Birmingham Botanic Garden, or Midland Floral Magazine*, "containing accurate delineations, with botanical and popular descriptions of plants;" and this was succeeded by *The Floral Cabinet and Magazine of Exotic Botany*, of which three volumes were published, illustrated with nearly 200 coloured plates and some wood engravings. In these two works there are to be found figures and descriptions of the many rare and interesting plants at that time cultivated in the gardens, and some of which are grown there to this day. A singular instance may be given. Thus, Knowles and Westcott illustrate what they call *Oncidium intermedium*, a species resembling, and apt to be confounded with *O. luridum*, from which, however, it differs in several important characters. Of this plant, Messrs. Veitch & Sons, in their *Manual of Orchidaceous Plants*, part viii., p. 58, speak as follows:—"The variety *intermedium* is the handsomest of all the *O. luridum* forms we have seen; it was first sent from Cuba in 1837 by a Spanish merchant of Havana, to Mr. George Barker, of Birmingham, but was subsequently lost; it has recently reappeared in cultivation, and is now in the collection of Baron Schroder, at The Dell." The above extract is substantially correct, if we except the statement of its ever having been lost, since Mr. Latham informs me that the plant has always existed in the Birmingham Botanic Garden, and is growing there still. *Symphoricarpus microphyllus* (syn. *S. montanus*), a very desirable shrub not often found in collections, is here to be found, the drawing in Maund's *The Botanist* is from this plant. *Leipophyllum buxifolium*, a pretty small-growing shrub, the plants of these here are very old, and there is little doubt have been here since the foundation of these gardens. *Galax aphylla*, this plant has been well established here for many years. I shall send Mr. Latham *Shortia*, which ought to do as well, since both *Galax* and *Shortia* have the same habitat in North America, and are not easy to distinguish as seen growing together. *Clethra densifolia*, *Zenobia speciosa*, *Buddleia globosa*, a plant seldom seen in this cold-winter neighbourhood, has proved quite hardy here, having withstood the frost for the last ten years. *Chamærops excelsa*, a fine plant, 35 feet high in conservatory, with a splendid head. *Camellia reticulata*, a large specimen of this showy species, and one of the largest plants in England, now that the historical old plants in the frame-yard at Chiswick is, alas, no more. *Brahea filamentosa*, good plants, and in rude health. *Gardenia Stanleyana*, with its long-tubed flowers; *Odontadenia speciosa* (syn. *Dipladenia Harrisii*), a beautiful stove climber. *Jatropha urens*, an Urticaceous plant for which Mr. Latham has great deference, as it once stung him very severely when at Kew. *Pritchardia grandis*, *Stevensonia grandifolia*, *Aristolochia gigas* var. *Sturtevantii*; *Musa ensata* has been flowering very freely. *Doryanthes Palmeri*, *Stauropeis liseochiloides* (syn. *Vanda Batemannii*), *Vanda Sanderiana*, *Brachnanthe Cathcartii*, *Artocarpus incisa*, "the Bread-fruit Tree," and *Ficus indica* also do well in this garden. The garden itself consists of about 12 acres, of gently undulating ground, and contains a good collection of hardy trees and shrubs. The curator's residence is flanked, indeed one might say surrounded by the well-filled plant houses and in front is a broad terrace-walk or promenade fringed by borders of hardy plants. Below the terrace is an expansive amphitheatre of velvety turf, varied here and there by well-grouped trees. I spent a lovely fresh spring day in the place late in April last, when the trees had donned their freshest verdure, and was especially struck by the bold and picturesque beauty of the tree masses as they loomed up in the mist of early morning. The thrushes and blackbirds were all in fullest and sweetest song. The nightingales used formerly to visit and enliven this paradise hortulan with their song; but they are said to have resented the introduction of musical promenades and bandmasters, and so fled to pastures new. An enormous Cherry tree at the extremity of the old archery meadow was like a wedding

bouquet or a great silver fountain, so thickly were its pendent branches clustered with showy blossoms. There is here also perhaps one of the finest groups of trees and shrubs belonging to the genus *Magnolia* existent in any British botanical garden. *M. acuminata* is especially noticeable as a tall tree, and *M. conspicua*, *M. Soulangeana*, and other forms of *M. Yulan* had their upturned branchlets tipped by exquisite vase-shaped flowers or glistening buds. Another rare old species with large and very fragrant flowers I was especially glad to see luxuriant and floriferous. This was *M. auriculata* of the *Botanical Magazine*, t. 1206, better known, perhaps, as *M. Fraseri* in gardens. It forms at Edgbaston a large spreading bush, 10 or 12 feet in height, or more, and as much in diameter, and as one stands at ten yards distance the erect buds and blossoms can with difficulty only be distinguished from the tender young foliage, the backs of the sepals and petals being of an Apple-green hue. When you have flowers and buds gathered, however, the delicate beauty of its noble flowers at once becomes apparent, the green segments being of a rich cream colour inside, and the green of the young foliage is then contrasted with the red brown stipules or auricles, that are such a distinct feature in this species. Although introduced from North America over a century ago, it is still anything but a common species in our gardens.

One great feature in London's practice as a landscape gardener, was the care he took to preserve any existing trees, and there are striking instances of his subtlety in this direction at Birmingham. At one corner of the garden there still exists, healthy and vigorous, and umbrageous, one at least of the far-famed Oak trees of Shakespeare's own fair county of Warwick. It is a pendent-branched form of *Quercus robur*, and has a splendid mile post-like bole or trunk fully 4 feet 6 inches in diameter. Quite near to this giant of the forest there is a Chinese *Wistaria* covering a run of 60 feet or more of a brick-wall, from which its "purple Laburnum" like flowers dangled in richest profusion. On the face of this wall, struggling for food and space above the *Wistaria*, are two quaint little Scots Fir trees, that have naturally sprung up there from chance or bird-sown seeds.

The Scots Fir trees on the old brick wall have been established there many years. An old gardener who has worked here forty-five years, told me that they were there when he came, and a good size then, but during the last twenty-five years they have made but little growth, although they are still in a healthy condition. Any one reading this little history and looking on these little Fir trees, may at once grasp the whole secret of the Japanese tree-dwarfing mania, viz., root-restriction, or want of full nutrition; indeed, their little gnarled and contorted trunks and branches remind one of the artificially-dwarfed little Conifers which for ages have been so popular in Japan.

The plant-houses, old and new, are mostly connected with an ample corridor in front, and are most conveniently adjacent (or otherwise!) to the residence of the Curator, and the reading and waiting-rooms of the subscribers and their friends, the revenue of the gardens being mainly derived from subscriptions, and from the floral exhibitions, &c., held periodically in the beautiful grounds.

The spacious corridors before alluded to, besides affording space for the smaller and more select shows, also lend themselves to luxuriant adornment by creeping and climbing plants overhead; and *Lapagerias*, both red and white, are here to be seen splendidly flowered during their wonted season. At the time of my visit, some fine specimens of Schertzer's *Anthurium* were gay with enormous red spathe, and one end of a stove or Fern-house was most attractive, as furnished by some very handsome plants of the great *Platyserium stemmaria*, which, as here grown, absolutely rivals *P. grande* in its magnificently bold drooping fronds. Never since I used to gaze admiringly at the enormous Stag-

horn Ferns clustering high up on the trees overhanging the rivers in Borneo and in Jahore, have I seen such noble plants of these *Platyseria*. Another noble Fern, of which there is here a unique example, is *Dicksonia Lathamii*, a hybrid reared here in the gardens. The various kinds of *Hoya*, including the great *H. imperialis*, *H. globosa*, and *H. australis*, and several of the night-blooming species of ascendant *Cereus*, grow overhead in the warmer greenhouses. I was also very pleased to see once again the dainty little tendril climbing Lily, *Gloriosa Planti*, and the peculiar little *Ficus diversifolia*, with terra-cotta tinted fruits clustered amongst its quaint and leathery leaves.

A stage full of named *Auriculas* was a treat to see, and Mr. Latham informs me that they are fully appreciated by many, even if not most, of the visitors to the gardens. *Hydrangeas* in pots are especially well grown here, from hard shoots rooted in July; and one of the specialties of the warm greenhouses in autumn or winter is the *Verbenaceous Callicarpa purpurea*, with its long branches laden with glossy lilac berries in axillary clusters. *Pentstemon rugosus*, a beautiful *Vaccinium* from northern India, was covered with its tiger-barred waxy bells here, and is a beautiful plant far too rarely seen.

Orchids are quite a special feature here, and there are many interesting species, both old and new. *Cattleyas* were showy, also *Cypripediums*, including Mr. Latham's beautiful hybrid, *C. Lathamianum* (= *C. Spicerianum* × *villosum*), *C. Lawrenceanum*, and many others. *Coelogyne cristata* is largely grown here, and in one little pit, mainly devoted to cool Orchids, I was glad to see a vigorous plant of the rare *Madevalla pulvinata* in bloom, and as healthy as if high up on its native Andean range.

In conclusion, I should like to impress upon all visitors to the metropolis of Midland England, the desirability of their paying a visit to the Edgbaston garden, feeling assured that it will at all times and seasons repay them well to do so. Birmingham itself has a horticultural history of the best, and one which but few other towns in England can hope to rival. The Pitmaston Nectarine, and the Pitmaston Duchess Pear, were raised here by Mr. Williams, of Pitmaston; and so were two of our very finest winter-blooming Heaths, viz., *Erica hyemalis* and *E. Wilmoreana*, the first-named being now more largely cultivated than perhaps any other species of *Erica*. The Birmingham horticulturists are very proud of their traditions, and speak with pride of Barker, Wilmore (raiser of the *Ericas* alluded to above), Pope, Plant, London, Knowles, and Westcott; Cameron, Catlin, and many others who held aloft their well-lighted torches in past days.

At the time of my visit not only did I hear of the past, but I saw much of present import, and there were suggestions for the future; and I heard whispers, "not loud but deep," about a projected new house for aquatic plants, and for a new rock and alpine garden, both as additions to the already abundant attractions of the Edgbaston gardens.

The Hon. Secretary of the Botanical and Horticultural Society of Birmingham, to whom these fine gardens belong, is Professor W. Hillhouse, of Mason College, a devoted botanist and horticulturist, who together with Mr. Latham (who has acted most efficiently and courteously as Curator for the past twenty-five years) is determined to advance the best interests of the gardens and of gardening at the same time, and it was a great pleasure to me to see such mutual scientific enthusiasm and practical skill given ungrudgingly in such a good cause. There is at Birmingham a large and influential Gardeners' Mutual Improvement Society, and I feel sure that its members will ever keep up the *esprit de corps* and best traditions of the district, which are indeed well worthy of being collected and preserved in some permanent form—perhaps some member may prepare a paper for one of their very interesting meetings. So numerous and valuable are these traditions and facts, that one cannot but hope that ere long some sympathetic editor may be found to do them justice. F. W. Burbidge.

BOOK NOTICE.

- (1.) AN ELEMENTARY TEXT-BOOK OF AGRICULTURAL BOTANY. By M. C. Potter, M.A., F.L.S. (Methuen & Co.)
- (2.) ÉLÉMENTS DE BOTANIQUE AGRICOLE. By E. Schribaux et J. Nanot. (Paris: Baillière, Rue Hautefeuille, 19)

The first is one of a host of books which the recent extension of technical education has called into existence. It is a brief summary of the more salient features in the anatomy and life-history of plants condensed from well-known text-books, fortunately by one who has an acquaintance with the subject. The author is very conscientious in acknowledging the sources of his information, and of the numerous illustrations which are diffused throughout his volume.

The account of the grasses is mainly taken from Hayward's *Botanist's Pocket book*, a very useful book for its purpose, but not designed to teach agricultural students the peculiar features of grass-structure, which most concern them. Mr. Potter would do well to study these points for himself, with the aid of what has been previously written about them in accessible books and memoirs, and incorporate them in his next edition.

The joint production of MM. Schribaux and Nanot, and covers the same ground as that occupied in the preceding book. It is more complete, though, owing to the language in which it is written, not so suitable to the English-reading student. To those to whom the language offers no difficulty we commend it, as containing within small compass an excellent account of those portions of structural and physiological botany which most concern the agricultural and horticultural student.

The section on herbicising excursions, and their utility in affording the means of acquiring a knowledge of agricultural botany, though short, is likely to be very serviceable. It leads naturally to the consideration of the larger subject of botanical geography, the economical aspects of which are also rendered obvious. An index and a full table of contents go to make up one of the best manuals of its kind that we have seen.

HOME CORRESPONDENCE.

SHANKING OF GRAPES.—The question raised recently in your leader, as to Grapes not shanking out-doors, goes off the beaten track, and suggests the best general explanation of the prevalence of shanking under glass in this country that has yet been offered. There are plenty of your readers who could tell you that shanking in its worst form often occurs in vineries under Grape-growers of repute, where every condition of successful culture is supposed to be fulfilled. In such instances there is usually only one point in which the treatment differs radically from the open-air conditions, and that is temperature and ventilation. In some of the worst cases of shanking I have ever seen—going on year after year, and which some of my old neighbours who have read the *Gardeners' Chronicle* as long as I have will recall—the night temperatures were on the highest scale, and excessive. Here, where the vineries were equipped to perfection regardless of expense, shanking was a nightmare to all concerned, for whole crops perished on strong young Vines, on heated, aerated, and drained borders alike, all on a dry gravelly subsoil, in light loam, and borders not exceeding 2 feet 9 inches in depth; and plenty of similar instances could be recorded. I have often wondered if shanking was at all troublesome in outdoor vineyards, because we never hear of the disease under such circumstances, and if it did exist, it would be a serious matter both as regards the crop and the quality of the wine produced. No doubt excessive cropping contributes to shanking under glass, but the same weight of crop out-doors does not seem to cause it. Here is a note made on the spot by myself some years back, on the Vines that produce the dessert Grapes on the walls at Thomery, south of Paris;—"Vines 16 to 18 inches asunder,

not very robust; two shoots generally from each spur, not far apart; at least one bunch to every shoot, and very often two; crops heavy." This is a fair sample of the practice there for a long period, where shanking is, I believe, practically unknown. I saw none, and the only troubles of the growers seems to be late frosts and occasional mildew. The sort generally grown is Royal Muscadine, but all the sorts were equally free from shanking. Now, this is an early Grape, and in our vineries in this country it is expected to ripen in between four or five months, and the Black Hamburgh a little later. According to the late Robt. Thompson, the Thomery Grape-growers produce "as many as 320 bunches on a surface little more than 8 feet square." If you take this figure, or the three to four bunches from each spur on close-jointed and close-planted rods, I would like to hear where it has been matched anywhere in this country. The only difference between the vineyard growers and English growers under glass is one of time and night temperature. The Muscadine buds begin to swell in February, and the Grapes are never ripe till September and later; and as regards night temperature, sheets are required to exclude frost till the vines are well advanced—a sufficient commentary of the teachings of those who still stick out for an exhaustive temperature of from 65° to 75° for Vines coming into flower. I think if there be anything certain in Grape culture, it is that giving the Vines plenty of time from beginning to end, ample ventilation, and moderate or low temperatures at night are the surest means of securing well-finished Grapes. Shanking and bad colour are always associated, and seem to arise from the same cause. Colour spreads slowly over a bunch of Grapes, beginning, as a rule, near the foot-stalk, and gradually extending to the point of the bunch. Time is necessary for this process, and if it is not afforded, the point of the bunch of black Grapes remains red, and probably shanks, just as if the something needed to finish had not had time or power to reach the extremities. I think "shanking" a wrong name for the disease. Shrivelling of the foot-stalk of the berry is a symptom, but it does not account for what a few days before was a solid-fleshed berry, changing into a blob of sour water, in taste extremely nasty, and quite unlike sour Grapes when swelling. A decided and often sudden chemical change, quite destroying the tissue, takes place, and such as does not take place if you gradually destroy the foot-stalk by artificial means, in which case the berry shrivels only. Shanking always begins with the second swelling, and is always worst between then and maturity. A distinct check to the growth of wood-laterals is also always apparent at this stage, showing that the Vine's strength has begun to be seriously taxed; indeed, I doubt if the green berries, before the stoning period, have any exhausting effect on the Vines at all. They seem to perform a function similar to that of the leaves; [identical] but that is a question for the physiologists. J. S. W.

I read the article on p. 624 on the above subject, and agree with the writer in hoping that gardeners may be induced to leave the beaten track, sure I am of the opinion, that if borders were properly made, and watering well attended to, shanking would be a thing of the past. Some fifteen years ago I took charge of some vineries where the Grapes shanked every year, and one house of young Vines was as bad as the rest; but after I had replanted these Vines, shanking was not seen, nor would it occur if directions which I gave were followed up. An examination of these borders showed that they were 5 feet 9 inches deep at the front, and the soil contained plenty of bones and farmyard manure. What wonder that shanking occurred? the borders were like a bog—spongy; and for a man to have walked over them would have been an unpardonable offence. I had these great excavations filled to a depth of 3½ feet with solid material, leaving the depth of the border at the back or path, 2 feet; and at the front, 2½ feet; and a 3-inch drain-pipe laid in lines 4 feet apart. The materials are made firm by ramming, and over this a layer of concrete, 6 inches thick was laid, and then filled in between with half-bricks, everyone laid by hand; then over these came a layer of broken bricks passed through a 2½-inch mesh, and then through a 1-inch one, and finally through a ½-inch sieve, to take out the dust. Over the broken brick came good turves, grass side downwards. Materials for the border consisted of good turf roughly chopped, a few 1½ inch bones, and a little bone-meal, charcoal, lime and brick, passed through 1½ inch screener, and rammed in as solid as men could make it with a rammer. The results were good canes the first

year, three bunches on each cane the second year, and the third year Muscat of Alexandria Vines had bunches 7 to 11 lb. weight; Black Barbarossa, 13 lb. 12 oz., and all of them perfectly finished. In the other house I had a like result. I have kept Lady Downe's Seedling till June, Gros Colmar till April, and Black Alicante till nearly the end of March. I never put manure amongst the materials of which a Vine border is made, and I should always have it trodden as firmly as possible when dry, and the surface gently pricked over before affording water, which should never be in dribble; in fact, a well-drained shallow border cannot have too much at a time, and when once watered, no water should be applied till it is required. My Vines are planted inside at the front of the house, their roots extending into the outside border between the piers which support the front wall, and from the Vines the surface of the soil slopes both ways. Shirkburn.

ALLOTMENTS (see p. 688).—There is every reason to suppose that the number of allotments now in existence is at least 150 000 more than the number in existence at the time that the Allotments Act of 1887 was passed. This can scarcely be called "relatively few." J. L. Green, *Secretary, Rural Labourers' League*.

ODONTOGLOSSUM CRISPUM VAR. STEVENSII.—In my reference to this plant at p. 684 of last issue, I, in my ignorance, stated that the plant was named in compliment to Mr. Stevens, of Walton Grange. I have been informed by that gentleman that the honour is not his, but belongs to Zadok Stevens, who was many years gardener at Trentham. *Viator*.

HORTICULTURAL PROGRESS.—When Mr. Watson tells us that "Orchid culture, and, indeed, indoor gardening generally, has been much advanced within the last fifteen years in consequence of improved methods, &c.," we are led to inquire into the nature of the "advance" that has been made. That good culture has been wonderfully and widely diffused during the epoch named I willingly admit, but the actual cultural advance of any section of indoor gardening is but slight, if any, if we except the new plants and new varieties introduced. In a word, importations have advanced; and hybridism, cross-breeding, and selection have advanced, but that Orchids, or Grapes, or Ferns, or vegetables, or trees and shrubs are better grown to-day than they were fifteen, or even fifty years ago, I very much doubt. There are plants now popular that were not fashionable twenty or thirty years ago, Palms and Bamboos, for example; but Palms, even, are not better grown to-day than they were by the best cultivators twenty years ago—but I admit that thousands of Palms are now well-grown for one well-grown long ago. What culture could be finer than that of hard-wooded greenhouse plants twenty or thirty years ago? Where are now the splendidly-cultivated stove plants, the numerous kinds of *Ericas*, the succulent plants, the *Geraniums* or *Pelargoniums*, and especially the East Indian Orchids, the specimen *Vandas*, *Aërides*, *Saccolabiums*, and *Phalænopsis* of from fifteen to fifty years ago? All these plants exist in our gardens by the thousand now, perhaps, for the units of the time named, but there are no such well-grown individual specimens as used to appear at the flower shows from 1830 to 1870. I freely admit that the general diffusion of good culture and of good plants is enormous during the past fifteen years, but, with few exceptions, there has been no general advance *per se* in the best methods of culture itself. There have been changes of fashion, and diffusion of tastes and requirements in all directions, a run on South American Orchids, such as *Cattleyas*, *Lælias*, *Odontoglossums*, &c., instead of one on *Vandas*, *Aërides*, *Phalænopsis*, and *Saccolabiums*, that is all. In a word, what we have gained in one direction we have but too often lost in another; it has not been by any means a steady advance along the line. Of course, Mr. Watson deserves our best thanks in defending the British gardener from Mr. Linden's ill-considered remarks. It is all very well to single out one or two places in Belgium where certain phases of culture may equal or even surpass those in England, but I very much question whether the facts are not far more often the other way. Certainly, no Orchid nursery I ever saw on the continent in any way equals that of some to be seen nearer home, and no private collection comes near to that of Baron Schroder in careful selection and good culture. Even in Grape culture, continental cultivators had to yield the palm to Mr. Meredith, who electrified them with the splendid Grapes he took over to their exhibitions from the vineyards at Garston, near Liverpool. It

is quite likely that in Pear culture the French and Belgians may surpass us, thanks to their higher summer mean temperature and superior amount of sunlight, but even of that I am not fully assured. I believe we might learn from the French and Belgians in their thriftiness, i.e., in the art of utilising their often limited resources in the most profitable manner. Again, in preparing and in marketing their produce, be it fruits and vegetables, or plants and cut flowers, the small growers in France and Belgium are far ahead of our own. Nothing strikes one more in continental tours than the clean, fresh, and dainty neatness with which the humblest of cultivators invest their wares. As Mr. Watson suggests, it is but seldom if ever wise to adopt even the most successful of methods *in toto*. We may now and then improve our own methods by assimilating and adapting by taking a hint, as it were, rather than by abandoning our own and adopting some one else's method. All real progress or advancement is slow, and in gardening this is especially so, seeing that its prime factors, light, heat, and moisture form a shifting index every season, nay, almost every day in the year. F. W. B.

LATE SCARLET-RUNNER BEANS.—At the exhibition of the Isle of Sheppey Chrysanthemum Society at Sheerness on the 16th ult., a capital dish of Scarlet Runners, gathered in the open air, was seen in a collection of six dishes of vegetables. That fact appears to me to almost establish a record. The Isle of Sheppey, in common with many other seaside places, enjoys a comparative immunity from frost, and so crops of Scarlet Runners were only slightly touched on this south-eastern shore; whereas, in other places farther away from this sea there was an almost entire destruction of any out-door plant of a tender character. That Scarlet Runners have been late and good generally is one of the characteristics of this season. Plants stunted in growth while the drought prevailed, awoke to a new life when the rain came, and then making a free growth, blossomed and bore fruit at a much later period of the year than is usual. It may be mentioned, that the practice followed by some gardeners of the old school of keeping roots of Scarlet Runners through the winter to plant in spring, on the ground that they obtained an earlier crop, seems to have quite died out among the community. R. D.

A BRASSICA SHOW.—A very odd notion is that which prevails at Limsfield, Surrey, of holding an exhibition of the Brassica family. The competition is promoted and conducted by the local Gardeners' Association, and seems to be chiefly restricted to the holders of parish allotments, where, it would appear, arising from the competition, most of the members of the Brassica tribe are well done. Classes are arranged for heads of Savoy, red, and other Cabbages, stems of Brussels Sprouts, heads of Kale, &c., and it is not difficult to have a very interesting though it may not be a very large exhibition. It was an admirable idea to offer the prizes to allotment holders, as in that way great encouragement is given them to produce good samples, and at the same time the competition is fixed at a time of the year when all descriptions of Brassica of a hardy nature may be had at their best. The prizes are small, but they suffice to make a very good competition. The show of the present winter took place on December 1, just in time to escape the very sharp frosts which immediately followed. The autumn was one of the most favourable for Cabbage production, with all its allies. Everywhere, whether in market fields or allotments, or in private gardens, the wealth of green produce is almost remarkable. Even till the recent sharp frosts, Autumn Giant Cauliflowers have been fairly abundant. There was at one time some dread lest the growth would prove to be so rapid as to be of a tender nature, and thus soon become harmed by frost. That fear does not now exist, as all forms of Brassica, exclusive of the late Cauliflowers, seem to be well seasoned. There can be no question but that, let the summer crops have been what they may, every effort was made to obtain a winter abundance with great success; that has specially proved to be so in cottage gardens and allotments, and it would naturally be looked for in other gardens. A. D.

PINUS INSIGNIS.—Within a hundred yards to the south-west of my house, in Longford Park, there grows the largest specimen of *Pinus insignis* which I know of, and next in size to the one at Bowood, North Wilts. The Longford specimen was, I have been informed on good authority, transplanted out

of a 6 inch pot into its present position on April 23, 1845. The tree is furnished with healthy branches from the ground upwards, and its dimensions are as follows: height 60 feet, diameter of branches 55 feet, circumference of trunk at 1 foot from the ground 15½ feet. Between this point and 7 feet from the ground are eleven large branches or arms. These measure respectively in circumference, 5 feet, 6 feet, 3 feet 9 inches, 5½ feet, 3½ feet, 4½ feet, 5 feet 9 inches, 4½ feet, 4 feet 3 inches, 5½ feet, and 4 feet 3 inches. The girth of the main upright stem at 7 feet from the ground is 9½ feet. The soil in which the tree is growing, and which evidently suits its requirements in every way, is a yellow loam, about 2 feet in depth, and resting on a gravelly subsoil within 7 feet of the ordinary level of the water of the River Avon. It would be interesting to know if there are any finer trees of this *Pinus* in the United Kingdom, and, if so, where. *H. W. Ward.*

HOW CHRYSANTHEMUM EXHIBITIONS MIGHT BE IMPROVED.—All true lovers of Chrysanthemums must, I should think, hail with satisfaction the notes by Mr. Douglas on p. 684. On visiting an exhibition how often one hears the remark, "What a mass of colour!" and true enough it is; especially in the groups. In my opinion a great improvement might be made in arranging if something was done to take away that stiff and uniform appearance so prevalent at the present time. Instead of being so densely packed, as they are, with huge flowers, how much better the effect would be if they were not so close, and if fine foliage plants used to tone down the body of colour. It seems a pity also that Pompons should be discarded, as they are, from the groups in many cases, for all must admit that a well-grown Pompon is quite as pretty as a huge-flowered Japanese, of which the groups generally consist. I have heard the subject argued a good many times at our local exhibitions in Essex, but without any good result. I thoroughly believe that if one of the larger societies, the National, for instance, would once give it a trial, it would very soon find favour with the majority of exhibitors. For it seems to me that if something be not done to add to the popularity of this fine autumnal flower, in some places the societies will gradually die out of existence. *F. Everitt, The Gardens, Tythous, Ingatesstone, Essex.*

BOUGAINVILLEA GLABRA FLOWERING OUT-OF-DOORS.—It may be interesting to readers of the *Gardeners' Chronicle* to know that the above plant flowered well out-of-doors at this place during the past autumn, and I noticed to-day, November 27, two bright flowers still on the plant. It is growing against a south wall and well sheltered, was planted in April of the present year, and at that time was nearly destitute of foliage. Having been kept dry for some time previously to planting it, but with assistance from weak liquid manure, it grew rapidly, and by June had made strong growths right and left, which, aided by the heat of an almost tropical summer, pushed forth several flowers. The longest growth made from the time of planting measures 6 feet, and at present the plant is well covered with its dark green foliage, although we have registered 5° of frost, spoiling out-of-door Chrysanthemums. With a due amount of covering up at night, this handsome climber will succeed in the milder parts of this country, especially if a warm site be chosen for it, and the drainage of the soil is good. The plant here bids fair to pass the winter unhurt. From experience gained on the Riviera, where Bougainvilleas luxuriate, nothing seems to cut them up so much as cold winds accompanied with a few degrees of frost. I have seen large specimens, covering the fronts of villas of two and three stories high, browned in nearly every leaf with the cold mistral winds. But the wealth of bloom to be seen in the early spring months must be seen to be fully realised. *J. Benhow, Alhottbury Castle Gardens, Dorsetshire.*

THE ROYAL HORTICULTURAL SOCIETY.—Your note respecting the possible return of the Society to South Kensington naturally created some alarm in the minds of Fellows, and especially of those who remember the disastrous days associated with that unhappy locality. It may be that the Scottish Drill Hall is far from being all that can be desired; all the same, it is just now becoming more and more popular both with Fellows, exhibitors, and the public. We could never hope to see at South Kensington such shows as have of late been found at the Drill Hall; shows, it is but just to say, which have never been excelled in the Society's

history. The voice of objectors to the Drill Hall is now dumb, we no more hear it termed an ash-pit; indeed, it would be very difficult to find on the whole a place in London more roomy, more accessible, and more quiet. We have all got to know where the Hall is, how most easily to reach it, where to find what South Kensington does not afford,—ample outside refreshment accommodation, and it enables anyone to transact business in London before or after the usual meetings with facility. Just now, too, the public are getting to know the Hall; and if next spring the Council would but help to make the meetings more widely known, the attendance would be much larger. At South Kensington it would be found needful to promote smoking concerts and variety shows to attract attendances; now the meetings are dependent upon their intrinsic merits, and it is by far the best they should be so. We want no Merry-Andrew displays associated with our Royal Horticultural Society's meetings. Let the Council remember the old adage, "A rolling stone gathers no moss;" and it is just beginning to collect a little of the useful substance now. I cannot but think if the question of removal back to South Kensington were submitted to the next general meeting of Fellows, it would be negated by an overwhelming majority. *A Fellow.*

SUTTON COLDFIELD.—To many persons, Sutton Coldfield may not be familiar, but it is a charming locality not far from Birmingham, and was a noted place so far back as the fifteenth century, when it formed a portion of the great hunting grounds of royalty connected with the well-known Cannock Chase, lying betwixt Sutton and Rugeley, a district now very much sacred to coals, for it is a great coal district. Sutton possesses a park and woods, consisting of about 1800 acres, which is exclusively the open property of the inhabitants of Sutton, but under the charge of the Corporation; this is a great resort of the Birmingham people in the summer time, and has always been famous for many of the rarer British plants, some of which are now scarce there, whilst others have almost, if not quite, disappeared. The Sun Dews, *Drosera rotundifolia*, and others were abundant there a few years since, and one species still grows there, but *D. longifolia* has become almost extinct. *Pinguicula vulgaris*, the common Butterwort; also *P. lusitanica*, the pale Butterwort; *Orchis mascula*, the great purple Orchis; and *O. maculata*, the spotted Orchis; *Alisma plantago*, the great Water Plantain; *Ranunculus lingua*, the great Spearwort; *Typha angustifolia*, the lesser Reed Maw; *Rosa luteola*, the wild Mignonette; *Solidago Virgaurea*, the common Golden Rod; and *Linaria vulgaris*, the common Toad Flax, are all to be found here; and *Parnassia palustris*, the grass of Parnassus, is plentiful; *Blechnum Spicant*, a very familiar hardy Fern, was formerly tolerably plentiful in the woods, and was supposed to have become extinct, but was found again this year. The Club Moss, *Lycopodium clavatum*; *Ranunculus Lenormandi*, *Pyrus aria*, White Beam; *Saxifraga granulata*, the Meadow Saxifrage; *Vaccinium oxycoccus*, the Cranberry; *Vaccinium Vitis Idæa*; and *Orchis latifolia*, the Marsh Orchid, are all amongst the denizens of Sutton Park and woods. *W. D.* [An account of a Chrysanthemum fruit and vegetable show at this town will be found on another page. *Ed.*]

SOCIETIES.

ROYAL HORTICULTURAL.

Lecture on Late-keeping Grapes.

NOVEMBER 28.—In the afternoon a paper on the above subject by Mr. T. Crasp, Clyde Valley Nurseries, Swansea, was read by the Secretary. In commencing his paper, Mr. Crasp stated that hundreds of tons of Grapes were now grown in Britain for the market. The value of the fruit for such purpose materially depended upon the length of season during which the fruit could be had. It was better to grow late-keeping Grapes, than to force exceptionally early for the supply in spring. To insure a supply of late Grapes it was not sufficient that late varieties be planted, but the best of culture must be given them to the end that the fruit be thoroughly matured in every way. Mr. Crasp said, in speaking of soils, there were but few places where the soil was just what the Vines required—and where it was only necessary to dig it about a couple of spits deep, as a preparation, and the natural drainage was sufficient. Where fresh soil has to be

obtained, it should consist of substantial loam that will last some time, avoiding, however, a heavy or adhesive soil. It was better to buy, even at a little trouble or expense, some good sound turfy loam—that will be sure to suit the Vines. Care should always be taken to ensure a fair quantity of lime in the soil, as this was imperative to the stoning of the fruits. The lecturer then said that the idea that it was impossible to feed Vines too liberally was now quite exploded, and in making a new border the best growers were now content to add a moderate quantity of crushed bones. Afterwards, if the Vines showed any weakness, a well-decomposed manure could be given, and, during the fruiting season, they would enjoy frequent applications of liquid manure. The depth of border recommended by Mr. Crasp was 2 feet minimum and 3 feet maximum. The site was important, and should not be low, damp, and impossible of draining, but of reverse conditions entirely.

In choosing canes, whether those raised by the planter, or bought from the nursery, the lecturer advised free-grown canes, that were not stunted, nor extra luxuriant in growth. The distance of the wires from the roof should be sufficient to allow ample room for foliage, &c. The distance between the plants should never be less than 2 feet, and Muscats required quite double the space allowed others. The fruit ought not to be kept hanging too long, as late Vines were often rested insufficiently. As a rule, they should not be allowed to hang after January. During the time the Vines were resting, care should be taken that the borders do not become too dry, for whilst too much water at this time was prejudicial, greater harm would result from the soil becoming dust-dry. Outside borders might be covered to prevent saturation from snow, but as far as could be allowed with safety, they would be the better for exposure. Where the Vine-roots are inside and outside, the border should be kept at nearly the same temperature as practicable. Late-keeping Grapes required a long time to grow, and should be started as early as is possible without excitement. March or early April was the best time. A temperature of 50° to 55° at night would be easily kept, and was sufficient.

Diebudding and stopping ought to be assiduously attended to, and only a requisite amount of foliage retained. A small quantity of well-developed and matured foliage was better than a larger quantity which had not room to become so. White Grapes—especially Muscats—would require more exposure to light than black ones.

In speaking of the flowering and setting period, Mr. Crasp referred to Muscats and others that produced sufficient pollen for their own fertilising, and remarked that shaking of the rods, or the use of a soft brush kept for the purpose would be sufficient. Alnwick Seedling and such-like varieties, on the other hand, would require pollen taken from another variety, which could be easily done with a soft brush.

Thinning was another important point in producing Grapes for keeping long, and each variety must be thinned with due regard to its habit, and the ultimate size of its berries. Where bunches were produced too freely, some of these should be removed. Overcropping would not pay the private grower, although it was practised a good deal with market growers on strong, young Vines with but little injury. The temperature during the summer was a question for the growers' judgment, and the hard-and-fast rules that once obtained were unnecessary. It might consist of an increase of 5° until the flowering stage, and of another 5° after that time. The highest temperature to be allowed either during the morning with air, or when closed in the afternoon, might be about 90° or a little more.

Spacious span-roofed houses were best in most localities, but in some damp cold situations lean-to structures were necessary to thorough ripening. The application of water was a matter of the greatest moment, and required much judgment. It might be safe to give Vines about 18 gallons per square yard each month during the summer. Cold liquid should be avoided, or a check would result. Damping and syringing were next alluded to, Mr. Crasp remarking that whilst some growers discarded the syringe altogether, others used it with but very little intermission. If damping was always and thoroughly attended to, it might obviate the use of the syringe altogether. Proper ventilation was of the highest importance. Care should be taken to ventilate early enough in the day, putting a little air on as soon as the sun was felt in the least, and afterwards gradually increasing the amount.

Directions for the proper management of the fruit-room were now given, and a temperature of 45° advised, with no stagnant moisture in the place. After the Grapes were bottled, they might be occasionally looked over to refill the bottles with water, and at such times the end of the stem should be cut off. Mr. Crisp then gave the names of several varieties suitable for late keeping, together with short descriptions and directions for culture. Mentioned were Lady Downes' Seedling, Gros Colmar, Black Alicante, Mrs. Pince, Alnwick Seedling, Gros Guillaume or Barbarossa, West's St. Peter, Black Maroc, Muscat of Alexandria, White Tokay, and Trebbiano.

NATIONAL CHRYSANTHEMUM.

General Committee.

NOVEMBER 20.—A meeting of the General Committee took place at Anderson's Hotel, Fleet Street, E.C., on the above date, R. Ballantine, Esq., in the chair, there being, as usual, a good attendance. A letter was read from Mr. John Smith, nurseryman, Windsor, complaining that none of the special prizes offered by Messrs. Pitcher & Manda for seedling Chrysanthemums at the November show were awarded. The secretary stated the judges made a report, setting forth that not one of the three exhibits staged was considered worthy of an Award. The Awards by the Arbitration Committee at the November show of several Medals to miscellaneous collections was confirmed. The secretary submitted a financial statement, showing that up to the 18th inst., the sum of £525 11s. 8d. had been received, of which amount £142 19s. 6d. was on account of annual subscriptions, and £39 7s. on account of affiliation fees; the sum of £219 10s. had been received from the Royal Aquarium Company. Several letters were read making suggestions as to alterations in the schedule of prizes, and also some proposed by members of the Committee, were referred to the Schedule Sub-committee. Twenty-four new members were elected, including one Fellow, the secretary reporting that 159 candidates for membership had been elected during the year, viz., 137 ordinary and 13 Fellows, and nine societies had been admitted to affiliation. At the close of the business, Mr. A. E. Shea should have read a paper on "Judging Chrysanthemums," but, owing to an attack of illness, he was prevented from attending, but sent his paper requesting it might be read for him. As the subject is an important one, and the points laid down by Mr. Shea are likely to cause discussion, it was unanimously resolved that the reading of the paper be postponed until such time as Mr. Shea could make it convenient to attend another meeting of the committee. A Vote of Thanks was passed to the chairman for presiding.

NOVEMBER 22.—A fully-attended meeting of the Floral Committee was held at the Royal Aquarium on the above date, a considerable number of new varieties being staged, and a good deal of interest was excited, especially over a large number of fine seedling Japanese from M. Ernest Calvat, Grenoble, France.

First-class Certificates of Merit were awarded to incurved William Tunnington, a fine variety in the way of Baron Hirsch, the surface of the petals amaranth, with a golden reverse; to Mrs. T. Denne, a very fine incurved Japanese, in the way of Stanstead Surprise, and of much the same colour, deep and full; to Japanese Le Prince du Bois, a large deep pale bronzy-yellow reflexed variety, of great beauty; and to Japanese Golden Gate, a remarkably fine variety, reflexed, and of a deep golden-yellow colour.

A bloom of Japanese Richard Dean was seen in better character than when shown before by Mr. Owen, and, had there been a companion flower, it would assuredly have obtained a First-class Certificate of Merit. Altogether Mr. Owen had a remarkably interesting collection of twenty English-raised seedlings, incurved, Anemone-flowered, and Japanese, and a Silver Medal was awarded.

Of M. E. Calvat's French seedlings, a collection of sixteen having been sent from Grenoble, First-class Certificates were awarded to Madame Carnot, a large white broad-petalled reflexed Japanese of high quality; to Deuil de Jules Ferry, a broad-petalled bright cerise-crimson flower, with a silvery reverse; and to Professor Lackman, a large incurved Japanese, amaranth, with silvery reverse. A Silver Medal was also awarded to this collection.

A First-class Certificate was awarded to Japanese Cecil Wray, a large golden bloom, shown by Mr.

E. Beckett, The Gardens, Aldenham House, Elstree. The following Commendations were awarded: to Japanese President W. R. Smith, a fine incurved flower, delicate pink, with a pale silvery reverse; Niveus, a large broad-petalled white reflexed Japanese; E. L. Jamieson, also an incurved Japanese, chestnut-crimson, with bright bronzy-yellow reverse; and Pompon Elsie Walker, a remarkably free and compact bronzy-orange variety, in the way of Frémey; all the foregoing were shown by Mr. R. Owen, nurseryman, Maidenhead.

A pretty reflexed Pompon, named William Kendall rose tipped, and margined with white, from Mr. J. P. Kendall, Roehampton, was Commended; also Japanese President Léon Say, a pale-coloured type of Edwin Molyneux, but decidedly pretty in colour, from M. E. Calvat, was also Commended; as was also a very promising incurved, named M. P. Martinac, pale yellow, in the way of Miss M. A. Haggas.

In the way of single varieties, Mr. W. Wells, nurseryman, Earlswood, Redhill, had a collection of several varieties; one, an American variety, a Japanese, with very deep bright red flowers, named Taxedo, is recommended for late-blooming, for decorative purposes, and the Committee wished to see a plant at a later meeting; Purity, a large broad-petalled white variety, appears likely to be very useful for cutting.

Several stands of Japanese and other varieties were shown by Messrs. Henry Cannell & Sons, nurserymen, Swanley, and a Bronze Medal was awarded.

A Vote of Thanks was awarded to Mr. R. Sindrey, Pentwyn, Monmouth, for Patty Harding, an incurved Japanese.

DECEMBER 5, 6, 7.—The mid exhibition held in the Royal Aquarium, Westminster, on the above dates, was quite exceptional, whether considered in regard to the quantity of blooms, or to the quality of those staged. In most of the classes there were numerous competitors, almost equal in number to that held a month ago, and extra prizes were awarded in most of the classes. The quality of blooms also was most satisfactory, especially in the case of the Japanese varieties. The incurved were smaller, and not nearly so exceptional.

In the first class, for twenty-four Japanese blooms of not fewer than eighteen varieties, the 1st place was taken by Mr. E. Rowbottom, gr. to H. R. Williams, Esq., The Priory, Horsey, N., and the blooms were the best ever staged at the same date. Particularly noticeable were Etoile de Lyon, Madame Thérèse Rey, G. C. Schwabe, Beauty of Castlewood, and J. S. Dibben; 2nd, Mr. W. Collins, gr. to J. W. Carlile, Esq., Ponsbourne Park, Hertford; 3rd, Mr. Henry Alderman, gr. to G. Hatfield, Esq., Morden Hall, Surrey.

Mr. C. J. Waite, gr., Glenhurst, Esher, Surrey, was well ahead in the class for twenty-four bunches of Chrysanthemum blooms, any varieties, staging capital blooms of similar varieties to those seen on the boards. Mr. E. W. Knowles, gr. to Mrs. Chas. Egerton, Solna, Roehampton, was 2nd, in this class including several nice singles; and Mr. Geo. E. Smith, Floral Cottage, Paul, Hull, 3rd.

Mr. E. W. Knowles was 1st for twelve bunches of Japanese blooms, of not fewer than six varieties, and one variety only in a bunch; Mr. W. Tipler, gr. to Miss Smith-Dorrien, Hartwell Villa, Aylesbury, was 2nd.

Twelve Japanese flowers were beat from Mr. T. Turk, gr. to P. Bosanquet, Esq., Penfield, Hertford; the stand contained a very fine even lot of fresh-looking specimens. 2nd, Mr. W. G. Gilbert, gr. to B. C. Neve Foster, Esq., Lennowe Hall, Norfolk; Mr. E. Rowbottom was 3rd.

Mr. C. Cox, gr. to J. Trotter, Esq., The Grange, Brickenden, was 1st for six similar blooms, having Beauty of Castlewood, very large; and a nice bloom of Robert Owen. 2nd, Mr. W. Collins; and 3rd, Mr. H. Shoesmith, gr. to M. Hodgson, Esq., Shirley, Croydon. There were two extra prizes awarded to competitors in this class.

Messrs. W. and G. Drover, Fareham, Hants, staged the best twelve blooms of incurved, but though even, they were small and not well-coloured; 2nd, Mr. W. G. Gilbert, and Mr. H. Alderman 3rd. The latter exhibitor, however, was 1st for six blooms, and the winners in the last class were 3rd; Mr. H. Shoesmith was 2nd. Mr. Shoesmith had also the best twelve blooms of Princess Teck; Mr. Gilbert 2nd, and Mr. Geo. E. Smith 3rd.

Mr. A. Newell, gr. to Sir Edwin Saunders, Fairlawn, Wimbledon, was 1st for six bunches of Japanese blooms; Mr. E. W. Knowles 2nd, and Mr.

D. B. Crane, 4, Woodview Terrace, Archway Road, Highgate, 3rd.

Miss Debenham, St. Peters, St. Albans, had a very attractive stand in the class for twelve bunches of singles, three sprays in a bunch: Admiral Symonds, a large and fine yellow, was specially noticeable; Mr. W. C. Pagram, gr. to F. Hobhouse, Esq., The Whim, Weybridge, was 2nd, and Mr. G. E. Smith 3rd.

Mr. Thos. Lansley, 155, Pinner Road, Watford, was successful for six Japanese blooms (amateurs), and staged very satisfactorily; Mr. Ed. Spurge, Witham, Essex, 2nd; and Mr. F. Hicks, High Street, Elstree, 3rd.

The best half vase or epergne of Chrysanthemum blooms, open only to amateurs, was from Mr. D. B. Crane.

Mr. E. Rowbottom was successful in the class for six blooms of any new varieties of 1892 and 1893, the Silver Medal given by Mr. H. J. Jones, Hither Green, Lewisham.

The miscellaneous classes were almost without entries, and the three classes for Primulas were quite so. A few good plants of Cyclamens from Mr. W. Cook, gr. to the Hon. Sir Chas. Murray, The Grange, Old Windsor, were the only ones staged. The class arranged for a collection of flowering, berried, and foliage plants, arranged for effect on a table space of 9 feet by 6 feet, secured two exhibitors, the most successful being Mr. W. Howe, gr. to Henry Tate, Esq., Park Hill, Streatham, who had a lightly-arranged collection, including Crotons, Ferns, Solanums, Poinsettias, Callas, Calanthes, &c.; Mr. A. Newell, who was 2nd, had some good plants, but they were too thickly placed.

Miscellaneous Exhibits were numerous and novel. The method of exhibiting Chrysanthemums by nurserymen appears just now to be in a transition state, and it is pleasant to notice a general departure from the too stereotyped manner that had appeared almost without any variety.

Messrs. H. Cannell & Sons, Swanley, had Chrysanthemum blooms on boards, and also arranged in sprays, together with a bright display of Pelargonium blooms. Also an expanding show-board, for which a patent has been applied.

Mr. W. Wells (Earlswood Nurseries, Limited), Redhill, had a grand display of Chrysanthemum blooms arranged in a bank some 9 feet high, with an arch in the centre, in which a mirror had been placed.

Mr. Robt. Owen, Floral Nursery, Maidenhead, had good blooms arranged in bottles, three blooms in each, which were inserted into a ground-work of Ferns on a table, and looked very pretty.

Mr. H. J. Jones, Ryecroft Nursery, Hither Green, Lewisham, had a large and fine stand arranged in a manner somewhat resembling that at the show a month ago. Large handsome vases were tastefully arranged with bloom a good length, and the vases placed on a groundwork of Ferns. Each vase, taken separately, looked handsome; but the Ferns should have been a little higher, that the vases (although handsome) might have been less prominent. Mr. Norman Davies, Camberwell, had a table arranged with Chrysanthemums; and Mr. Geo. Stevens, Putney, had a very pretty table, being similar to that noticed from Mr. Robt. Owen. Mr. H. R. Williams, Horsey, N., had a table arranged with Chrysanthemum blooms in bottles, plants of Primula sinensis, small Salvias, Cinerarias, Ferns, &c., which looked exceedingly tasteful; and a handsome and attractive appearance was that made by the stand of Mr. Henry Perkins, Greenlands, Henley-on-Thames, containing a good number of finely-flowered Amaryllis, interspersed with Palms, Ferns, &c. Mr. J. H. Witley, Nunhead Cemetery, had a group of Chrysanthemum plants; and Messrs. W. Cutbush & Co., Highgate, had a large table arranged with Heaths, Palms, Dracenas, Carnations, Orchids, &c., all well-grown plants. Mr. J. R. Chard, Stoke Newington, had a stand showing his floral arches, &c.; and Mr. C. E. Shea had a new kind of exhibition board, in four loose sections, that they may be placed at what distance is required by the blooms. Each section holds three flowers. Mr. C. J. Waite had a collection of vegetables.

In conjunction with the December exhibition of Chrysanthemums, a meeting of the Floral Committee took place, at which a number of novelties were staged.

First-class Certificates of Merit were awarded to Japanese Col. T. C. Bourne, a large bright chestnut reflexed Japanese, broad petalled and very fine, this came from Mr. Robert Owen, nurseryman, Maidenhead; also to Judge Hoitt, a large-flowered Japanese

Anemone, very large and full, but with several rows of guard petals, the colour blush, the basal petals deepening to pink, from Mr. H. J. Jones, Ryecroft Nursery, Lewisham; and to Amaryllis Charles Davis, reddish crimson, with a conspicuous white throat, from Mr. H. Perkins, gr. to W. F. Smith, Esq., M.P., Greenlands, Henley-on-Thames. Other new flowers were staged, but the standard set up by the Floral Committee being high, it is only very few that can gain the coveted award of a First-class Certificate of Merit. Among other new flowers was incurred Japanese Bessie Drover, pale lilac or pink; and incurred Mrs. Norman Davis, of a bright bronzy-golden colour, but which the committee, by a decisive majority, considered to be an incurred Japanese. Both the foregoing came from Messrs. W. & G. Drover, nurserymen, Fareham. Mr. C. E. Shea, Fooks Cray, Kent, sent some seedling Japanese, including Miss Maggie Blenkiron, a large incurred Japanese, having a bright salmon base and golden centre. Mr. J. Knowles, Headlands, Pontefract, sent a white reflexed flower in the way of Elsie, which the committee thought to be too much of a Japanese. Mr. Norman Davis, Camberwell, had Potter Palmer, a large white Japanese in the way of Stanstead White, but with a flatter petal—certainly a fine, full flower. Mr. H. J. Jones, nurseryman, sent Mrs. Dr. Ward; and the same variety came from Mr. J. Gilbert, Sennowe Hall, Norwich, a large salmon-yellow flower, having hairy, broad petals, which the committee wished to see again. Mr. Jones also had W. G. Newett, a primrose-white reflexed Japanese of excellent shape; H. Jackson, a deep golden incurred Japanese, in the way of Lord Brooke, very fine in colour; Miss Rose Shotta, a large and full white Japanese; and F. L. Ames, deep gold, much in the way of W. H. Lincoln. Mr. J. P. Kendall, Roehampton, sent a large bunch of the white decorative variety, Florence Percy, to show its value for cutting. Mr. Owen had in addition to the variety named above, incurred Lord Rosebery (First-class Certificate of Merit), in the way of Violet Tomlin, but a flower of deeper build, promising to be very useful; Niveus, a large-broad-petaled pure white Japanese; Richard Dean, a large flower of the E. Molyneux type, which narrowly escaped receiving a Certificate; and Mrs. Smith Ryland, a large and promising incurred Japanese, in the way of Col. W. B. Smith, but of a brighter golden hue, which the Committee wished to see again.

A Commendation was given to the "Shoemith" Chrysanthemum-cup and tube, invented and exhibited by Messrs. Geo. Coppin & Sons, Addington, Surrey.

SCOTLAND.

PRACTICAL AND TECHNICAL TEACHING OF AGRICULTURE AND FORESTRY.

SINCE we had something to say of certain horticultural associations in Scotland, now engaged in promulgating technical and practical knowledge of horticulture, we have had correspondence from various quarters stating that associations are taking steps to establish ways and means for the advancement of tuition among young gardeners. The weak feature of the movement is, that at present only a small proportion of the head gardeners enlist themselves for service in aiding their younger brethren in the craft. One would have supposed that in Scotland, where there is so much enthusiasm at the present time in promoting schemes for educational purposes to meet the requirements of all classes of the population, head gardeners would have been among the foremost in doing their part. There are excellent schemes for promoting agricultural and arboricultural knowledge, and in Glasgow (where nothing is done in a half-hearted way when once floated), we have the technical college disseminating knowledge on a grand scale, where not only agriculturists and foresters, but gardeners are taking advantage of the excellent tuition put within their reach; and as many horticulturists have to make agriculture and arboriculture as much a part of their business as gardening, the instruction given by professors and other scientists is invaluable, and although there is nothing specially set apart for gardeners, there is much in the lectures which pertains to horticulture; and from what I learn from friends of

the cause, there is a likelihood of horticulture being represented in the scheme now at work for the benefit of the sister branches. The tuition is not merely confined to lectures and object-lessons, but students are taken to the fields and forests, where practical tuition of the most useful character is imparted. In the agricultural department there are taught agricultural chemistry, geology, zoology, book-keeping, surveying, and botany. There are, among numerous subjects, lectures on soils, plant-life, rotation of crops, manures (farmyard and artificial, &c.), sub-soiling, drainage, application of manures to various crops and soils, uses of lime, nitrification, poisonous plants, weed plants, and cultivated plants, the parts of plants used, and for what purpose; diseases of plants, and insects which infest them. For arboriculturists there is practical forestry, forest botany, and entomology; besides tree construction, tree structure, tree physiology, tree classification, and botanical description. Subjects which will be of much practical value to gardeners are, lectures on insects injurious to fruit crops, American blight (*Schizoneura lanigera*), Apple aphid (*Aphis mali*), &c. Insects which attack Gooseberries and Currants are described, as also the Strawberry moth. The lectures are to be illustrated by diagrams and specimens. John Young, Esq., M.A. (Secretary), 38, Bath Street, Glasgow, will give requisite information to all who are desirous of being associated with this grand scheme, and we trust much tangible good may be done. W. Temple, Carron, N.B.

EDUCATION IN HORTICULTURE.

This year again, through the liberality of the Edinburgh Town Council, the Council of the Scottish Horticultural Society have been able to arrange for a course of technical education in horticulture, open free to young gardeners and others interested in the advancement of this science. The course is to embrace seventeen lectures on the vegetable garden—a subject which will be dealt with by the lecturers from its chemical, physical, and practical sides. The scientific lecturers are Mr. Ivison Macadam, Mr. A. N. Macalpine, and Dr. Hunter; while the practical lecturers include Mr. M. Dunn, Dalkeith; Mr. A. H. Scott, Cambusdoon; Mr. Williamson, Tarvit, Cupar, Fife; Mr. Loney, Marchmont; Mr. P. W. Fairgrieve, Dunkeld; and Mr. Temple, Carron House, Falkirk. The introductory lecture to the course was delivered recently in Dowell's Rooms, Edinburgh, by Mr. M. Dunn, Dalkeith Palace Gardens. Mr. Loney, Marchmont, presided; and among those present were Professor Bailey Balfour, Councillor Mackenzie, Mr. David Laird, Mr. Robert Laird, Secretary of the Society, &c. There was a large attendance of young gardeners.

Mr. Dunn took up the special study of the winter's course, the vegetable garden, and discussed in an exhaustive manner the principles upon which such an undertaking should be conducted in order to make it horticulturally and financially a success. He explained how such a garden should be laid out, protected from winds, sown, manured, tended, and reaped; he showed how a certain rotation in cropping was good in the garden as well as in the fields, and from his long experience of such work gave a number of average prices and quantities relating to the various branches of expenditure in every well-managed garden. *Scotsman*.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

The executive committee of this Society met on Saturday evening, the 2nd inst., Sir Arthur Grant, Bart., of Monymusk, presiding. The Chairman thanked the Society for electing him to that office, and assured the meeting that any service he could render for the benefit of the Society would be cheerfully given. Sir Arthur touched on various methods to be adopted, in order more fully to carry out the primary objects of the Society in the advancement of scientific horticulture, such as closer assimilation with the societies in the south, the sending of one or more directors to great shows, to gain additional insight; the providing of lectures during winter on horticulture and arboriculture, referring especially to the effects of the recent gales on trees in connection with the last-mentioned art. Ultimately the matter was remitted to a sub-committee to bring up an early report. The question of exhibitions next year was then discussed, and the Secretary instructed to communicate with the Aberdeen Town Council and the Highland and Agricultural Society of Scotland, whose exhibition will be held in Aberdeen next year. Thereafter, on the motion of Mr. Robson, Sir Arthur Grant was cordially thanked for presiding.

TREES AND SHRUBS.

TREES AND SHRUBS FOR AUTUMN COLOURS.

DURING the past autumn, the foliage of many trees and shrubs has been remarkably rich, more so than usual, and a few kinds were especially noted for their beauty in nurseries and gardens. The hardy Azaleas are very fine in autumn, the leaves changing to splendid colours, crimson and yellow shades, mixed with bronzy-green. In planting shrubs, their effect in autumn should be considered, as well as the beauty of their flowers or habit of growth. A group of hardy Azaleas in late September and October is as pleasing in its way as in the early days of June, when every branch is laden with fragrant bloom. If backed with evergreen shrubs, as one sees in the beautiful garden at Dropmore, the rich and diversified colouring of the leafage is intensified. Amongst Spiræas, nothing is more attractive for the colour of the leaves in autumn than *S. Thunbergi*, which changes to a self crimson colour, peculiarly rich and bright in the sunshine of an October day. The foliage is retained for some time, and does not lose its splendid colouring. The *Acers*, varieties of *A. palmatum* in particular, and such species as *A. rubrum*, are very showy, and a group of the former is as cheerful as a bed of flowers. Mr. G. F. Wilson's garden at Wisley was very beautiful with the autumn tints, especially with the *Liquidambar styraciflua*, *Andromeda arborea*, and *Vaccinium pennsylvanicum* (*Pennsylvanian Blue Berry*), three of the finest things we have for autumn colour. The *Liquidambar* is one of the most showy of North American trees in late September and October. It is unique almost in this respect, the leaves changing to deep blood-purple and red. *V. pennsylvanicum* is worth planting for the sake of its leafage in autumn alone. The bush is in October brilliant with its scarlet foliage, and a good specimen lights up the garden with colour. Very fine also for its colour is *V. corymbosum*, which has pinkish-coloured flowers. The *Thorns* (*Cratægus*) are splendid for their autumn colours, and *C. coccinea* is richer than any, the leaves turning to a scarlet shade, touched with purple. A specimen of this, when in free beauty in autumn and laden with scarlet fruits, is striking. It is a pity that the forms of *Cratægus* are not more planted in English gardens. They are, as a rule, picturesque in growth, beautiful when in flower, and in autumn amongst the brightest dwarf trees in gardens for leaf-colouring and fruit. *Virgilia lutea*, the yellow wood of the United States, has leaves which change in early autumn to a deep golden colour. The *Viburnums*, especially *V. plicatum*, *Parrotia persica*, *Rhus cotinus*, *R. c. purpurea*, the leaves dying off a yellow and fine red colours; and the Oaks may also be mentioned. *Quercus coccinea splendens* is remarkably rich and very fine in Mr. Waterer's nursery at Knap Hill. There are many other trees and shrubs of great beauty for their richly-coloured leaves in autumn, but those enumerated we have made special note of lately. *V.* [The soft yellow tint of the pinnate leaves of *Koeleria paniculata* should cause its inclusion in the list of picture trees. Ed.]

Obituary.

E. S. DODWELL.—Carnation-growers all the world over will receive with regret the intelligence of the death of Mr. Ephraim Syms Dodwell, at The Cottage, Stanley Road, Oxford, on November 30, at the age of 75 years. He was buried in the Holywell Cemetery, Oxford, on December 5, a large circle of relations and personal friends gathering about his grave.

Mr. Dodwell was a native of Buckinghamshire, having been born at Long Crendon, in that county, on November 28, 1819; and, up to the time of his leaving to take an important position in a house of business at Derby, he was engaged in commercial pursuits in London, going to Derby in 1845; while

there, he developed that love for floriculture which he never lost; and the Picotee form of the Carnation was his especial fancy. He threw himself with great ardour into its cultivation, in raising new varieties, in improving the standards of excellence, and in the promotion of Carnation and Picotee exhibitions. He became the Secretary of the Midland Horticultural Society, the meetings of which were held at Derby; he was a hearty supporter of the National Carnation and Picotee Society, and on the occasion of the annual exhibition of the latter in 1854, at the Derby Arboretum, a testimonial was presented to Mr. Dodwell, consisting of a purse of sixty-five sovereigns, and an address on an elegantly framed scroll, in recognition of his services on behalf of the Midland Horticultural

up his residence at Clapham, cultivated the Carnation and Picotee with marked success. In conjunction with the late Mr. Charles Turner, he was instrumental in forming the southern branch of the National Carnation and Picotee Society, and in doing so gave a great impetus to the cultivation of the Carnation in the London district and adjacent parts.

In 1881 Mr. Dodwell removed to Oxford, and soon after established the Carnation and Picotee Union, the first exhibition of which was held in 1885. At Oxford he formed a Carnation garden of a unique kind, and he entered upon the work of raising new varieties with great ardour and considerable success, putting into commerce from time to time fine varieties of all sections. The exhibitions of the Union in his garden proved a great attraction, and as they

the Oxford Union, and the Midland Carnation and Picotee Union, attest to the success which attended his efforts.

Mr. Dodwell leaves a widow and sons and daughters to deplore their loss. He also leaves a wide circle of friends to share with his family the sorrow.

JAMES BURR.—Many old gardening friends will regret to hear of the death of Mr. James Burr, which took place at Washington, U.S.A., on November 11, from fever contracted whilst on a visit to the Chicago Exhibition. Mr. Burr was one of the old school of gardeners, who had received the groundwork of his knowledge at one of those princely establishments in Scotland where gardening is conducted in such a thorough manner, and which have produced so many men who have become eminent in their profession. He came to England when a young man, and held some first-class appointments during his time, notably as head Gardener to the Duke of Manchester, at Kimbolton; to Lord Wantage, at Lockinge; to Sir J. Thorold, at Syston, his first place as head gardener; and at Biddulph Grange, once a famous show place in Staffordshire. And before going out to the United States to lay out an estate for one of the American millionaires, he did useful service in laying-out several of the London churchyards and squares, and in street-tree planting for the Metropolitan Public Boulevards Association.

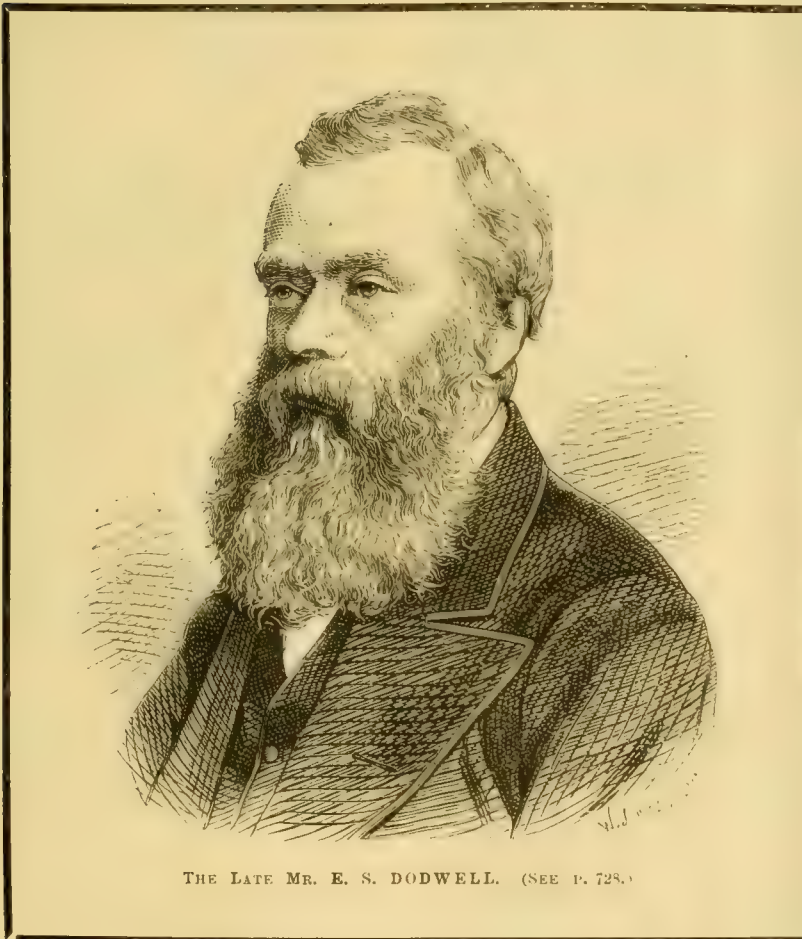
He was one of those honest, upright, and industrious men, who carefully weighed his intentions, and prepared his plans with much ability, and executed them with intelligence.

OLEARIAS OF NEW ZEALAND.

THIS fine genus comprises nearly one hundred species of ornamental shrubs or small trees, all of which are confined to Australia and New Zealand, no species being common to both countries. It comprises plants of varied habit, foliage and inflorescence from almost prostrate shrubs to trees, with a trunk 2 feet in diameter; from small linear to broadly ovate leaves 4 inches in diameter; from species with solitary or fasciculate flower-heads, to those with a large panicle inflorescence; lastly, from species with minute flower-heads, containing only a single floret to those large heads containing many hundreds of florets. The species with large flower heads, are, perhaps the most attractive to the cultivator, and possess the greatest interest for the botanist. All are of remarkable beauty, and with one exception, all are confined to the southern extremity of the colony, or to the outlying islands. Why the Compositæ, with attractive violet-purple disc florets, should be restricted to such narrow limits, might form an interesting subject of enquiry, but would be somewhat outside the scope of this paper, yet the fact remains that with the exception of two fine *Collinsias* restricted to the Auckland and Campbell Islands, and four species of *Olearia*, restricted to Preservation Inlet, Stewart Island, and the Chatham Islands, all the species of these fine genera have comparatively unattractive white or yellow disc florets.

With one exception, all the species of this section have rigid and excessively coriaceous leaves, which are toothed, or crenate, or doubly crenate, the crenatures being very narrow, and often reduced to rounded callous points. In the mature state, the leaves are glossy or shining above, and white, with appressed tomentum beneath. They vary in shape from narrow lanceolate to broadly ovate or orbicular ovate, and may be sessile or petioled. The flower-heads are either solitary and carried on slender or robust terminal peduncles, or arranged in terminal racemes, and they may be either rayed or destitute of rays.

All the species are easily managed under cultivation, and require very little special treatment; they bear cutting-in freely, and are readily propagated by layers or cuttings. A mixture of peat and loam is suitable for all the species except *O. insignis*, which



THE LATE MR. E. S. DODWELL. (SEE P. 723.)

Society. In making the presentation, testimony was borne to his "unflagging energy, indomitable perseverance, and unconquerable pluck," qualities which he exhibited all through his life. At that time Mr. Dodwell was a raiser of seedling Picotees, and in the pages of the *Midland Florist*, conducted by the late Mr. J. F. Wood, and in the *Florist*, at that time edited by the late Mr. C. Turner, he was constant in writing in the interest of the Carnation and Picotee, and did much to improve its cultivation, and raise the standard of excellence.

In 1856, in conjunction with the late Mr. John Edwards, of Holloway, he started and conducted *Gossip of the Garden*—an excellent florist's periodical in its day. He also became a partner in the firm of Messrs. Holland, Dodwell & Bayley, Florists, at Cheddleston and Manchester, but the association did not continue for any great length of time. Mr. Dodwell left Derby for London in 1860, and taking

partook more of a social and friendly character than any which had preceded them, they were largely attended, and in addition to the many varieties staged for competition, the extensive floral treasures of Mr. Dodwell's garden were also open to inspection. His last work appears to have been the issuing of the Annual Report of the Union for 1892, which always took the character more of an annual than a mere matter-of-fact report. In 1886, Mr. Dodwell issued the first edition of his book on the Carnation and Picotee, which was widely distributed; and two years ago he issued a new and cheaper edition, with chapters on the yellow Carnation. He was one of the first to take in hand this section of flowers, the Kilmurry Yellows affording him an excellent start, and he raised many seedlings of high quality. No one has laboured longer and more earnestly and persistently in making the Carnation popular, and

prefers limestone; but they will flourish in any ordinary garden soil. The following brief descriptions of the species comprised in this section will be found useful to the cultivator:—

A.—FLOWER-HEADS ON TERMINAL PEDUNCLES.

1. *Olearia semi-dentata*, Decaisne, Hook. f., in *Flora of New Zealand*, i., 115.—A charming shrub, 1 to 2 feet high, with slender branches, and linear-lanceolate leaves $1\frac{1}{2}$ to 2 inches long, $\frac{1}{4}$ to $\frac{1}{2}$ inch broad, distantly toothed, narrowed at the base, and white beneath. Flower-heads on slender peduncles 1 to 3 inches long, few or many at the tips of the branches. Ray-florets purple, disc-florets violet-purple. J. Buchanan, *Trans. New Zealand Institute*, vii. (1874), t. 14. Hab., Chatham Islands.

2. *O. Chathamica*, n.s.—Of similar habit to the preceding but more robust, and with very coriaceous leaves, 1 to 2 inches long, $\frac{1}{2}$ to $\frac{3}{4}$ inch broad, ovate or oblong lanceolate, white beneath, serrate, teeth narrow, with obtuse callous tips, narrowed into a short broad petiole, acute. Flower-heads few on slender peduncles with distant linear bracts. Involucral leaves in two series, acute, ray florets rather broad, white, disc florets violet-purple. O. operina, *Handbk. N. Z. Fl.*, 731, not of p. 124. O. angustifolia var. J. Buchanan, *Trans. New Zealand Institute*, l.c., t. 15, not of Hook. f. Hab. Chatham Island. A charming species of remarkably easy cultivation, but like the preceding, apt to die out in a few years unless cultivated in soil of a peaty character.

3. *O. operina*, Hook. f., *Fl. N. Z.*, i., 115.—A sparingly branched shrub, 6 to 12 feet high, with rather stout branches. Leaves spreading, very coriaceous, narrowly obovate-lanceolate, narrowed at the base into a winged petiole, teeth close, obtuse, callous. Peduncles, 1 to 3 inches long, clothed with short overlapping bracts. Heads large. Syn. *Arnica operina*, Forster.

Var. β , with more robust branches, shorter and more coriaceous leaves with longer teeth. Hab. South Island, Martin's Bay to Preservation Inlet.

The flower-heads vary in number, as many as eighteen have been counted on the extremity of one branch, but the usual number is from six to eight. Ray florets white, with yellow disc. In the young state plants are of a strict compact habit, which becomes straggling with age.

4. *O. angustifolia*, Hook. f., *Fl. N. Z.*, i., 115.—A shrub or small tree, 6 to 20 feet high, with robust branches and narrow lanceolate acuminate leaves, 3 to 5 inches long, glossy deep green above, white beneath, excessively rigid and coriaceous, crenate or doubly crenate. Heads, $1\frac{1}{2}$ or 2 inches in diameter, on stout peduncles, which are shorter than the leaves, and clothed with foliaceous bracts. Disc-florets deep violet-purple; ray-florets white. T. Kirk, *Forest Flora of New Zealand*, t. 138. Hab., Stewart Island. Distinguished from all the species with solitary heads by the rigid foliage and foliaceous bracts. The foliage emits a delicious fragrance.

This grand plant, in my estimation, is the most beautiful of the genus. "Looking down from some sea-cliff in the southern portion of Stewart Island, the visitor may see below a compact, dense-shaped head, 30 feet in diameter; the narrow rigid leaves of the deepest green are seen to be white beneath as the branchlets are stirred by the breeze. Carried on the tips of the branchlets are clusters of from four to ten large flower-heads, each about 2 inches in diameter, with a rich deep purple disc surrounded by snow-white rays, the separate clusters resembling large bouquets, set in deep green, and producing one of the richest effects imaginable."

B.—FLOWER-HEADS IN TERMINAL RACEMES.

5. *O. Traillii*, T. Kirk, *Trans. N. Z. Inst.*, xvi. (1883), 372; *Forest Flora of N. Z.*, t. 142. A handsome shrub or small tree 15 feet high or more, with stout branchlets. Leaves crowded near the tips of the branchlets, 4 to 6 inches long, 1 to $1\frac{1}{4}$ inch broad, lanceolate or narrow obovate-lanceolate, acute, coriaceous, white beneath, margins doubly serrate or crenate. Heads crowded, in erect terminal

three to eight-flowered racemes, with deciduous foliaceous bracts; peduncles, &c., white, with appressed tomentum. Rays white, disc violet-purple. Hab., Stewart Island and Pyssegur Point. Rare and local. One of the most striking plants in the New Zealand Flora.

6. *O. Colensoi*, Hook. f., *Fl. N. Z.*, i., 115, t. 29.—A shrub, or really a tree, 40 feet high, with a trunk 2 feet in diameter; leaves broadly oblong, or ovate, acuminate, shortly petioled, white beneath, doubly serrate, or crenate. Heads in terminal racemes, 3 to 8 inches long, rayless, dark lurid purple, approaching black. The dark-coloured disc flower-heads form a strong contrast, with the rhachis and peduncle, which are snow-white, with appressed tomentum. Hab., North and South Islands, Stewart Island. In the North Island this species is a mere shrub, 3 to 6 feet high, and rarely occurs below 3000 feet, being confined to the Ruahine and Tararua Mountains. On Stewart Island it descends to the sea-level, and sometimes forms a tree 40 feet high, as already stated. It is probably the largest species of the genus, although the Australian *O. argophylla*, F. Mueller, approaches it very closely. Its branches are extremely tough, and as they are interlaced with other shrubs, the plant forms an obstacle to mountain climbing in Stewart Island not easy to overcome. It is the "mutton-bird wood" of the southern natives, and so called from the mutton-birds (petrels) frequently making their burrows amongst its roots.

7. *O. Lyallii*, Hook. f., *Fl. N. Z.*, i., p. 116.—Similar in habit to the last, and attains the height of 30 feet, but the branches are stouter and more open, with broadly ovate, or orbicular-ovate, leaves, which are tomentose on both sepals, and excessively coriaceous. Flower-heads in terminal racemes, similar to those of *O. Colensoi*, but still darker in colour. The involucral leaves are arranged in from five to eight series; white, with appressed tomentum. Hab., The Snares, Auckland Islands. Although this plant closely approaches *O. Colensoi* in most particulars, its general appearance is very different, owing to its more open habit, more spreading branches, and profuse tomentum. This, however, disappears from the upper surface of the leaves during their first winter.

C.—PEDUNCLES TERMINAL, NAKED.

8. *O. insignis*, Hook. f., *Fl. N. Z.*, ii., 331. A robust species, of spreading habit, and great beauty, usually 1 to 3 feet high, with oblong or ovate quite entire leaves, crowded near the tips of the branches. Leaves green, glossy above, white beneath, excessively coriaceous; flower-heads on naked peduncles, 6 to 12 inches long, as thick as a goosequill, white, with appressed pubescens, heads 1 to $2\frac{1}{2}$ inches in diameter, with many series of tomentose involucral leaves; ray florets narrow, white, disc yellow. Hab., South Island, Amuri to Kaikoura, sea level to 4000 feet.

The leaves of this handsome species are occasionally 7 inches in length; it is the only species with entire leaves belonging to this section. Two or three leafy bracts are occasionally developed on the peduncle. The large globose flower-heads are elevated above the foliage, and give this plant an appearance quite unlike that of any other. Its nearest allies are two Australian species, *O. grandiflora*, Hook. f., *loc. Pl.*, t. 862, from South Australia; and *O. pauciflora*, Hook. f., from South Australia and Victoria. T. Kirk, *F.L.S., Wellington, N.Z.*

THE TRANSPLANTATION OF PORTIONS OF PLANTS.—The question whether the parts of a plant can be made to grow by inserting them in any part of another plant of the same species has recently been investigated by Dr. H. VÖCHTING, who, in the *Bot. Zeitung*, iv., p. 815, describes the results of a number of experiments, chiefly on the common Beet. He found that when the transplanted and the receiving organ are the same, the experiments succeeded with any section of root, stem, or leaf—longitudinal, tangential, or radial; and that, under certain conditions, the same holds good when two

organs are different. He concludes from this that there is no organic principle of differentiation between the various organs. The essential condition is that the transplanted portion of tissue must be placed in its normal position; if this is not observed, coalescence of growth may take place, but with various disturbances or distortions; or one part may even exercise a poisonous influence on the other.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.				
	Above (+) or below (−) the Mean for the week ending December 2.	ACCUMULATED.				No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.							
	Above (+) or less (−) than Mean for the Week.											
	No. of Rainy Days since Jan. 1, 1893.											
	Total Fall since Jan. 1, 1893.											
	Percentage of possible Duration for the Week.											
	Percentage of possible Duration since Jan. 1, 1893.											
0	1	—	9	39	+ 482	+ 11	26	+ 227	50	7	12	23
1	0	aver	10	38	+ 286	+ 38	5	179	24	8	22	32
2	1	12	26	+ 416	— 27	3	157	19	4	23	36	
3	1	12	25	+ 500	— 6	0	aver	155	19	4	18	43
4	1	13	30	+ 635	— 7	4	146	18	0	22	40	
5	1	12	24	+ 546	— 14	4	146	21	0	21	44	
6	1	16	28	+ 454	+ 8	4	181	36	3	29	36	
7	1	21	13	+ 725	— 67	1	170	27	8	22	35	
8	1	21	13	+ 656	— 33	7	154	29	3	26	46	
9	1	21	11	+ 528	— 57	5	193	30	3	29	32	
10	1	13	21	+ 547	— 51	2	168	27	7	27	35	
*	1	29	0	+ 804	— 47	7	160	25	1	23	53	

The districts indicated by number in the first column are the following:—

0. Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, E.; Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending December 2, is furnished from the Meteorological Office:—

"The weather was very changeable, with considerable fluctuations in temperature. Snow fell in Scotland on November 29 and 30, and afterwards extended southwards over the greater part of the United Kingdom.

"The temperature differed very little from the normal. The highest readings were observed mainly on November 28, when the thermometer exceeded 55° in all districts, excepting 'England, S. and S.W.', and the 'Channel Islands.' In 'Scotland, N. and E.', the absolute maximum was as high as 59°. The lowest readings occurred in 'Scotland,' mostly on December 1; but, over 'England and Ireland,' on December 2, the thermometer on one or other of these dates falling to 20° or less in all districts, excepting 'Ireland, N.' and the 'Channel Islands.' In 'Scotland' the absolute minima ranged between 12° and 15°.

"The rainfall amounted to less than the mean in all districts, excepting 'Scotland, N. and England, E.,' the deficit being in many places very considerable. In 'Scotland, N.,' however, the total amount was as much as three times the normal, the excess being due chiefly to some exceedingly heavy falls, which occurred in the western parts of the district. At Glencarron the total for the week was no less than 10.9 inches.

"The bright sunshine was in excess of the mean in

all districts, excepting 'Scotland, N.,' and 'England, E. and S.' The percentage of the possible duration ranged from 12 in 'Scotland, N.,' and 18 in 'England, E.,' to 29 in 'Scotland, W.' and 'Ireland, N.'"

MARKETS.

COVENT GARDEN, December 7.

We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, &c.]

PRICES rule as last week.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 3 0-5 0	Narciss, French, white, 12 bunches ... 2 0-3 0
Bouvardias, per bun. 0 6-1 0	— yellow, 12 bun., 1 6-3 0
Camellias, doz. blm. 1 0-2 6	Orchids:—
Carnations, 12 blms. 1 0-2 6	Cattleya, 12 blms. 6 0-12 0
Chrysanthemums, 12 bunches ... 2 0-6 0	Odontoglossum crispum, 12 blms. 2 0-6 0
— doz. blooms ... 0 6-3 0	Pelargoniums, scarlet, per doz. 4 0-6 0
Eucharis, per dozen 4 0-6 0	— 12 sprays ... 0 6-1 0
Gardenias, per dozen 2 0-4 0	Roses, French, p. doz. 0 9-1 6
Hyalanth, Roman, 12 sprays ... 0 6-1 0	— p. box of 100 2 0-3 0
Lilac (Fr.), per bun. 4 0-6 0	— Tea, per dozen 0 6-2 0
Lilium Harrisii, doz. 6 0-9 0	— coloured, dozen 2 0-4 0
Lily of the Valley, per dozen sprays ... 2 0-3 6	— yellow (Maréchal), per doz. 2 0-6 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-1 6
Marguerite, 12 bun. 1 6-3 0	Tuberose, 12 blms. 0 4-0 6
Mignonette, 12 bun. 2 0-4 0	Violets, Parmé, p. bn. 2 6-4 0
Primula, dble. p. bun. 0 6-1 0	— Czar, per bun. 2 0-2 6
	— English, per doz. 1 6-2 0

ORCHID-BLOOM in variety.

CHRYSANTHEMUM-BLOOM very plentiful, price is low in consequence.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ficus elastica, each 1 6-7 6
Aspidistra, per doz. 15 0-30 0	Foliage plants, doz. 12 0-42 0
— specimen, each 7 6-21 0	Marguerites, per doz. 6 0-12 0
Chrysanthemums, doz. 8 0-9 0	Mignonette, doz. pots 6 0-9 0
— large plants, each 1 6-2 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dracena, each ... 1 0-5 0	Pelargonium, scarlet, per dozen ... 3 0-6 0
Erica, various, p. dz. 9 0-24 0	Poinsettias, per doz. 12 0-15 0
Evergreen Shrubs, in var., per dozen ... 6 0-24 0	Primulas, per dozen 4 0-6 0
Ferns, various, doz. 4 0-9 0	Solanums, per doz. ... 9 0-12 0
— small, per 100 4 0-6 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 6-7 0	Pine-apples, St. Michael, each ... 2 6 7 6
Cobs, per 100 lb. ... 32 6-...	
Grapes, per lb. ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 4-...	Lettuces, per doz. ... 1 3-2 0
Beet, red, per dozen 1 0-2 0	Mushrooms, punnet 1 3-2 0
Carrots, per bunch ... 0 4-0 6	Mustard and Cress, punnet ... 0 2-...
Cauliflowers, each ... 0 2-0 4	Parsley, per bunch ... 0 2-0 3
Celery, bundle ... 1 0-1 3	Shallots, per lb. ... 0 3-...
Cucumbers, each ... 0 4-1 0	Tomatoes, per lb. ... 1 0-...
Endive, per dozen 1 3-1 6	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 3-1 0	
Leeks, per bunch ... 0 3-...	

POTATOS.

The prices during the past week have been firm for best samples only. Lower prices have been taken in most instances for inferior samples and qualities. Prices for best kinds, 70s. to 100s.; and for ordinary, 35s. to 60s. J. B. Thomas.

SEEDS.

LONDON: Dec. 6.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that this being Cattle Show week the seed market has been well attended. This morning's cables from America report a further advance in Clover seed of 1s. per cwt. Choice samples of new English Red are somewhat scarce and excite increased attention. There is no change in either Alsike White or Trefoil. Rye grasses neglected. Canary seed, with a strong undertone, has risen another 2s. Hemp seed keeps cheap. More money is asked for Rape seed. Mustard is steady. Peas and Haricots unchanged. Canadian Linseed very firm.

FRUITS AND VEGETABLES.

BOROUGH: December 8.—Quotations:—Savoy, 4s. to 6s.; Cauliflowers, 4s. 6d. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 2s. to 3s. 3d. per dozen bunches; Onions, 5s. 6d. to 6s. 6d. per bag; English, doz., 6s. 6d. to 7s. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

STRATFORD: Dec. 5.—Quotations:—There has been an excellent supply of all kinds of produce at this market during the past week, and a good trade was done at the undermentioned quotations:—Cabbages, 1s. to 3s. 6d. per tally; Savoy, 2s. to

5s. do.; Greens, 6d. to 1s. 3d. per bag; do. 1s. to 1s. 9d. per dozen; Cauliflowers, 8d. to 1s. 6d. per dozen; do., 2s. 6d. to 6s. 6d. per tally; Brussels Sprouts, 1s. 3d. to 1s. 6d. per half-sieve; do. 2s. to 2s. 6d. per bushel; Celery, 6d. to 1s. per roll; Horseradish, 1s. 3d. to 1s. 6d. per bundle; Turnips, 1s. 3d. to 1s. 6d. per dozen bunches; do., 20s. to 35s. per ton; Carrots, household, 40s. to 55s. do.; do., cattle-feeding, 28s. to 36s. per ton; Parsnips, 8d. to 1s. per score; Mangels, 19s. to 25s. per ton; Swedes, 20s. to 26s. per ton; Onions, English, 150s. to 18 s. do.; do. Dutch, 6s. to 6s. 6d. per bag; do., American, 6s. to 7s. per case; Apples, English, 2s. to 6s. 6d. per bushel.

FARRINGTON: Dec. 7.—Quotations: Celery, 8s. per dozen; Horseradish, 1s. 3d. per bundle; Carrots, 2s. 6d. per dozen bunches; Onions, English, £7 10s. per ton; case, do., 6s. 6d. per case; Sprouts, 1s. 3d. per half bushel; Turnips, 1s. 6d. per cwt.; Chestnuts, 7s. per bag of 50 kilos; Apples, cooking 1s. per bushel; Blenheim, 7s. do.; Grapes, English, 1s. 4d. per lb.; barrels, 11s. each.

POTATOS.

BOROUGH AND SPITALFIELDS: December 5.—Prices ranged from 35s. to 100s. per ton.

STRATFORD: Dec. 5.—Quotations:—Magnum, dark soil, 35s. to 42s.; do. light, 40s. to 60s.; Imperators, 40s. to 60s.; Hebrons, 53s. to 70s.; Scotch Magnums, 50s. to 70s. per ton.

FARRINGTON: Dec. 7.—Quotations:—Hebrons, 80s. to 100s.; Snowdrops, 60s. to 80s.; Main Crop, 60s. to 80s.; Regents, 50s. to 70s.; Magnums, 40s. to 60s.; Blackland do., 40s. to 50s. per ton.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 150s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s.; new Mixture, 115s. to 130s.; and Straw, 35s. to 58s. per load.

CORN.

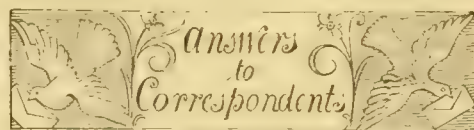
Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 2, and for the corresponding period in last year:—1893: Wheat, 27s.; Barley, 28s. 8d.; Oats, 18s. 5d. 1892: Wheat, 27s.; Barley, 28s. 5d.; Oats, 17s. 2d.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

BELGIAN ORCHID GROWERS' COMPOST.—Will some correspondent kindly afford "W.H.B." a description of the above?

WILLOWS FOR BASKET WORK.—"A Canadian Friend" desires the following information: In what condition are Willows placed upon the market by growers? What price is usually obtained? What varieties and sizes are most in demand? Is the market generally fully supplied?



OUR ALMANACK.—Secretaries of Societies and others, are earnestly requested to forward immediately, the dates of Show Fairs and Meetings of Botanical and Horticultural Societies of any kind for 1894, for insertion in the Almanack, to be published in our issue for January 6.

ADDRESSES OF FRENCH RAISERS OF ROSES: W. H. H. Ducher Frères, Chemin de Quarter Maisons; Levet, Route d'Heyrien Mont Plaisir, 73; Guillot, J. B., Grand Rue de la Croix Rousse. All of the above are in Lyons.

ACUCUA: Aco.—The old variegated form is, so far as we know, always female, but there is no reason why we should not get a blotched-leaved male. The green-leaved form you send has male flowers, but some of the green forms are female.

CELOGYNE BARBATA: W., Streatham Common. The plant is best accommodated in the cool Orchid-house, and requires a plentiful supply of moisture. The plant is not like C. cristata, in that the flowers do not damp-off if not afforded more warmth than that of the cool-house when pushing them forth.

COVERT FOR RABBITS, TO CONSIST OF PLANTS THAT THE ANIMAL WILL NOT GNAW: Planter. Rhododendron ponticum, common Laurel, Portugal Laurel, common or other, Privet, Berberis vulgaris, Berberis aquifolium, Snowberry, Cornus sanguinea, C. Mas. Most of the above grow fast.

GRAPES FOR UNHEATED HOUSE, AND PEARS, PLUMS, FOR AN EAST WALL: A. F. Black Hamburg is the best Grape for the purpose, then come Foster's Seedling and Royal Muscadine. The Pears may consist of Jargonelle, Williams' Bon Chrétien, Beurré Giffard, B. d'Amanlis, Madame Treve, Beurré Hardy, Thompson's Seckle, Marie Louise, Conseiller de la Cour, Beurré Bosc, Brockworth Park, Glou Morceau, Doyenné du Comice, Beurré d'Anjou, Chaumontel, General Todtleben, Monarch, Bergamotte d'Esperen, Easter Beurré and Doyenné d'Alençon. Plums, dessert, Grand Duke, Monarch, The Czar, Angelina Burdett, Coe's Golden Drop, Kirke's, Bryanstone Gage, and Reine Claude de Bayay. These ripen in the order given, as also do the Pears. If culinary Plums are required, choose Early Rivers, Belle Louvaine, Denbigh, Diamond, Mirabelle, Pond's Seedling, Victoria, and Automne Compté.

GRAPES SHANKING: K. H. H. We should take it that overcropping is in this case the cause of the shanking, especially as the fruit has lost colour. Examine the border as to the drainage and condition generally. We cannot repeat all that has been written on this subject in the *Gardeners' Chronicle*. See correspondence on the subject in the present issue.

LEAF-MOULD AND VINES: C. M. This substance, even when it is thoroughly decayed, which the sample sent is not, is not good for Vines, young or old. The sample must have been placed near the roots in large quantities, and when only in a state of partial decay, and having been insufficiently moistened, it did not thoroughly decay, hence the growth of fungus, and the consequent destruction of the finer roots. Clear it out, and replant the Vines in sound loam, with $\frac{1}{2}$ gal. of crushed bones, $\frac{1}{2}$ gal. of old plaster, and a sprinkling of Vine-manure to each barrowload of soil. Young Vines are best planted when in a growing state—say, in the months of April, May, or even later.

LEEDS MARKET AND LONDON MARKET CABBAGES: Customs. We believe these varieties are quite distinct. One Leeds Market variety is the Ox-heart.

NAMES OF FRUITS: Y. S. 1, Gansel's Bergamot; 2, Marie Louise; 3, Josephine de Malines.—J. Warren. We do not know the Apples you send us; they seem to be strangers.

NAMES OF PLANTS: W. K. B. It is very difficult, and in many cases impossible, to identify Conifers from small scraps:—A, a Juniper, probably J. virginiana; B, probably a form of Juniperus virginiana; C, probably Juniperus sinensis; D, a form of Thuia (Biota) orientalis; E, probably a seedling form of Thuia occidentalis; F, probably a form of Thuia occidentalis.—W. S. Maxillaria picta.—D. Agrostemma coronaria, so far as we can tell from an unflowered specimen.—W. J. 1, Blechnum brasiliense; 2, Asplenium australasicum; 3, Aspidium coriaceum; 4, Polypodium appendiculatum; 5, Davallia Tyermanni; 6, Nephrolepis exaltata.—Subscriber, 1, Abutilon vexillarium variegatum; 2, Anthurium lineare variegata; 3, Dracena rubra; 4, D. amabilis; 5, Begonia metallica; 6, Abutilon Sellowianum marmoratum; 7, Begonia Ingramsii.

PEACH-HOUSE: Planter. No fruit trees would do any good on the back-wall with Peach trees covering the roof. You might plant Maréchal Niel or W. Allan Richardson Roses. These would flower early before the trees shaded them very much. Camellias would succeed, and perhaps Lapagerias. If you could put the Peach trees on a trellis 3 or 4 feet from the roof, "rider" Peach trees, that is, trees with a tall stem, would answer very well on the wall. It is too shady for Tomatoes as at present arranged; although they also would answer if the front trees were placed lower.

PEACHES FOR FORCING: Sunbury. We give the following in the order of their ripening:—Early Beatrice, small, good, July 6; Early Rivers, large, delicious, July 18; Early Silver should be put in a warm part of the house, large, rich, coming in early August; Condor, August, medium size, piquant, good; A'bec, good, August; Grosse Mig-

nonne, fine Peach, September; Belle Bance, fine, end of August; some fine late varieties are Princess of Wales, Sea Eagle, Golden Eagle, Gladstone.

POINSETTIA PULCHERRIMA LOSING ITS LEAVES AND BRACIS: W. C. If it be not due to a sudden fall of temperature, or watering them with water near the freezing point, we are unable to account for the mishap; the roots and stem being healthy.

PRIMULA FORBESII: K. L. D. It is described as monocarpic, that is, that it dies after flowering and producing seed, so that its life may extend over more than one year.

PYRUS JAPONICA FRUIT, AND THE BERRIES OF THE WINTER CHERRY: S. C. C. The fruits of the former if they can be obtained in a mature state—and that may not be difficult this year, may be allowed to get bletted like the Medlar, in which state they make a very nice jelly, or a jam. The berries of the Winter Cherry, are liked in the raw state by some persons, and are commonly so eaten in France. When the envelope is slit and turned back, exposing the scarlet fruit inside, they form pretty winter ornaments for filling vases if cut with long stalks.

RAPE AND CRESS: A. B. C. It is usual to grow these saladings on sloping banks of soil in houses heated up to 60° by night, and a little higher by day, with but small ventilation afforded. It does in forcing-houses, in vineries with the roots of the vines in outside borders only, the bank of soil being thrown up from the front to the back. The surface soil should be moderately good, and when it consists of pure leaf mould, but little grit is found in the plants when cut in the seed-leaf stage.

TO GET RID OF RABBITS: G. Cadbury. Put several ferrets, smeared with petroleum, into the rabbit-holes. This will have the effect of clearing out the rabbits for a time, and after this is done, stop the holes with sods; and with terriers and guns clear the rabbits out of their hiding-places in the bushes. The ferrets should be smeared several times, and if a ferret kill, and become thereby lazy, put a fresh one into the holes. You cannot use a line with them, but a bell tied on the neck is useful in finding a ferret if "laid up." Badly-infested land cannot be cleared of the animals at one attempt. We cannot recommend the use of poison in this country.

TUBER: W. J. B. A tuber of a Chirita or other Gesneriad, but we cannot say which species, unless flowers and leaves could be sent.

WATER AT 80° TO 85° FOR PEACH TREES: H. W. It is good practice to syringe forced trees with warm water, and although the water in the water-can might be 80° to 85°, when it reached the trees it would be several degrees below these figures; so also with water as warm only as the air of the forcing-house. Water of 80° is not absolutely needed, but its use at this season hastens the starting of growth, and cannot do harm. Mr. Temple knows what he is about.

WATFORD SHOW: W. G. We do not profess to report every show, nor to record everything which is shown. The space at our disposal would not permit it to be done. But we select only the more important exhibitions and the principal features of the exhibition.

COMMUNICATIONS RECEIVED.—T. H. C. (with thanks).—H. H. D'O.—W. R. B.—A. H. C. (with thanks).—W. H. W.—C. W. B.—Haage & Schmidt, Erfurt.—D. B.—G. Callender.—S. S.—R. H. Vertegans & Co.—W. J. B.—K. L. D.—J. C.—S. C. G.—Maxwell.—J. R. J.—E. W. B.—Professor Oudemans, Amsterdam.—D. T. F.—H. A. Burberry.—H. H. D.—E. M.—S. A. T.—*Journal of Horticulture*.—H. M.—T. H. C.—K. L. D.—R. H.—J. W.—M. T.—G. T. W.—M. W.—W. D.—V.—A. D.—P. W.—T. B. H.

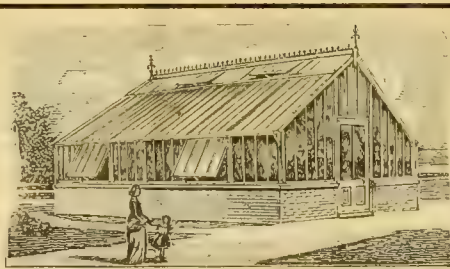
FRUIT SENT FOR NAMES.—K. H. H. & Co., next week.

CONTINUED INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

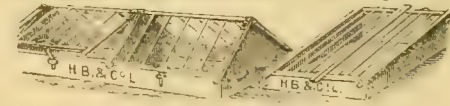
IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THIS GREENHOUSE erected and heated complete, in any part of the country, best materials only, workmanship guaranteed, 25 ft. by 12 ft., £50; 30 ft. by 15 ft., £70. Brick-work excepted. For particulars, see our Catalogue, post-free.



Superior Portable Frames, large stock ready for immediate use, well made, painted four coats, glazed with 21-oz. glass, carriage paid:—1-light frame, 4 x 6, 36s. 6d.; 2-light frame, 6 x 8, 58s.; 3-light frame, 12 x 6, 85s. 6d. Span-roof Frames, 9 x 5, £3 15s.; 12 x 6, £5; 16 x 6, £7 10s. Can send off same day as ordered.

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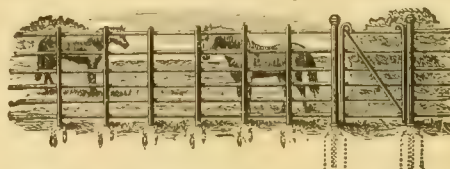
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WANTED, the above, to try **SPENCER'S NEW ELECTRA GUANO**. Prize Growers of Flowers and Vegetables will find this the most powerful yet harmless Fertiliser yet introduced. Sample cwt. bag, 20s. carriage paid. Analyst's report with each parcel. Agents wanted in districts not yet represented. First-class men will be honestly and liberally dealt with. Apply, I. SPENCER, 54, Spring Street, Hull.

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Analysis produced to purchasers of any quantity on application.

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GISHURST COMPOUND, used since 1859 for Red Spider, Mildew, Thrips, Greenfly, and other blight; 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake, for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

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(Trade supplied on best terms).

Specially selected and prepared for Orchids and all other plants. Also Loam, Sand, Artificial Manures, Insecticides, Rest Russian Mats, Sphagnum Moss, and Garden Sundries of every description. Special quotations given for any goods sent carriage paid.

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PREPARED, ready for use, all fibre, 10s. per sack; 5 for 47s. 6d. SELECTED, in blocks, very fibrous, 8s. per sack; 5 for 37s. 6d. SECOND QUALITY, 5s. per sack; 5 for 22s. 6d. BROWN FIBROUS PEAT, for Azaleas, Rhododendrons, and Ferns, 4s. per sack, 5 for 18s.; and 3s. per sack, 5 for 12s. 6d. PEAT-MOULD, LEAF-MOULD, and FIBROUS LOAM, each 2s. 6d. per sack; 5 for 10s. PREPARED POTTING COMPOST, 4s. per sack; 5 for 18s. All sacks included. Send Postal Order for Sample Sack.

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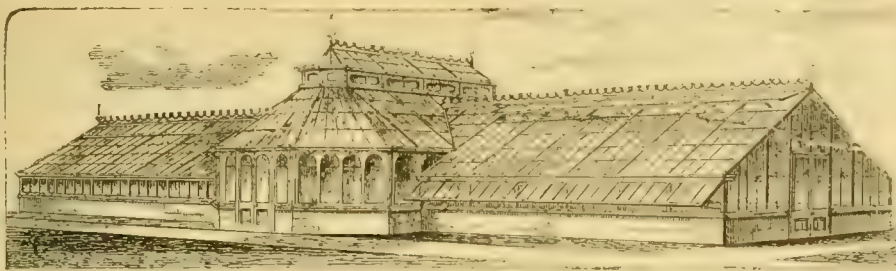
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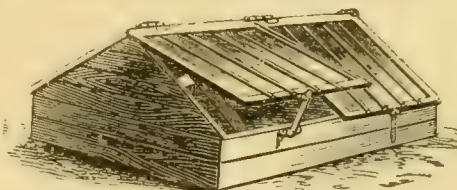
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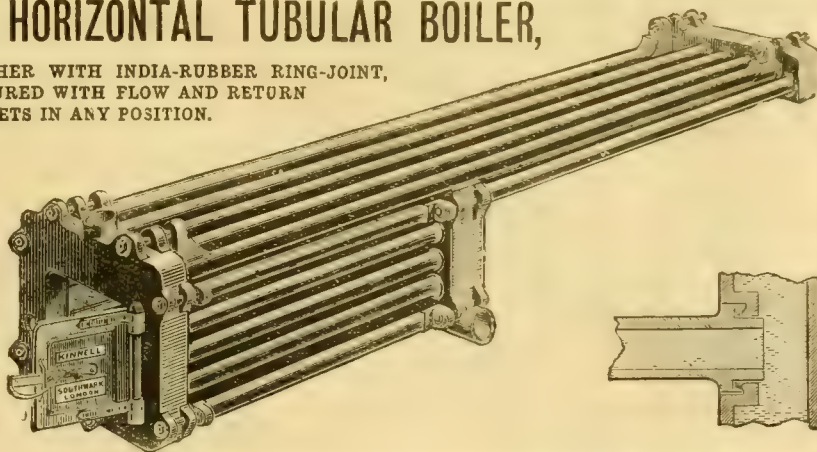
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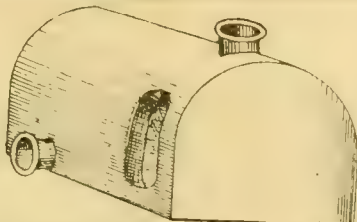
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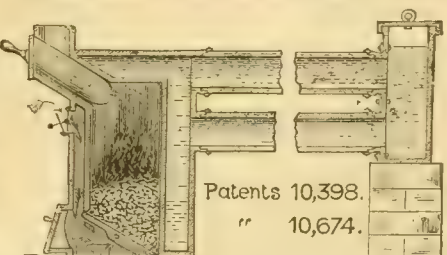
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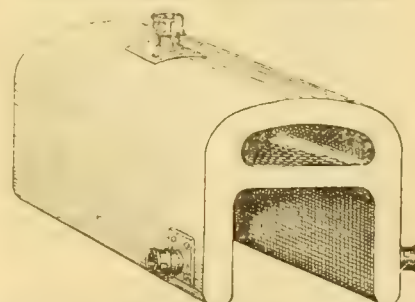


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"FRICI DOMO" Made of prepared Hair and Wool, a perfect protection to all Plants and Blooms. Cheaper than any kind of mat, and will last for years. To be had from all Nurserymen and Seedsmen.

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Paints and Varnishes at Low Prices. Flooring, 5/9 per square; Matching, 4/9; 2x4, at 4d. per foot run; 2x7 at 1d. Horticultural Work of all descriptions, Ironmongery, &c. CATALOGUES Free. THE CHEAP WOOD COMPANY, 72, BISHOPSGATE STREET WITHIN, LONDON, E.C.

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FOR
WINTER GARDENS AND
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AS AT EARL'S COURT FERNERY CASCADES, by us.
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AS BY US AT IMPERIAL INSTITUTE GARDENS.
VASES,
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IN STONE-LIKE AND RED
TERRA COTTA.
Durability Guaranteed.

ESTABLISHED 1851.

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BIRKBECK BUILDING SOCIETY.

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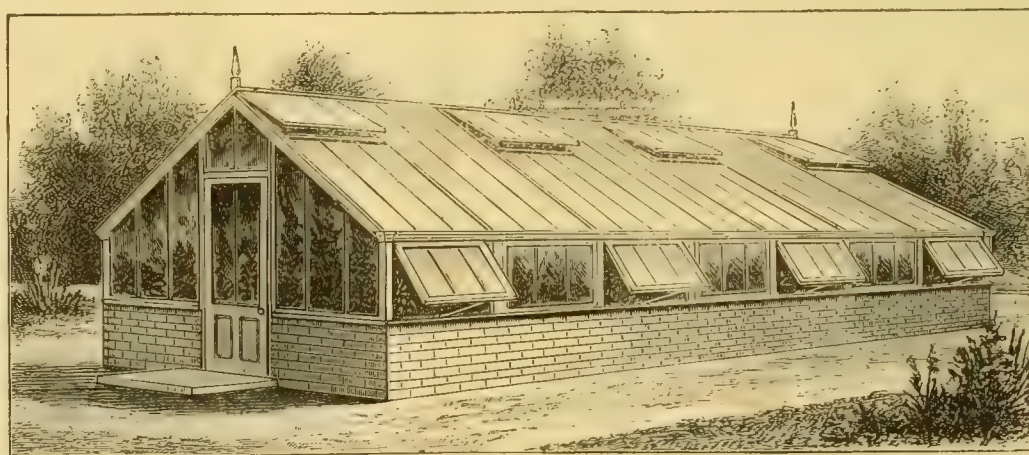
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No. 364.—VOL. XIV. {THIRD SERIES.}

SATURDAY, DECEMBER 16, 1893.

{Regt. as a Newspaper.} PRICE 3d. POST-FREE, 2½d.

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MESSRS. PROTHEROE AND MORRIS will
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MONDAY, Dec. 18—200 Dwarf Roses, 30 lots of herbaceous
plants, 150 lots of hardy border plants
and bulbs, and 300 lots of Dutch Bulbs.
WEDNESDAY, Dec. 20—500 lots of Dutch Bulbs.
FRIDAY, Dec. 22—500 lots of Dutch Bulbs.
On view mornings of Sale, and Catalogues had.

Thursday Next.

11,638 **LILIUM AURATUM**.
1,420 " **SPECIOSUM ALBUM**.
1,800 " **RUBRUM**.
190 " **TIGRINUM**.
240 " **ELEGANS ORANGE**.

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MENTAL PALMS and FERNS, Double African TUBE-
ROSES, GLADIOLUS in variety, SPIRÆA COMPACTA,
3,000 BEGONIAS, 2,000 GLOXINIAS, Yellow, White,
Rose, Red, and Mixed; 200 AZALEA MOLLIS; HERBA-
CEOUS PLANTS in variety; 200 Dwarf ROSES, 200
Standard ROSES, and 50 lots of STOVE and GREEN-
HOUSE FERNS and PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will
SELL the above by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY
NEXT, December 21, at 12 o'clock.
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Friday Next.

MESSRS. PROTHEROE AND MORRIS will
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and 68, Cheapside, London, E.C., on FRIDAY NEXT, Decem-
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a grand importation of the famous Sanderian type of

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THE TRUE MONTANUM FORM,

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SPIRÆAS, LILY OF THE VALLEY Crowns and Clumps,
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LILIUMS in variety, and an extensive Collection of Hardy
BULBS.

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AUCTION, at his Great Rooms, 38, King Street, Covent
Garden, on MONDAY NEXT, December 18, at half-past
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Wednesday Next.

Choice named Standard and Dwarf ROSES, Collection of
BORDER PLANTS, Hardy Ornamental SHRUBS, FRUIT
TREES, &c., LILY OF THE VALLEY, Crowns and
Clumps; SPIRÆA JAPONICA and S. PALMATA, a fine
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lots of DUTCH BULBS and LILIUMS, AZALEAS, BE-
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Street, Covent Garden, on WEDNESDAY NEXT, December 20,
at half-past 12 o'clock precisely.

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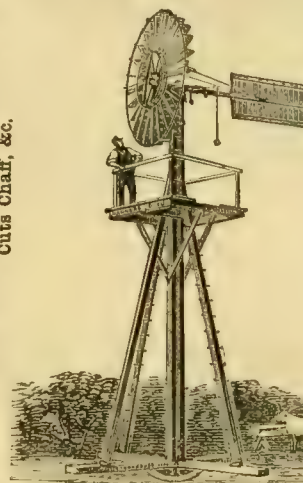
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ONE OF THESE MILLS WAS FRAGMENTED AT THE ROYAL AGRICULTURAL SHOW, CHESTER.

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May 27, 1893, The Dell, Englefield Green, Surrey.

ROBERT WARNER & Co., Engineers, 27, Jewin Crescent, E.C.

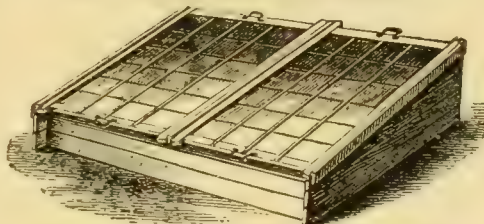
Dear Sirs,—It affords me much pleasure to inform you the 25 ft. Annual Sail Windmill, on 40 feet timbers, working a set of 3 in. x 9 in. stroke treble pumps, that you fixed here for Baron Schröder, is giving very great satisfaction, pumping the water through 4,224 feet of pipe, to a vertical height of about 80 feet. I must also express my thorough appreciation of the manner in which the whole of the work has been so successfully carried out.—Yours faithfully,

H. BALLANTINE, Head Gardener to Baron Schröder. We have a similar Mill and set of Pumps in hand for Lord Northbourne.

NUMEROUS OTHER TESTIMONIALS ON APPLICATION TO
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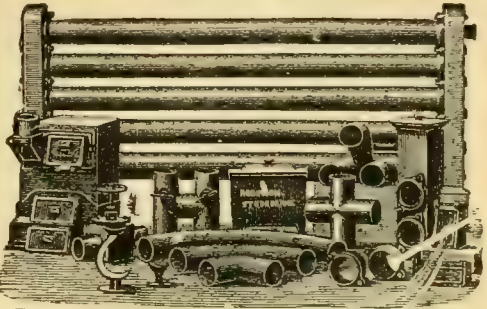
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1-light,	4 ft. by 6 ft...	CASH	2	0	0
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We have great pleasure in announcing that we have acquired from Mr. T. H. Spaulding, New Jersey, U.S.A., the sole right of distributing his new set for 1894 in Europe. The plants arrived too late to produce exhibition blooms this season, and we were therefore unable to show them for Certificates, but the flowers we have had are wonderfully promising and fully bear out the raiser's descriptions. Mr. Spaulding tells us that this is the finest set he has ever sent out, which, coupled with his position as the first raiser in the States, will be ample proof of the value of these novelties. We have a good stock in hand, and shall therefore be able to supply strong healthy plants *struck cool*, which will bear full-sized blooms the first season. Catalogue containing these and the cream of all the other novelties, is now ready, free on application.

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Palms! Palms!! Palms!!!

J. W. SILVER, F.R.H.S., begs to call attention to his immense Stock of the above, in all sizes and best leading kinds, and offers, in large and well established clean and healthy plants, Phoenix rupicola, Kentias Belmoriana, Fosteriana, and australis; Cocos Weddelliana, Geonoma gracilis, Corypha australis, Latania borbonica, Pteleosperma Cunninghamii, Areca Baureli, and Seaforthia elegans, in 3-inch pots, 4s. per dozen; in 5-inch pots, from 12s. to 21s. per dozen. Catalogues and Packing free. Most extraordinary value.—J. W. SILVER, F.R.H.S., Nurseryman, Seed, Bulb, and Plant Merchant, and Horticultural Sundriesman, Streatham and Norbury Nurseries, S.W.

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" 5 to 6 feet, at 42s. per dozen.
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Awarded 5 Medals and 50 First-class Certificates for New Varieties by the National, Royal Horticultural, and other Chrysanthemum Societies, 1893.

SPECIAL ILLUSTRATED and DESCRIPTIVE LIST OF LATEST

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INCURVED.—Lord Rosebery, 5/-; Mrs. John Gardener, 5/-; Robert Petfield, 7/6; and Sir Titus, 3/6.

ANEMONE.—John Bunyan, Queen Elizabeth, Sir Walter Raleigh, and W. W. Astor, 3/6 each.

ORDERS BOOKED and EXECUTED IN ROTATION in MARCH.

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FRUIT TREES AND ROSES.

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Send for our NEW DESCRIPTIVE and PRICED CATALOGUE OF FRUIT TREES, ROSES, CONIFERS, SHRUBS, FOREST TREES, CLIMBERS, HERBACEOUS PLANTS, &c. A large Stock grown.

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ESTABLISHED 1810. AREA 150 ACRES.

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ROBERT NEAL, The Nurseries, Trinity Road, Wandsworth, S.W., begs to offer an extensive stock of FOREST and ORNAMENTAL TREES, SHRUBS, ROSES, GRAPE VINES, FRUIT TREES, CLIMBING PLANTS, &c., which being grown in the neighbourhood of London are especially suitable for Town Planting. Also a large stock of extra fine SEAKALE and RHUBARB, for forcing. CATALOGUES free on application.

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WE CAN STRONGLY RECOMMEND OUR NEW APPLE
"NEWTON WONDER,"

as the best late Apple in cultivation; fruit keeps till June; large, well-coloured, perfect form, splendid cooking quality; tree a vigorous grower, free from canker, and very productive.

Awarded First-class Certificate, R.H.S., Dec. 1887.

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" " " " " " 6 to 8 feet	7s. 6d.	80s.
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Portugal, bushy, 4 to 5 feet	2s. 6d.	24s.
PICEA NORDMANNIANA, 4 to 5 feet	5s. 0d.	50s.
" " " " " " 5 to 6 feet	7s. 6d.	84s.
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The above are all well rooted, and in fine condition for removing.

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RHODODENDRONS, Greenhouse, Bush, and Pyramid shaped, all sizes up to 6 feet.

STOVE & GREENHOUSE CLIMBERS, All sizes up to 12 feet.

CLIVEAS, magnificent Specimens.

And all kinds of

FOLIAGE and FLOWERING STOVE and GREENHOUSE PLANTS in all sizes.

PLANTS LENT ON HIRE FOR DECORATION. ESTIMATES FREE.

List of sorts, sizes, & prices forwarded on application.

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NEW WHITE CHRYSANTHEMUM

MDLLE. THÉRÈSE REY.

Head-quarters for this truly superb variety. Strong cuttings now ready, or orders booked for plants. I have a splendid stock of this, the best white in cultivation, bar none.

Prices, see CATALOGUE.

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Head-quarters for this sensational novelty. A sport from Vivian Morel. Colour rich rosy-bronze. An immense stock of splendid healthy cuttings now ready. Prices, see CATALOGUE.

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Thousands of strong, healthy cuttings of these rare acquisitions now ready. Prices, see CATALOGUE.

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YELLOW SELBORNE.

The entire stock of several thousand plants has been placed in my hand by the raisers, for distribution. Colour, a beautiful Daffodil-yellow. A true fixed sport from the popular variety, Lady Selborne. Prices, wholesale or retail, on application.

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H. SHOESMITH. LA BELLE D'ALGER
EDITH ROWBOTTOM. MADAME CAMBON.

Also a complete Collection of Monsieur CALVAT'S unsurpassed Novelties, including the beautiful Incurred Japanese Louise, &c. See CATALOGUE.

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CHRYSANTHEMUM NURSERIES,
LILFORD ROAD, CAMBERWELL,
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CANT'S WORLD-RENOUNDED ROSES.

Write for Sample dozen, my selection, good sorts, fine bushy plants, delivered for 9s., cash with order.

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BENJAMIN R. CANT,

ROSE GROWER,
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ESTABLISHED 128 YEARS.

FRUIT TREES, ROSES IN POTS, VINES,

OF ALL THE FINEST VARIETIES,
NEW AND OLD.

HUGH LOW & CO.,

BUSH HILL NURSERY,
ENFIELD.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 16, 1893.

THE RECENT STORM IN SCOTLAND.

THE storm of the night of the 17th and morning of the 18th November last, will be long remembered in the north of Scotland as the most destructive of the century. The storm of December, 1879, which brought down the Tay Bridge, did comparatively little damage in the north, the storm-centre passing more over the midland Scotch counties, while the north appeared only to feel the force of the fringe of the storm. The recent storm was accompanied generally by heavy rain, and with sleet and snow on the higher districts. The ground being sodden with wet, while the tops of Scotch Firs were weighted by wet and snow, the conditions were the worst possible for resisting the impact of a destructive gale. All over the woods the storm has left traces of its destructive force; but it was only in places that the destruction was complete or nearly so. Where the wind swept across a great extent of moorland country, and on nearing the coast came down a glen, or strath, or between two hills or ridges, the destructive force of the wind was terrific. In some instances it laid low acres of trees on a hillside; in others it cut a track 80 to 100 yards wide through a wood, levelling nearly everything before it. At Clynelish, Gordonbush, Uppat, Ben Braggie, The Mound, and some other places in Sutherlandshire, fine old Scotch Fir woods have been uprooted and practically wiped out. The wreck in these storm-tracks must be seen to form an adequate idea of the damage done. Most of the trees have brought up tons of soil and roots. Hundreds of trees from 2 to 2½ feet diameter, with 30 to 40 feet clear stem, and from 60 to 80 feet high, have been toppled over like houses of cards. Some of the old trees have snapped off at the surface of the soil, others have broken halfway up—the bare stems standing like broken masts against the sky. In some places the trees are lying three and four deep.

Round Uppat House, about 3 miles from Dunrobin, there is a complete chaos of wrecked timber. Immediately round Dunrobin Castle the damage among the old trees is comparatively slight. One of the storm tracks passed through a fine plantation between the Castle and Flagstaff-lodge. A bolt, or gust, had concentrated its force on a space of 80 to 100 yards wide on the north side of the plantation, clearing a way for itself right through to the south side, a wreck of broken and uprooted trees.

The total ruin left in the track of the storm where the wind had concentrated its force, in places a considerable distance apart, makes one feel thankful that these destructive gusts were

SEEDLING and BEDDED SHRUBS, &c.—

Abies Douglasii, 1-yr., 20s. per 1000; 6 to 9 in., 40s. per 1000; Black and Spruce Fir, transpl., 8 in., 40s. per 1000; Ampelopsis Veitchii, 8 to 10 in., 60s. per 1000; Box Tree, 6 in., 60s. per 1000; Cup. macrocarpa, 4 in., 30s. per 1000; Cup. erecta, 8 in., 40s. per 1000; C. gracilis, 8 to 9 in., 7s. per 100; C. Allionii, 6 in., 8s. per 100; Cotoneaster microphylla, 9 to 10 in., 30s. per 1000; Dracæna indivisa, 6 in., 6s. per 100; Escallonia macrantha, 9 in., 10s. per 100; Eulalia japonica, 1-yr., 4s. per 100; Pampas grass, 1-yr., 30s. per 1000; Retinospora squarrosa, 6 in., 30s. per 1000; R. plumosa, 6 in., 30s. per 1000; Rhododendron ponticum, 3-yr., 25s. per 1000; 4 to 6 in., 40s. do.; Thuja Lobbi, 12 to 18 in., 30s. per 1000; T. dolabrata, 8 in., 8s. per 100; Yew, English, 4-yr., 30s. per 1000; Yucca gloriosa, 1-yr., 6s. per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

ANTHONY WATERER respectfully invites from intending Planters an inspection of the following well-grown and finely-rooted EVERGREENS:—

ABIES DOUGLASII GLAUCOA, 5, 6, 7, and 8 feet.
.. HOOKERIANA (Pattoniana), 4, 5, and 6 feet.
.. PUNGENS GLAUCOA (Colorado Blue Spruce), ARGENTEA { 3, 4, 5, and 6 feet.
CEDRUS ATLANTICA GLAUCOA, 4, 5, 6, and 7 feet.
CEDRUS OF LEBANON, 5, 6, 7, 8 to 10 feet.
GOLDEN CHINESE JUNIPER, 4, 5, 6, 8, and 10 feet.
GOLDEN YEW, Seedlings, 4, 5, 6, and 7 feet.
PICEA CONCOLOR

.. VIOLACEA { 4, 5, 6, 7, and 8 feet.

.. LASIOCARPA { 5, 6, to 8 feet.

.. MAGNIFICA { 3, 4, 5, 6, to 8 feet.
PINUS AUSTRIACA {
.. LARICIO {

THUOPSIS BOREALIS { 5 to 8 feet.
.. DOLABRATA {

HOLLIES, GREEN, Common, up to 10 and 12 feet.

.. HODGINS { up to 10 feet.

.. LAURIFOLIA {

.. MYRTIFOLIA {

.. GOLDEN QUEEN.

.. SILVER QUEEN.

.. WATERER'S, and many other variegated kinds, 6 to 10 feet.

.. PERRY'S WEEPING { with straight stems and

.. GOLDEN WEEPING { fine heads.

Knap Hill Nursery, Woking, Surrey.

FRUIT TREES.

To MARKET and PRIVATE GROWERS.

We hold an extensive Stock of all kinds of the above, in first-rate quality and at reasonable prices. Intending Planters would do well to send for Descriptive Catalogue free on application.

S. SPOONER & SONS,
HOUNSLOW NURSERIES, MIDDLESEX.

partial, and that after all things the damage done might have been worse.

Although there are wide gaps in the woods in some localities, yet so much of the wood has been left, that the appearance of the landscape will be but little altered. From Dunrobin Castle, fortunately, little damage is seen. A good many old hard-wood trees are down all through the woods in single trees, and groups of from two or three to a dozen. But it is noticeable that the younger hard-wood trees, planted within the last forty or fifty years, have suffered comparatively little damage. The work of getting out the fallen timber amidst such masses of roots, and apparently inextricable confusion, must be both tedious and laborious, and the enormous quantity of timber down at once will be a difficult problem to deal with. Fortunately in many cases the trees have roots enough to keep the timber sound for probably two or three years, which, will give time to contractors to clear the ground and dispose of the timber in the markets.

Where large areas of full-grown standing timber are in question, probably but little can be done to minimise the risk of damage by destructive gales. But in the case of young trees, the lesson taught by the recent hurricane may be turned to good account. Young trees, hard-wood particularly, should be gone over every year or two, and judiciously pruned to concentrate the energies of the tree into forming a sturdy well-rooted trunk, with a moderate spread of branches. Competing leaders should be thinned-out to the best-placed one. Where trees in good soil are growing too quickly to height, the leader may sometimes be stopped with advantage for a year or two to bring circumference of stem, height, and root-anchorage more into proportion to each other. Where young trees are properly started in this way, they usually give little trouble after they attain some size, except thinning where standing too closely together.

Old and valued trees, past their prime and declining in vigour and root-hold, prized perhaps for their ancestral associations, and having boles of perhaps a hundred years' growth, might have their heads carefully reduced where top-heavy. This might be done by shortening long and heavy branches, and judiciously thinning the heads without giving them the appearance of having been pollarded. Better a moderate head, on a fine old trunk, than to court disaster by carrying too much top-weight. A noticeable feature of the recent storm was the comparatively little damage that was done to hedgerow and other trees growing singly, and without shelter by road-sides and round fields, although, in some cases, right in the track of the storm. These trees were mostly hard-wood, and were no doubt, from their exposure, better rooted in the soil and prepared to meet the storm than their fellows in the woods and plantations who had been more crowded and dependent upon each other for mutual shelter.

Timely thinning in the case of coniferous woods and plantations would greatly help the development of trunk and roots of trees to be left for a crop; the cutting of timber when ripe, where grown for estate and commercial purposes; the replanting of young trees more or less as occasion may require each season, so as to have a succession of trees coming on to take their part in the economy of the estate, and the amenity of the landscape, would tend to reduce the risk of losses by great storms. It was sound advice the old Scotch laird gave to

his son:—"Be aye stickin' in a tree, Jock, it'll be growin' when ye're sleepin'." *D. Melville, Dunrobin Castle Gardens.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM NIOBE.

THIS hybrid *Cypripedium* is one of the most beautiful that has been raised, although it may be eclipsed in the future. Hybrid *Cypripediums* are raised in large numbers, but none so fine in form or colour as this acquisition of Mr. Seden's, of Messrs. Veitch & Sons. I recently noticed a plant in bloom in Mr. Wigan's collection at East Sheen. *C. Niobe* first flowered in 1889, and the seed was sown in 1884, five years therefore elapsing before it bloomed. It is the result of *C. Spicerianum* crossed with *C. Fairieanum*, the latter being the pollen-parent. This was a happy selection of parents, as *C. Fairieanum* is a beautiful species, and also *C. Spicerianum*, which is more vigorous. The character of the pollen-parent is, fortunately, well reproduced in the offspring, the petals having the same characteristic curl. The dorsal sepal is large, fully 2 inches across, the rich purple central band reminding one of *C. Spicerianum*, and there are rich stripes or veins of purple, the margin pure white at the upper portion. The lip is pale green, brownish-purple in front. Fortunately, the plant, as far as I have seen it, is free and strong. *V.*

THE ORCHIDS AT HIGHBURY, BIRMINGHAM.

When the Right Hon. Joseph Chamberlain, M.P., reached home after his visit to the United States, a rich display of bloom awaited him on his Orchids, which he never ceases to take great interest in. On the occasion of a recent visit paid to Highbury, there was a bright display of *Cattleya maxima*, *C. labiata* varieties, and others, including *C. aurea*. In the *Cattleya*-house, in which there is a general collection of *Cattleyas* and *Lælias*, several plants of *C. Trianae* and *C. Percivaliana* were in flower. In the next house, which is from 5° to 6° warmer, were *Cattleyas* *Rex* and *El Dorado*, with *Lælia elegans*, and hybrids from these and other species, as well as a number of seedling *Cattleyas* raised here, but which have not reached blooming age.

In another house was a small collection of East Indian Orchids and *Cypripediums*, a fine batch of *Odontoglossum Roezlii*, which grows nowhere so well as in this house. Plants of *Angraecum sesquipedale*, showing fine spikes at that early date; and *A. Sanderianum* and *A. ciliatum*, also showing spikes freely. *Cypripedium Marshallianum* was also showing flower-growths, and some of the type of *C. Sedenii* were in flower. *Phajus tuberosus* is a plant that is well done here.

The show-house was rich with flowering Orchids placed amongst healthy-looking foliage plants. There were *Cattleya labiata* in variety, *Calanthes*, *Barkerias*, extra fine; *Cattleya aurea*, *C. Bowringiana*, *C. maxima*, and others; and in the cool house adjoining were *Odontoglossums*, *Anguloas*, *Oncidiums*, *Adas*, *Cælogynes*, and other Orchids; and in flower, *Oncidium tigrinum*, *O. Forbesii*, *O. grande*, *O. Alexandræ*, in great variety; *O. Andersonianum*, and others; and a good lot of *Sophranites grandiflora* in suspended pans.

In a house of intermediate temperature was noted a superb batch of *Miltonia vexillaria*, plants of *O. Phalaenopsis*, *O. grande*, and *Lycaste Skinneri*, a quantity of each all showing strongly and freely for bloom. The plants of *Madevallia tovarensis* were masses of blossoms; and others especially noticeable were *Ornithidium Sophranites*, which flowers freely when allowed to ramble away from the compost. An adjoining house is filled with *Odontoglossums*, and one at the end of the corridor with *Dendrobiums*, which have thriven exceedingly. In this house were many seedlings raised at Highbury as yet unbloomed, the oldest of which are some young plants of *Dendrobium formosum giganteum* × *D. Lowii*.

One house is devoted to *Phalaenopsis*, the plants in excellent condition, and showing freely for flower; with these were species of *Dendrobium*, which require a little warmth during the winter.

Amongst Mexican Orchids in another house is a large number of plants, many of them fine specimens of *Lælia anceps*, and nearly one hundred spikes of the *L. anceps alba* varieties will soon be in bloom. Amongst seedling Orchids remarked in this house were some the result of crossing *Cattleya Harrisoni* with *Sophranites grandiflora*, and *Sobralia macrantha* with *Cattleya gigas*, another singular and interesting cross.

Two other Orchid-houses have been recently added, in which are a number of *Cattleyas*, and several fine basketfuls of *C. gigas* in variety, *C. Warneri*, *Lælia autumnalis* and *albida*.

It is necessary at Highbury to have large quantities of plants in flower at all times, as the demand for Orchid blooms for indoor decoration is a large one. The Orchids of all kinds have made much progress under Mr. Barberry's excellent management. *W. D.*

CATTELEYA LABIATA VERA.

The various importations of the autumn-flowering *Cattleya labiata* have brought a large number of varieties which far exceed in beauty the old plant of that name. Perhaps one of the finest in the country is now flowering in the Rev. R. Kinleside's collection, Sunbury House, Tunbridge Wells. The plant bears five flowers, each 8½ inches across; the labellum is 2½ inches wide, and of that rich crimson-lake colour seen in the best forms of *C. labiata* *Warneri*. *Cypripedium* × *Morganii*, with three fine spikes; *C. × Niobe*, *C. × Leeanum superbum*, and other rare things are also in flower in the same collection. *J. O'B.*

CYPRIPEDIUM × VENUSTO-SPICERIANUM.

Although not a showy variety, a good form of this hybrid is very neat and pretty. An exceptionally good one, with broad, nearly white petals, thickly spotted with purple, is in flower just now in Mr. H. A. Tracy's Nursery, Amyand Park Road, Twickenham. The same cross is called in some gardens *C. × polystigmaticum*.

CYPRIPEDIUM × IANTHE (HARRISIANUM ♀, VENUSTUM ♂).

For the large size of its flowers, this stately flower stands out prominently among hybrids; the flowers are also of good substance, and the plant a sturdy grower. An excellent example of it, bearing a two-flowered inflorescence, is in flower in the collection of Henry Little, Esq., The Barons, St. Margaret's, where the pretty *C. × Swinburnei*, and a very bright hybrid between *C. Hookeri* and *C. barbatum grandiflorum*, and other rare plants are also in bloom.

ZYGOPETALUM MACKAYII.

The old form of this fine Orchid seems yet to be the best, most of those recently imported being very inferior to it, and some of them scarcely worthy to bear the name. A pair of large specimens of the true old plant, furnished with many spikes of its fragrant and showy flowers, are fine objects in the arrangement of plants in flower put up in the Orchid-house by Mr. J. Dinsmore, the gardener at the Cedars, Harrow Weald, the residence of T. F. Blackwell, Esq. *J. O'B.*

KEW NOTES.

LONICERA HILDEBRANDIANA.—This is a new Honeysuckle which was discovered in Upper Burma by General Collett about five years ago, and has lately been introduced by means of seeds to Kew, where there is now a batch of young seedlings. It was described and figured in the *Journal of the Linnean Society*, vol. xxviii. (1891), along with *Rosa gigantea* from the same region. The Honeysuckle has flowers 7 inches long, and large ovate glossy-green leaves. General Collett says of it: "*L. Hildebrandiana* is, so far as I am aware, a rare plant; though I have been told that the flowers of this

species are much used in decorating the temples at Pindiah, near Pwehla, I found it only in one locality, at a season when unfortunately it was almost past flowering . . . It is a conspicuous shrub, with large, dark, glossy leaves and fine crimson flowers, 7 inches long, and by far the largest of any known species of Honeysuckle. It is much to be desired that seeds of this beautiful shrub may yet be secured, and the plant raised for the adornment of our gardens." The flowering of this plant is anticipated with considerable interest.

MUSA HILLII.

This is an Australian species of *Musa*, which was described by Baron Sir F. von Mueller, in his *Fragmenta*, ix., 169, 190. Seeds of it were received at Kew in 1889, and from these the plant was raised which is now flowering for the first time in the Palm-house. It belongs to the *M. sapientum* group, and has a stem 12 feet high by 8 inches in diameter, coloured brown. Mr. Baker gives the dimensions of the stem as 30 feet in height, and $1\frac{1}{2}$ feet in diameter. The leaves are 8 feet long, and $1\frac{1}{2}$ feet wide. The peduncle is thick, erect, a yard long, with whorls of white flowers enclosed in green ovate bracts; the fruits are small and ovoid, and are said to be not edible. The species is wild on the banks of the Daintree river in Queensland. A figure of the Kew plant will be published in the *Botanical Magazine*.

AGAVE POTATORUM.

A large plant of this *Agave* is now pushing up a stout flower-spike at Kew. It is an exceptionally fine specimen, measuring 8 feet in diameter and 5 feet from the collar to the top of the leaves. There are about fifty leaves, each $3\frac{1}{2}$ feet long and a foot wide, narrowed to 6 inches at the base, where it thickens to fully 5 inches; the apex is narrowed to a long horny spine-tipped point, and the margins are armed with hooked spines. This exceeds considerably the dimensions of this species as described by Mr. Baker in his *Amaryllideæ*, where it is stated that *A. potatorum* is a native of Mexico, and was introduced into cultivation about 1830. Possibly this is the first plant to flower in cultivation. It has lately been transferred to the Palm-house, where its spike, which may be 20 feet high, will have room to develop.

OSTEOMELES ANTHYLLIDIFOLIA.

This interesting shrub, which has lately been noted several times in these pages, and is offered in the catalogue of M. Lemoine of Nancy, was found in Upper Burma by General Collett, as is shown by the following note, which follows that on the big Honeysuckle above quoted:—"A very common and conspicuous bush, on certain parts of the plateau, is the curious *Osteomeles anthyllidifolia*, a shrub nearly allied to *Pyrus*, with the habit of the Blackthorn. Thick bushes of it are covered in spring with small, pretty, white flowers, contrasting well with the green, finely-pinnate leaves. It is much browsed by cattle in the neighbourhood of villages, and then assumes a stunted, thick-set habit, reminding one, from a distance, of *Furze* bushes on an English common. Although spread over the whole plateau of the Southern Shan States, it is only common in particular localities, where it sometimes forms extensive thickets." From this it would appear that this shrub is likely to have a value as a hedge-plant in the warmer temperate regions, and also may be worth growing for fodder.

GUEVINA AVELLANA.

This is the Chilean Nut which was introduced in 1878 by Mr. W. Bull, and recommended as an "evergreen tree, 30 feet high, bearing globose edible drupes, enclosing Almond-like seeds, which are eaten in Chili and Peru." It was figured in the *Gardeners' Chronicle* in 1884, vol. xxii., p. 41, from a specimen cultivated out-of-doors in the garden of Mr. Bolitho, at Greenway, near Dartmouth, where it proved to be quite hardy. A leaf from the same plant has lately been sent to Kew by Mr. R. V. Sherring, who informs me that it is now 7 feet high, and perfectly

healthy. The leaves are glossy-green, bipinnate, the pinnae leathery, ovate, toothed, and the stalks clothed with a rusty tomentum. When small, the plant produces only pinnate leaves. It is also known in gardens as *Quadria heterophylla*. There is only this one species of *Guevina*, which is a Protead, and closely allied to the tropical genus *Rhopala*. Gay, in his *Flora Chilensis*, says that this plant is common in South Chili from 35° to 43° latitude, and that its edible fruits are collected and sent to the north and Peru. The Nuts are called *Avellano* by the Spaniards. This is a plant which might be grown for its ornamental foliage in the warmer parts of these islands, whilst in such places as Florida, the South of France, &c., its cultivation might possibly be made a source of profit. W. W.

FORESTRY.

BRITISH FORESTRY: THINNING.

THE article in a recent number of the *Gardeners' Chronicle*, by Mr. A. C. Forbes, on thinning plantations, and another on the same topic, by Mr. Thomson, of Clovenfords, in *The Timber Trades' Journal*, are useful as showing the cleavage, in British Forestry practice, that has got to be closed up before we can have anything worthy of the name of a "system" in this country. Mr. W. T. Thiselton Dyer, of Kew, in his evidence before the "Select Committee on Forestry" a few years since, lamented this cleavage, and referred to the "diametrical" difference of opinion on the same points between Sir Charles Strickland and Mr. Michie in the *Gardeners' Chronicle* some years back, as an example, and as showing in what "a very unsatisfactory state woodland practice was in this country." See Reports, August 5, 1885.

Mr. Forbes, it is easy to see, leans to the continental school, which is the best. Briefly, this school may be said to advocate "close rank" in young plantations till they acquire age, when "close canopy" is the term used to denote the same thing. The object of this close system of growing timber is to shut out light and air from the trunks of the trees, and from the soil, thereby preventing fluctuations of temperature and moisture, excessive evaporation, &c., with the result that the trees, while preserving a sufficient head of branches or leaf-surface to sustain growth, naturally begin to shed their bottom branches at an early stage and continue to do so till the end, when the product is a crop of long, straight trunks free from knots long since grown over. Dr. Schlich, of Cooper's Hill, belongs to this school. So, I believe, does Dr. Somerville, lecturer on forestry at Durham University; and so does Col. Bailey, lecturer to the forestry classes at Edinburgh, and who has adopted *Schlich's Manual* as his standard. Now, if any of your readers interested in this subject will compare *Schlich's* quantities of trees to the acre, especially in the young stage, with the "orthodox" rule-of-thumb tables of British authors, they will be struck with the difference; for the Continental woods by comparison with ours are simply crowded to excess. So particular are they, says Dr. Somerville, that rather than break the continuity of shade and close rank in young plantations, when removing a tree they will ring it, and let it die out. Mr. William Thomson condemns this mode of culture, if we understand him correctly. He travels often, he states, for hundreds of miles in Perth, Inverness, and Ross-shires, and is forced to the conclusion that in the journey he does not pass half-a-dozen well-managed young plantations (a wide term). The mismanagement, he explains, consists in keeping out the light and air by not thinning, from which cause the trees lose their lower branches, exactly the aim of the continental forester within correct limits, and the object now taught by Colonel Bailey to young Scotch foresters. Mr. Thomson assumes that, in the cases he cites, when thinning is done, the trees will suffer after being so coddled, but there is not the least fear of that if the thinning is so conducted that close rank is still maintained.

I have several times been over a good portion of the ground referred to by Mr. Thomson, and my impression was that the Fir woods were thinned, as a rule, too severely, and that the timber was rough in consequence.

Nothing teaches a forester his business like having to sell his productions in the open market. In not such a very long period I have sold by tender, private bargain, and by auction between thirty and forty thousand pounds' worth of home-grown timber for all sorts of purposes, and I have learned by experience what "quality" in timber means, and where the value comes in. It is a constant remark of timber merchants, who know nothing of forestry, that, with the exception of Larch, home-grown timber is either too short in the trunk or too rough, or both, and I am often asked why the trees are not clean and straight, "like the foreign stuff." The difference in the price tells its own tale. You can always get a very much higher price for a good plantation-grown Oak or Ash, for example, than you can for a park or hedge-row tree of the same dimensions, because in the latter the trunk is short and rough, and perhaps more than half the bulk is in the wide-spreading top of limbs and branches—of little more than cordwood value. So with Spruce and Fir timber of any kind. Your customer will give a good deal per foot more to you if you can show him a wood where all the lower branches have long since perished for want of light and air, and the trees have nothing but a "bonnet" at their tops. The least valuable plantations I have seen of Spruce or Scotch Fir and Douglas Fir were what have hitherto been considered "properly thinned" examples, and their low value was due to the fact that they contained too few trees to the acre, and the trees were too rough through being furnished with branches down to the ground (thanks to the "light-and-air" theory), and which ought long before to have been smothered off by close rank. A foreign-grown Spruce and a home-grown one—say, from a Scotch wood well thinned—make clear at once the difference in the two systems of culture. The Scotch Spruce tapers rapidly, and is extremely rough in knots from end to end—a bad fault. The reason of both is too thin planting, and too free thinning afterwards, causing an over production of side branches too far down the tree. The foreign Spruce pole, on the other hand, from woods where they appear to be absolutely crushed, is smooth externally, as if, almost, it had been planed, and is so uniform in girth, that in a pole—say, 40 feet long and quarter girthing perhaps 7 inches in the middle—the run-off from base to small end will often not exceed $1\frac{1}{2}$ inch in the diameter. The Scotch tree will contain the most timber—not much more, but of less value; but the foreign pole more than gains this in quality, and the decidedly greater number of trees to the acre makes up all differences and more.

If I were going to give a young forester a lesson on timber-growing, I would first send him to Grimsby or Liverpool timber-wharves, and next set him to make a bonfire of most of the writings of our British authors on the subject. Mr. Thomson, like a good many others, implies that foresters are handicapped for want of sufficient means, while others say they are not allowed to do this and that by their employers; but I feel sure that, however much to blame landlords may be, they are not to blame for the methods of culture adopted by foresters who, for the most part, have a free hand in that respect, their employers entirely trusting them. The proof, if any were wanted, exists in the teachings of foresters, which show what they would do if they could, and what they do practise when allowed, with the worst results. S., *The Woods*.

WELLS PALACE.

THE city of Wells is beautifully situated on the southern declivity of the Mendip Hills, and contains within its precincts the most magnificent and extensive examples of early English architecture to be found in the west of England.

The Palace, the official residence of the Bishop of Bath and Wells, adjoins the cathedral, and forms one of the principal attractions of the city. It was originally built by Joceline de Welles between 1205 and 1244 A.D.

It is surrounded by a strong embattled wall, having bastions and turrets at intervals, with the usual alure at the top of the wall behind the parapet, in which there are embrasures and loopholes alternately. A wide moat, said to be the most perfect in England, supplied from the never-failing springs which rise in the gardens, encompasses the wall, and imparts to the whole the appearance of an ancient baronial residence. The entrance is on the north side, over a fixed wooden bridge; the gate is quaint and massive. The grooves of the portcullis are still intact, with a modern portcullis in them. The present gatehouse is in the plain style of the fourteenth century, with flanking turrets, plain and massive, with a groined vault over the archway. The apartments on either side of the gateway are occupied by the head gardener, Mr. Payne. Beyond the gateway is the courtyard. It is here that the flower-shows are held, and where many well-known horticulturists of the West meet. It was interesting to watch the bishop, a venerable gentleman, now in his eighty-fifth year, inspect the various exhibits, evidently with the keen interest of the horticulturist, and to note the good feeling between master and man which entire confidence and long faithful service engender.

The courtyard contains many fine old forest trees, which partly conceal the ruins of the great hall, the windows and archways of which still retain traces of their former grandeur; it measured 156 by 66 feet, and had a roof similar to that of Westminster Hall. This fine hall is said to have been stripped of its timber, lead, and whatever else of value it contained, by Sir John Gates, who was for a short period in possession. In the turbulent times of the Commonwealth, the palace experienced the fate of many other fine buildings at that period. Upon the restoration of Charles the Second, Bishop Piers found the palace roofless, and otherwise despoiled.

The ground floors are in their original state. There is a fine historic chapel, an extensive library, and picture gallery, the latter modernised, and containing many portraits of bishops, prominent among them being Bishops Laud and Ken (author of the morning and evening hymns), and Thomas Wolsey, in his cardinal's robes, a copy of the celebrated one in Christ Church, Oxford.

On the lawn, south of the great hall, are many trees and shrubs of more than ordinary interest. *Ailanthus glandulosa* is a giant, with a trunk 15 feet in circumference; *Pyrus japonica*, growing on the open lawn, is a perfect bush, with a circumference of 75 feet; *Catalpa syriacifolia*, *Robinias*, *Liriodendron tulipiferum*, *Crataegus tanacetifolia*, *Ginkgo biloba*, and many other trees and shrubs, are of great size and age, and are well in keeping with the venerable pile which they surround.

The kitchen gardens and houses are without the palace, and are approached from it by a wooden bridge which spans the moat. As may be expected from a place where so much entertaining is done, these gardens are extensive. Five acres are heavily cropped with vegetables, while hardy fruit of all kinds is largely grown. Apples are particularly well grown, one dish of Peasgood's Nonsuch Apple having won one Bronze Banksian and three Silver Medals this season.

The houses are old-fashioned, awkwardly-built structures, but in spite of this serious disadvantage, they were teeming with excellent produce at the time of my visit. The early houses were cleared of their fruit, and flowering plants had been installed. The late vinery contains two Vines only, Tottenham Court Muscat, and Alicante, the latter worked by Mr. Payne fifteen years ago on West St. Peter's stock; it carries fifty-two bunches, none of which are under 2 lb. each, and many considerably over 3 lb., and perfect in bunch, berry, and finish. The Melon-houses were heavily cropped with a handsome seedling variety, not yet in commerce, a few of those

cut turning the scales at 6 lb. each. The scores of fine fruit hanging testified to its productiveness and constitution.

Chrysanthemums, Poinsettias, Primulas, and Euphyllums are largely grown for exhibition purposes, and the plate in Mr. Payne's possession testifies to his success as an exhibitor. There are also the usual complement of stove and greenhouse plants grown for decorative purposes. *W. R. W.*

PLANT NOTES.

WHITFIELDIA LATERITIA.

THE above plant is the only representative in cultivation of this small genus, which possesses only two species. As its flowers are produced at this dull season, when bloom of any sort is scarce, it only requires to be better known to become more popular in our tropical-houses. It is a native of the interior of Sierra Leone, from whence it was brought by Mr. T. Whitfield in 1841. The figure in the *Botanical Magazine* was made from a plant flowering at Kew in October, 1844, where it is remarked that the same plant was still bearing flowers in March, 1845. This is accounted for by its racemes of flowers opening in succession from the base, which are of a bright brick-red colour, and produced from the apex of every growth. The leaves are of a pleasing green colour, and produced in abundance, forming a pretty contrast to its drooping inflorescences. Our plant has already been in bloom for about a month. In regard to cultivation, nothing can be more easy, and it succeeds well either planted out or in pots; a good rich compost of loam, leaf-soil, and sand will give good results, and, with judicious pinching, fine plants may be obtained in the course of a year or two. Cuttings strike readily in spring, if given bottom-heat, and after rooting should be placed upon a shelf as near the glass as possible, to ensure a sturdy growth, and be shifted into larger-sized pots as required, until about the end of July. *H., Royal Botanic Garden, Edinburgh.*

BANKSIA COLLINA.

Seldom are the members of this interesting genus found outside of our botanic gardens, and this is the more to be deplored considering the beauty of their foliage, and the remarkable character of their inflorescences. A plant of the above-named species has been in flower here for several weeks past, its bottle brush-like heads of flowers springing from the forking of the branches, being particularly striking; these are of a yellowish colour, with the pistil standing out, and the stigma turned back, in the shape of a hook. The leaves are about 3 inches in length, of a dark green colour above, whilst the under-surface is covered with silvery hairs. The figure in the *Botanical Magazine*, t. 3060, under the name of *B. littoralis*, was taken from a plant flowered here in 1830, *littoralis* being one of the three synonyms this plant has received. For the successful culture of these plants an intermediate or greenhouse temperature is necessary, and, when established, they seem to enjoy being planted out. Our plants, recently planted in the temperate-house in pure loam, are doing exceedingly well. For pot culture, it is perhaps preferable to use a small amount of peat, together with good fibry loam and sand, potting firmly being an essential point. Cuttings, although not difficult to strike, take a considerable time to root, in a sandy peat soil, and, when struck, should receive as much light and air as possible. *H., Royal Botanic Garden, Edinburgh.*

CENTROPOGON LUCYANUS.

When properly grown this is one of the brightest plants to be found in the warm greenhouse; and at this season of the year its terminal clusters of bright carmine-crimson tubular flowers are vivid and very effective. Mr. J. Dinsmore, gardener to T. F. Blackwell, The Cedars, Harrow Weald, grows a quantity of it in 48-size pots, which give a fine show that will continue well into the new year. *Plumbago rosea*

is also grown in the same way, the plants being cut down annually after flowering, and it is also a very useful decorative winter plant.

BEGONIA MRS. JOHN HEAL.

This fine hybrid, between a rose-coloured tuberous Begonia and *B. socotrana*, raised at Messrs. J. Veitch & Son's Nurseries, King's Road, Chelsea, proves to be a true winter flowerer, and its large rose-crimson flowers borne above its fleshy, bright-green foliage are very handsome, and especially useful at this time of year. The seedlings have produced both double and single flowers. *J. O'B.*

THE SHANKING OF GRAPES.

DOUBTLESS there are various circumstances connected with our artificial culture of the Grape which produce the above complaint. These are chiefly owing to the large departure from nature which we have made in the matter of the plant's surroundings, and much good may result from the consideration of them in your columns. I have had many instances of outdoor Grape culture under my notice in Kent in past years, the varieties having been Black Hamburg, Espérione, Black Cluster, Foster's Seedling, Buckland Sweetwater, Royal Muscadine, and Dutch Sweetwater. These were cultivated mostly on a south wall, in a well-drained soil, overlying limestone, without any artificial preparation. No great quantity of manure was afforded, and the growth of foliage was encouraged by laying-in some strong young rods each season. Water was not afforded the border unless the season was an exceptionally dry one. I cannot remember ever seeing a shanked berry during the whole period. The most satisfactory varieties were Espérione and Royal Muscadine, which ripened fairly well in most years, but the others only in the warmest summers. But the point to observe is, that there was no shanking of the fruit.

I have seen many cases of it under glass in some of the best managed vineries and gardens, and I am certain it arises from a variety of causes, among which I would include ill-drained and made borders, poverty of the soil, overcropping, dryness at the roots, insects which injure the foliage, denuding the plant of foliage, weakening of the plant yearly by severe barking of the rods and plastering, unnatural climatic conditions. These may all be classed under two heads, (1) insufficient food for the crop; and (2), impairing of the vitality of the plant. To take them into full consideration is impossible without infringing too much on your space; but a little more detail may be useful: first, as to badly-made borders; i.e., lack of or insufficient drainage, where drainage is required; and the use of, it may be, good turfy loam and manure, very good, too, for the first four or five years, but which gradually becomes soured and pasty. It should always be borne in mind that the soil of the upper 3 inches of an old pasture contains but few stones, but chiefly consists of worm-casts, the excrement of animals, decayed leaves and other vegetable matters, together with the roots of grass and other plants, and in its natural state it keeps sweet when it is well drained; but when removed, and laid perhaps 3 or 4 feet deep in a Vine-border, these conditions are changed, and we should always do right if we mixed plenty of small stones or similar material in it, so as to keep it aerated and sweet.

Poverty of the Soil.—All that our hot-house Vines extract from the soil by their leaves, fruit, and wood does not again return to the soil, and Vines in vineries are in this particular under very different circumstances to those growing in a vineyard, which, instead of being confined to narrow borders, have practically an unlimited root-run; so that if we wish the Vines to keep in good condition year after year, we ought to supply much more food than that which is removed. I well remember one case of shanking, which was clearly traceable to insufficient nutriment.

Overcropping.—This has a decided relation to the cause just considered. It will be evident to most people that the quantity of fruit a Vine can properly mature will depend entirely on the amount of food within its reach and its capability to elaborate this



FIG. 113.—PLANTATION OF MARRAM GRASS. (SEE P. 750.)



FIG. 114.—MARRAM GRASS: SHOWING METHOD OF PLANTING. (SEE P. 750)

food in its leaves. Good cultivators endeavour to keep these principles always in view, so as to preserve the balance between the foliage and the crop. An overcrop does not always cause shanking during that season, but it may so weaken the Vine as to produce that result another season.

Dryness at the root.—This is always bad for the Vine at any time of the year, and if allowed to occur during the period of rest, it is not unlikely to extend through the period of growth also, owing to the difficulty there is always experienced in saturating a large mass of dry soil; and the result is shanking and other evils. The rule should be that whenever water is applied, it should be in abundance.

In the second class we have *insect pests*. It is unnecessary here to particularise these; every Vine grower, if he wishes to get a good crop, must be perpetually on the watch for them. The point I wish to impress is, that shanking may be traced to the check their ravages give to the Vine at a time when its needs are the most urgent; and dryness at the root, a cold and wet border, over dry or too steamy atmospheric conditions will all cause trouble in this way.

Denuding the plant of foliage.—This is perhaps not so common as it was twenty or thirty years since, for we have made progress since then, but it has not quite died out. The foliage on the main laterals should be thinly and evenly disposed, and the shoots stopped as soon as possible, and on no account should overcrowding be allowed; the sub-laterals should be stopped as soon as ready for it, and the next growths pulled out when young. Having done all these things, there will be no necessity to take away a large quantity of full grown foliage at any time.

Weakening of the Plant by barking, &c.—There yet remain large numbers of Vines which have been ruined by this system, and although we are getting into a more rational system, it is still recommended and practised by some growers. I once heard it compared to stripping a man to his skin, and plastering him over with all kinds of filth; the rods under this treatment eventually cease to increase in size, and then there is no longer any prospect of first-class Grapes from them.

Unnatural Climatic Conditions.—It is of course impossible to grow Vines under glass without putting them to a certain extent under "unnatural conditions," but with all plants there is a limit to the changes they will bear in this direction, and if we get beyond this point we are courting failure. The air of a vinery should never feel close, or be overcharged with moisture, as this is far from being the conditions under which the Vine grows in the open air; and if it be carried out persistently, is sure to result badly. Even Vines which have shanked badly with the ordinary crop when forced early, will finish a few bunches as a kind of second crop on the sub-laterals, perfect in colour, and without any shanking, because the Vines have had plenty of air since the first crop of the year ripened, and they have existed under conditions that are more like those in a state of nature, with the exception of having glass over them. The air of a vinery should always be kept brisk and sweet, and much cooler by night than by day.

The causes of shanking being so various, it is impossible to find a remedy that is infallible and applicable to all cases; and the intelligent cultivator will take all things into consideration, and find a remedy for shanking by removing the cause. *W. H. Divers, Ketton Hall Gardens, Stamford.*

NURSERY NOTES.

MESSRS. E. D. SHUTTLEWORTH & CO.,
LIMITED.

THIS enterprising firm at Peckham Rye has made much progress during the present year. At the end of last season the company had been newly arranged but a short time, and its spirit of progress was already taking effect in proposals for increasing the house accommodation at Peckham Rye, and for developing the capability of the ground taken at

Fleet, Hants, and of stocking it with a collection of herbaceous plants, &c.

The greater part of these ideas have been carried out, and there have been erected three good houses, each 100 feet by 36 feet, and several useful pits, a very fair addition to an establishment in one season. Nevertheless, they are comparatively well filled with stock, which seems to have increased just in equal ratio. Judging from what we saw when at the place some little time since, the additions have been much in the way of market plants, for these are present in much larger quantity, and in greater variety, whilst general plants have increased to a fair extent.

The firm has exhibited during the season very frequently, and especially during the first half of the year, groups of well-cultivated plants were almost always to be seen at the meetings of the Royal Horticultural Society at Westminster. The general collection of the plants at home is similar. Cleanliness prevails everywhere, and the plants appear to be grown as hardy as possible, thus preparing them, as far as is possible, to bear any change of conditions they may endure when removed from the nursery. This refers particularly to Palms and such-like plants that are often coddled far beyond what is necessary. *Kentia Belmoreana*, *K. Canterburyana*, *K. Forsteriana*, *Areca Baueri*, *A. lutescens*, *Geonoma gracilis*, and several of the popular species of *Phoenix*, are in greatest numbers, but there are also some good plants of *Livistona chinensis* (*Latania borbonica*), and *Corypha australis*. Though most of them are in the young stage, many good specimen plants are kept for supplying orders that may be received for such stock. *Aspidistra lurida variegata* is done well, and sold in large quantity, being one of the best market plants grown; whilst the pretty *Araucaria, A. excelsa*, is also liberally treated. Many other good foliage plants, including *Aralia Sieboldii* and *A. S. variegata*, and the handsome *A. Chabrieri*, are in the same excellent condition as are the others.

Dracenas and *Crotons* form quite a specialty, and many very successful exhibits of the latter have been made during the past two years. All the more popular varieties of *Dracena* may be seen, and a long list of *Crotons* in variety could easily be enumerated.

It surprised us to hear that the market for *Asparagus plumosus nanus* was not so brisk as it had been. It may be admitted that it has a drawback if required for arranging with cut flowers in vases, through its essentially drooping habit, but the same characteristic is its chief recommendation for trailing work, the decoration of rooms, or for intertwining with shower bouquets, and for such purposes a more charming or graceful plant cannot be named.

Ferns, again, are grown in immense quantity, and the kinds in stock are those most valued for hardiness of constitution. A variety of *Pteris tremula* called *P. t. Smithiana* is especially deserving notice, as being dwarfer in habit, with shorter, more compact fronds than the type, and being prettily crested at the apex. The trade done in Orchids is not large, but there are some fine large plants of *Dendrobiums*, *Cattleyas*, and *Cypripediums*, that give a rare lot of bloom each year. *Maxillaria spicata* was carrying a nice lot of bloom, and some good plants of *Coelogynes* in pans were just in sheath, and promised a fine display.

Flowering plants are not by any means neglected. *Azalea mollis* is forced in hundreds, and a large stock was to be seen ready for that purpose; and batches of *Azalea indica* which had been grown at home were hardly distinguishable from the luxuriant imported plants, so healthy did they appear. Lilies of the Valley are also made much of for the purpose of forcing, some of which were exhibited in bloom in the early days of November. Double-flowered *Primulas* occupied a couple of shelves in one of the houses, and have given a lot of bloom. *Bouvardias* were the conspicuous feature in another house, and were the remaining plants after the orders had been fulfilled. These were being utilised for producing cut bloom.

Many miscellaneous plants, such as *Callas* (which are in fair numbers), *Ericas*, *Pelargoniums*, *Gardenias* (in capital health), *Boronia*s, *Carnations*, pot *Roses*, &c., were noticed.

The nursery at Fleet, Hants, is said to be giving the most satisfactory result to be wished. The ground has proved especially well suited to the growth of bulbs, *Roses*, and hardy plants generally, including fruit trees, excepting those required for standards, as the soil, which is remarkable for increasing fibrous roots upon the plants, does not induce such thick and sturdy holdfasts as are desirable for standards, and which are generally obtained from a stiffer soil. Samples of most of the herbaceous plants grown at that place are kept at Peckham Rye, arranged in beds, for the convenience of visitors.

Since the company has become "limited," there has been an attempt to introduce the co-operative system amongst the employes, and already most of the foremen of departments have an interest in the firm.

The nursery is about 1 mile from Peckham Rye station, and half-a-mile from Honor Oak Station, on the London, Chatham, and Dover Railway.

PARKSTONE NURSERIES, DORSET.

These nurseries cover an area of several acres in extent, and are situate within a few hundred yards of the railway station of Parkstone, and a few miles distant from Bournemouth, in which town the proprietor, Mr. T. K. Ingram, has an establishment for the sale of cut flowers. That the mild and salubrious climate of Parkstone—"the Mentone of England," is conducive to a free and healthy growth the condition of the trees and shrubs at the time of our visit (the middle of November), fully testified. A fine specimen of *Chamærops Fortunei* was observed growing in the nursery-grounds in front of Mr. Ingram's house.

The glass-houses are numerous and are well filled with plants of a decorative character, among which were noticed large quantities of *Ficus elastica variegata*, as well as the green form, about 20 inches high; *Dracena angusta*, about 24 inches high, and well furnished with dark-green narrow arching leaves from the pots; *Poinsettia pulcherrima*, about 12 inches high, growing in 3-inch pots, and developing nice heads of crimson bracts; *Callas* (*Richardia æthiopica*) to the number of 700 or 800 plants, growing in 6-inch and 7-inch pots, and all showing flower. When the plants are gone out of flower they are partly rested, and a few weeks later they are turned out of the pots, the old soil being shaken off the roots, and they are re-potted into the best loam at command, water being afforded to settle the soil, and afterwards when needed. Thus treated, the plants can be had in flower earlier in the winter than would be the case had they been planted out. *Bouvardias*, *Vrelandii* (white), *President Cleveland* (red), *Priony Beauty* (pink), *The Pearl* (white), *F. V. Raphael*, semi-double (light red), the plants being dwarf and well flowered; double white *Primulas*, and large quantities of *Maidenhair* and other *Ferns*, mostly in 3-inch pots, were also noted. Bulb-forcing (in boxes, and planted out in beds in the forcing-houses) is carried out somewhat extensively, and with success; in the Parkstone nurseries, 20,000 *Narcissus* and 40,000 crowns of *Lily of the Valley* (Berlin crowns) being among the number of bulbous plants annually forced to meet the growing demand for choice cut flowers during the winter and early spring months. *Chrysanthemums* are largely and well grown. *H. W. W.*

MESSRS. W. L. LEWIS & CO., SOUTHGATE, N.

As in most of the nurseries in which Orchids are cultivated with success, the number of the houses devoted to these plants steadily increases. The large house for *Cattleyas*, in the course of erection at the time of our last visit, is now filled with these plants and *Lælias*, consisting of many rare varieties and extra fine specimens, and all in very fine condition. But now that the last new erection is fully stocked with plants, the need of more space appears

to be urgent, and the groundwork of some additional houses has been commenced. All the houses are specially erected for the cultivation of Orchids, and that circumstance, and the cultural skill of the manager, Mr. Ashton, have conduced to make this nursery a model of a neat Orchid-growing nursery. The show of plants in flower of *Cattleya labiata* and *Dendrobium Phalaenopsis Schroderianum* is just passed over, and the display now consists of *Cypripediums*, crosses of which are here raised in moderate numbers, amongst them the beautiful *C. × southgateense*. Among those in bloom are the very pretty *Cypripedium × Pallas* (callosum \times calophyllum), *C. × Harrisianum superbum*, a magnificent form; *C. × Evenor* (*Argus × bellatulum*), a beautiful cross, and evidently a freer grower than most of the *C.* similar crosses; *C. × rubrum* (venustum \times Hookeræ), a singular-looking and dark red-tinted flower; a new cross between *C. × Harrisianum* and *C. Dayanum*, with flowers like those of *C. × Harrisianum roseum*, but with a larger lip, the petals horizontally extended, like those of *C. Dayanum*. *Cypripedium × Aylingii* is a thriving plant; and among the new arrivals is an excellent lot of the new *Cypripedium Charlesworthii*. With the *Cypripediums* were some well-flowered plants of *Calanthe × Veitchii* and varieties of *C. vestita*, the violet-scented *Cymbidium sinense*, *Cœlogyne Massangeana*, a fine strain of *Oncidium curtum*, and *O. Forbesii*, with strong flower-spikes; *Zygopetalum Mackayii*, *Compactia macroplectron*, *Dendrobium × Cassiope*, &c. In a small lean-to house some specimens of *Phalaenopsis*, large and small, thriving in the most satisfactory manner, and flowering profusely, were noted. *Phalaenopsis* are among the most troublesome of subjects in gardens, but we have observed that in most cases where a warm moist house without doors opening directly into the outer air is tried for them, the plants are generally successfully managed. In the same house were some sturdy little plants of home-raised crosses of *Cypripediums*, the result of crossing rare species, and many of which it is hoped will flower next season.

The occupants of the new *Cattleya*-house were in splendid condition, consisting of fine varieties of *Cattleya Mossiae*, and others, large-flowering *Cattleyas* predominating. At one end of this house a collection of *Lælia purpurata* was remarked in vigorous condition, and sending up flower-sheaths in satisfactory numbers. Of plants in flower mention may be made of *Pleione maculata*, *Cattleya Holfordii*, and *C. H. Reezlii*, the latter with purple markings on the labellum; and a plant that may turn out to be a *Cattleya maxima* cross, is expanding its showy flowers, besides which were good examples of *Lælia anceps grandiflora*, &c.

The low span-roofed houses are chiefly filled with *Odontoglossums*, showy *Dendrobiums*, *Masdevallias*, and other Orchids of the cool-house, all of which are clean and healthy. In one house was a number of *Lælia majalis*, *Oncidium nubigenum*, *Odontoglossum crispum*, *O. Pescatorei*, &c., some being in bud. In flower were *Lycaste Skinneri*, and a plant of the best known variety of *L. S. alba*; many forms of *Lælia alba*, the fragrant *Trichosma suavis*, the pretty *Oncidium cheiroporum*, *Sophranitis grandiflora* and its variety *rosea*; and well advanced in bud were a great number of pretty and rare things which will continue an interesting show of flowers throughout the winter and spring.

FLORISTS' FLOWERS.

"STOPPING" CHRYSANTHEMUMS.

I HAVE so much respect for Mr. Douglas, knowing him to be a most conscientious adviser, that I feel some diffidence in calling in question his directions with regard to the above; still, I feel that exception must be taken to what he writes on p. 716 of the *Gardeners' Chronicle* in regard to incurred Chrysanthemums which may be grown to produce exhibition blooms. The methods he advises of stopping the

plants of various members of the "Queen" family, Princess Teck and its sports, Prince Alfred and Jeanne d'Arc, may answer for a home display of flowers, but when it comes to the finest blooms possible for exhibition, that is quite another thing.

It has long been admitted that, to obtain the finest results, the plants must be of mature growth. My argument is, and always has been, that to give the best results the plants must be allowed to grow somewhat naturally. The multiplication of shoots from the single stem raised from a cutting is brought about by natural means, such as bud formation, which check, for a very short time, the growth of the main shoot, inducing additional side shoots to form, and thus the requisite number of flowers is obtained. My contention is that, if the cuttings are inserted during the month of December, in a similar manner to that described by Mr. Douglas, the plants encouraged to grow freely, providing them at all times with abundance of space so that the ripening of the wood may proceed at all stages, blooms of the finest quality are the result, and the plants which are managed on this principle will generally show three buds, the third one about the last week in the month of August, or as it sometimes happens, early in that of September. Cultivators of experience know that it would be useless to "take" buds that formed before the middle of the 3rd month named, as those furnish rough and uneven blossoms; and if these buds are rubbed off others will form in the course of three weeks, and from these are obtained highly coloured and finely-formed blooms. It should not be assumed that I refer now to and advise the use of terminal [final] blooms. Although the "crown" bud is generally regarded as being the second bud formed, it is not always so; certainly not in the case of the "Queen" family—very many plants showing two buds which cannot be distinguished from one another, and after that, a bunch of terminal buds would follow.

Mr. Douglas, I see, takes exception to Empress of India and Lord Alcester in the matter of stopping. I wonder why? I have never yet been able in any way to distinguish between the original member of this family and either of those named in the matter of growth. And this being an admitted fact, why should these two members of one family require different treatment? My experience compels me to say, that nearly all sports are the exact counterpart of their parent in the manner of their growth.

Especially do I think it is a mistake to treat the members of the Teck family in this way of stopping their shoots in April or any other time. No variety requires so long a season of steady growth as the members of this type. If what are known commonly as "crown" buds—the second formed are taken before the last week in August, they are certain to develop rough and pale-coloured flowers. When the plants are managed on the non-stopping method, the third bud formed early in September gives the best results. Many blooms of Hero of Stoke Newington find their way into the back row, and deservedly, too; but more into the middle row of a twenty-four stand, this being the largest variety in the family. Charles Gibson, Lady Dorothy, and Mrs. Norman Davis also are very often found in the middle row; Lord Eversley and the original generally occupying the front row. I cannot help thinking Mr. Douglas made a mistake when he said that these varieties are only good for the front row. *E. Molyneux*

THE AURICULA.

At mid-winter there is not much that can be done amongst florists' flowers; and just because the plants require so very little attention I feel constrained to write about them, so that the little they need may not be altogether neglected. In damp close weather they are as likely to suffer injury from damp as from any other cause. The frost causes the leaves to decay, and these should be at once removed, as they are sometimes the cause of the plants decaying at the neck, and when removing these leaves see that the decayed portion attached to the stem of the plants is entirely removed. As I write these

lines the weather is mild, and has been generally so for some time; and this has caused the plants to grow rather more than is good for them. At mid-winter it is better that they should have a touch of frost; and if the soil is frozen through, the plants really seem to benefit by it. I mention this because a good Auricula fancier, the late Kirke Penson, Esq., told me he never liked to see the plants exposed to frost; probably he may not have given them a chance to be frozen through and through, and could not speak from experience. A good frost causes the leaves to go rapidly off by decay. Slugs and the leather-coated grubs may get into the frames; if they do, see that they do no injury to the plants—let them be watched for at night with a good lamp, and be destroyed.

The small seedlings now in flower-pots or seed-pans, should be placed in a house or pit from which frost is excluded, so that they may not be thrown out of the soil by frosts; or even checked in their growth. Our object is to get the plants to grow to a flowering size by the end of the ensuing season, which they will not do unless they are kept steadily growing from the first. The very small off-sets which were put in late and have scarcely made any roots, should also be placed with the seed pots or pans near the roof glass. Those who have seed to sow should now sow it, if they are able to place the seed-pans in a pit from which frost is excluded, if not, I would wait until February.

CARNATIONS AND PICOTEES

are like the Auriculas, growing rather more than we like to see them, especially those of us who are looking forward to getting the best head of bloom about the date of the National Society's Exhibition in July. However, this is a matter over which we cannot have much control; all that can be done is to admit as much air as possible by night as well as by day, shutting up the houses or frames on those nights when sharp frosts are likely to occur. The plants ought not to be allowed to become dusty-dry at the roots; nor should they be watered until they are well on the dry side, and here again the anxious amateur, with not much experience in the culture of plants, is likely to ask: How often should the plants be watered? No one can give anything like a definite answer to this question. It depends all upon the weather. In frosty weather long continued they require no water all the time. In mild weather they are looked over once a week, or twice, as indicated by the appearance of the plants. All plants must also be kept clean, decayed leaves should be removed, and green-fly be wiped off with a brush or destroyed by fumigating.

Fungoid diseases, such as spot, are favoured by damp weather, and spread if the plants are kept in frames or placed in the open garden; but in the drier air of a greenhouse they will disappear, and never spread to other plants in a dry atmosphere. Another fungoid disease, *Uromyces caryophyllinus*, is not so easily disposed of, it has, unfortunately, become very common in collections, but there is no safety with it on the place, and unless it is stamped out on its first appearance, the cost of cultivating the Carnation will be enormously increased. The only way to make sure of its destruction is, cut off the leaves affected as soon as the blisters appear. If they are allowed to burst open, and the coffee-coloured sports are allowed to fly about in the air, it will be absolutely impossible to get rid of it. This fungus seems to thrive best in a dry warm atmosphere, therefore it is much better to attack now when least active. It seems to take more kindly to Carnations of the Malmesbury type, and spreads more freely under glass than in the open air; in this respect it is totally different from the disease termed "spot" (*Uredo dianthi*), which increases in a damp stagnant atmosphere. I have had specimens of the *Uromyces caryophyllinus* sent to me which had taken entire possession of the Carnation plant, so much so that nothing could be done except to burn up the entire plant. Another good grower wrote to say that his entire collection of plants of Mrs. Reynolds Hole was destroyed by it. *J. Douglas, Ilford.*

WOOD NOTES.

In the *Year-Book* for 1891, published in Hobart by the Tasmanian Government, there was printed a section relating entirely to the trees of that wonderful and pleasant land—the health-resort of the Australians. Of course, these are duplicates of the varieties found in the adjoining Continent—majestic in their towering grandeur, and of vast economical importance. In the work quoted are appended to all the botanical descriptions, reports from civil engineers and other scientific men who had thoroughly tested the timber in all forms, and as applied to every conceivable industry. Well, the other day, thinking over the enormous waste going on in America, as well as the vast output for commercial purposes, the thought occurred that there were still enormous fields to draw from at the Antipodes, and with the knowledge that our streets were being paved with blocks of Jarrah-wood from New Zealand, inquired of the Agent-General for Tasmania concerning the timber imported by us from that island. None!—or rather, to be quite correct, “practically there is no export of timber from Tasmania to England. The total sent home in 1891—the latest date for which there are complete returns—being of 108 superficial feet, valued at £21.” And Westlake of Tabernacle Street, Finsbury, E.C., was the importer. A “note” in connection with the firm’s colonial operations, Mr. Peace, of the Natal Government Office here, dated to us that they exported no timber—they imported some. From Tabernacle Street went these imports—some veneers! One timber merchant suggested that some of our colonial friends were inclined to sit down, and let other people do the shifting—more’s the pity.

It would appear that the vast increase in electric installation affects the demand for American Walnut, and that on occasion that all-round timber, white Pine, does duty for Walnut of all shades, being wonderfully amenable to staining and varnishing! Teak, of course, and Rosewood, with Mahogany, “go well” with the new light, and magnificent combinations are spoken of in which woven set-pieces of foliage and flowers—loose panels, in fact, for shifting, play, or will play, an important part. A set of bold oblong panels of the kind would suit many a ball-room, dining, or drawing-room; and hint at the revival of an occupation for the gentler sex, which could be made to grow into an industry of a no mean order.

It may be safely said that we do not know half enough of colonial horticulture; its agriculture we are beginning to know something of through dairy-farm products coming all the way from New Zealand, and successfully competing with countries nearer home. As several London merchants said to us, there is no reason why timber from the Antipodes should not take rank in this country, widely useful as it all appears to be; but the respective Governments should take the matter in hand, and place conveniently-sized samples before the public whenever and wherever it can be done; or they might have agents who would contract for supplying timber, just as English firms do, and soon there would be a paying demand; but the sitting-down policy will never do. To our colonial friends interested in the opening up of what would really be a new trade, we may recite the words of more than one firm of London timber-merchants, viz., that all vendors of any repute will most willingly make room for good sound stuff, no matter the quarter from whence it comes—provided always that there is a market for it. *E. C.*

THE ALPINE GARDEN.

SAXIFRAGA FORTUNEI.

This is the latest Saxifrage to bloom in the open, and often gets cut off by frosts. The flowers are pure white, and produced in graceful racemes, being very welcome on an autumn day in the open, when few other things are in bloom. It is, however, better to grow the plant in pots, and when in flower they can be removed to the greenhouse from the cold

frame, in which they will succeed perfectly well. *S. Fortunei* is not difficult to grow, and ordinary soil will suffice, whilst propagation is effected by division. There are some kinds allied to this species, as *S. cuscutiformis*, which blooms freely over a long season, and *cortusifolia*, but the most useful and beautiful of all is *S. Fortunei*. It is a native of China and Japan, and in the more southern counties of England could be trusted in the open; but, as a rule, to enjoy the beautiful racemes of flowers, the protection of glass is requisite. This species is quite as well worth growing as *S. longifolia*, as it blooms at a season when one appreciates the flowers more even than those of spring or summer. *V.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

OUTDOOR WORK.—While the weather remains open, operations out-of-doors should be expedited, especially the digging and trenching of the soil, if it be stiff and adhesive. Digging does not always get the amount of attention it deserves, and it is a common practice with stiff soils to dig them two spits deep, throwing the top spit into the bottom of the trench in large masses, which remain in that condition till turned up again. The spits that are turned into the bottom, if at all stiff or close, should be rendered fine by chopping them with a spade, whereas the soil which is brought to the surface should be left in as rough a state as possible. [For a time, *Ed.*] One often sees the ungenial sub-soil brought to the surface, whilst that which is fertile is buried beyond the reach of the roots of most kinds of vegetables. This is a mistake; and the lower stratum of soil, if it be at all infertile, should be left where it is, merely turning it over with the fork or spade.

CELERIAC Kohl Rabi, *Stachys tuberifera*, &c., left in the ground, should be covered with litter sufficient to exclude frost.

LETTUCE.—A sowing of Cabbage varieties should now be made on a warm bed, and for early work none is better or earlier than Golden Queen, whose colour is all that could be desired, and it turns in much sooner than any green variety, and as there are no outside leaves, the plants may be planted rather close together.

CARROTS in hotbed frames will now be growing fast, and snails and slugs must be diligently kept under, or they would clear a frame of Carrots in a short space of time. Lime acts as a deterrent, but in mild weather they should be sought for with a lamp after dark. Another sowing may be made.

INDOOR WORK.—Potatoes for seed should be examined, and the best tubers selected for sets, and if these are kidneys standing them on end. Carrots, Beetroots, and other roots in store, should also be looked over, removing any growths and throwing away those which are decaying. Onions, Shallots, and Garlic require the same kind of care, or the rotting bulbs will soon affect others. Label, stake and peg making should be looked to in bad weather.

PLANTS UNDER GLASS.

By BAILEY WADDS, Gardener, Birdsall Gardens, York.

CRINUMS, IMANTOPHYLLUM MINIATUM, AND VARIETIES.—Any of these which have been rested as recommended in earlier *Calendars* may now be placed in a warm house without bottom-heat, and placed on a shelf or the bed, and well watered at once. It may be advisable to pick away the surface-soil a little, and afford some fresh rich loamy soil in its place.

TOXICOPHLEA SPECTABILE may now be placed in the stove or forcing-house if it has been well grown during the summer in the warm-house, and placed to rest in a cool-house for three months; its sweet-smelling white flowers will repay any care bestowed upon it. When resting in the cool-house, the plant should be kept rather dry at the root, but the foliage must be maintained in a good condition, no evergreen plant requiring to be so dried-off as to lose its foliage. Afford good waterings of tepid liquid-manure to plants placed in heat—bottom-heat is not required by it.

AMARYLLIS OR HIPPEASTRUM.—A batch of early and well-ripened bulbs of flowering age, and in well-drained pots, may be placed in a moist temper-

ature of about 50° by night, 55° to 60° by day, affording them not much water before they grow freely. Keep them in a light and airy part of the house, and damp them overhead with the syringe at times.

PELARGONIUMS.—The show and fancy varieties which were potted in September and October should be kept near to the glass, and care taken with the watering and affording air. A temperature of 40° to 45° by night and 50° to 55° by day will be suitable, with plenty of air when the weather is mild. The plants should be occasionally turned round about, and fumigation resorted to if green-fly be present. Avoid damping them overhead, and keep them rather dry at the roots, but not so as to cause flagging. The foliage should be of a good green colour, the shoots trained out from the centre to the circumference, weak shoots cut out, and strong ones stopped.

SOUVENIR DE LA MALMAISON AND OTHER CARNATIONS require to be kept free of green-fly, and to have air afforded night and day when not in flower, and kept comparatively dry at the roots for some weeks to come; but as the plant is an evergreen, they must not be kept over-dry. Several kinds of temperature are required to have this variety in flower during the winter—one for the young stock, one for the growing plants coming on to flower, and another for those that are in flower. They should be kept apart from other plants, or they will get dirty.

VIOLETS will need careful attention, so as to ensure daily gatherings of blossoms, the frames being defended against low temperatures with dry mats and litter. Mouldy leaves and flowers should be daily removed, and air afforded night and day during mild weather, removing the lights altogether when it is sunny and mild. Afford the plants no water during these dark days unless they show signs of flagging.

HYACINTHS AND OTHER DUTCH BULBS.—The potting of these that have been kept back for late flowering should now be completed, treating these like the earlier-potted bulbs. Introduce some of the early varieties into the forcing-house; also more Lilacs, Deutzias, Spiræas, Lily of the Valley, Azalea mollis, Freesias, Sweetbrier, &c.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

FIGS.—To ensure a crop of fruit from Fig trees on walls, the smaller embryo fruit must be protected from frost. Instead of the usual practice of protecting the fruits by binding the branches in bundles, and then covering them with straw bands, &c., the evil results of which have often been exposed, branches of Yew, Spruce, Fir, &c., should be tied over the main branches of the Fig trees, these providing sufficient protection. The withering and falling of the leaves in February and March gradually expose the Fig trees to the light, and in the event of a return of frosty weather more Fir or Yew branches, or even old fishing-nets may be placed over the trees if the protecting material should seem to have got very slight.

BLACKBERRIES.—The old growths which bore fruits may now be removed, and the young ones fastened to the trellis, at 9 inches or 1 foot apart. If the stools stand somewhat close together, rather than train the growths straight upwards, and have to shorten them too severely in the summer, let them run obliquely, crossing each other like diamond-paned windows, but do not crowd them together. With the introduction of American varieties of Blackberries a few years ago, many were led to adopt their cultivation, and the Wilson Junior variety, which was so much cried up at the time, has turned out to be one of the best of those introductions, if its requirements are fairly met. Unlike our common English Blackberry, which will bear and ripen as fine fruit in a shady position as when exposed, the Wilson Junior, a very strong growing variety, must have a sunny position, and where wired-walls with a south or westerly aspect can be devoted to its cultivation, it repays the cultivator. In soils which have become too infertile for the remunerative cultivation of other fruits, these Blackberries would prove a paying crop without further preparation of the soil beyond trenching it for a space of 3 feet or 4 feet distant from the wall. The Blackberries could be planted at 6 feet apart. Old or unsightly buildings, with the warm aspect above recommended, could soon be covered with the Wilson Junior, if the soil is not very suitable for other fruits. The cut-leaved variety is the best for growing

in exposed positions, over arches, wire-trellises, &c., or it may be planted to cover dead trees, in the shrubberies.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

HINTS ON CURRENT OPERATIONS.—The various plants of *Cattleya labiata* and *C. Bowringiana* have flowered freely, making a fine display in our houses during the past six weeks, and some few may last over the old year. Any of these plants which may stand in need of re-potting or re-dressing will be taken in hand before new roots push out in any number. It will be found necessary to break the pots, the better to get all the roots. Former directions with regard to re-potting, &c., will hold good for these plants. The old flowering-sheaths must be cut clean away, and but little water afforded the plants. It may here be said that *C. Bowringiana* should be potted on a rather higher mound of materials than most other *Cattleyas*, the new growths often breaking from the base of the previous growth, and given more materials they have a better chance of getting clear away. A very small quantity of water will be needed by this *Cattleya*, no more than is sufficient to keep the pseudobulbs plump. *Cattleya exoniensis* if in flower and in need of potting, will be better if this be done now than later. *Zygopetalum Mackayi* and *Z. maxillare*, now showing flower-spikes will, in each case, require abundance of water at the root. *Zygopetalum maxillare* grows better in the *Odontoglossum*-house than in any other. *Calanthe veratrifolia* and *C. Textori*, both evergreen, if in good health will need watering at the roots plentifully, and a moist atmosphere should be maintained where they are growing. *Phaius grandifolius*, *P. maculatus*, and *P. Wallichii*, being strong-growing, fleshy-rooted plants, need to be carefully watered occasionally, weak liquid manure being applied at the root. A few *Dendrobium*s may be started in an intermediate-house, keeping them therein for a few weeks before placing them in the flower-house. Those plants which are started at at this period will flower during January, and any of the following may be chosen at this time, viz., *D. nobile*, *D. Wardianum*, *D. crassinode*, *D. Findleyanum*, and any of the garden crosses. The temperatures for the next few weeks may range as follows: *Cattleya*-house, by night 55° to 60°, by day 60° to 65°; *Odontoglossum*-house, by night 45° to 50°, by day 55°; *Phaiopsis*-house, by night 60° to 65°, by day 70°; and East Indian-house, by night, 60° to 65°, by day 70°.

THE FLOWER GARDEN.

By T. H. CRASP.

LAWNS.—Any alterations or levelling of the land should, if possible, be taken in hand, and finished at an early date, the New Year bringing its own necessary operations in abundance. Nothing detracts so much from the appearance of a garden near the dwelling as an uneven lawn. In removing the turf previous to operations being commenced, let it be cut, "raced" is the gardener's term, into strips of 1 foot wide and 3 feet long, or in squares of 1 foot and 1½ to 2 inches thick. If cut in the longer form, let it be rolled with the grass-side inwards, and stacked clear of the ground which is to be levelled. Then dig the land all over to a depth of 6 inches, and when that is done proceed to level it on a dead level, or a hanging level, using the line if the extent is not great, and if large the boning-stick must be used. Having put in the various pegs at from 10 to 12 feet apart, proceed to level the soil, carefully filling-in hollows and reducing hillocks, raking it roughly, and afterwards trampling it evenly and regularly all over, raking it again before placing turf in position. If the lawn showed signs of poverty in the soil, spread some rich soil over it before turning it anew, and in the early spring afford a manurial dressing of some kind. Lawns often get browned in patches, a circumstance that is due to a shallow, poor, sandy soil, or because there are foundations of old buildings or masses of rock just beneath the surface. In such cases the offending material should be removed and replaced with some good holding loam. Having laid the turves as close together and as evenly as regards the level as possible, proceed to beat it regularly all over. It may be beaten once or twice during the winter, when in a moist but not wet condition.

PRUNING SHRUBS.—Except when the frost is very severe, shrubs may be pruned and trimmed at almost any time during the winter. A good many species and varieties form well-shaped heads naturally and without any assistance in the way of pruning; but others require a few inches to be cut

off the branches that are crowding or overgrowing their neighbours. As a rule, amongst the Evergreens, all the *Cypresses*, *Junipers*, *Cryptomerias*, *Thuias*, do not need this kind of trimming, with the exception of an occasional shoot or two that has overgrown its bounds.

GENERAL WORK.—*Dahlia*s, *Canna*s, &c., that were taken up and placed in a shed to dry, should now be put in a cool dry shed, where the frost is excluded, and covered with dry soil or ashes. It is a good plan to take up the roots of choice varieties of *Hollyhocks*, and plant them in a cold frame close together, ventilating them freely in mild weather. They may be wintered outdoors safely in southern counties, by protecting the roots with a good layer of ashes, and the tops in severe weather with some light dry litter, but even then it is risky in the case of choice and valuable varieties. Take every precaution to provide protection for any plant that is likely to suffer from frost. In wet or frosty weather plenty of work may be found indoors by making labels of various sizes, pointing flower-sticks, and tying them up in small bundles according to their length and size, &c. A good stock of birch-brooms might also be made in country districts where plenty of material is at hand. Pegs may be cut for layering and pegging down plants, and if all these little details are attended to at this season of the year a deal of time may be saved when the long and busy days come again.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

CHERRIES.—Where early *Cherries* are required towards the end of the month of April, the present is a good time to start trees in pots, if they have been long enough time potted to be well established. Preparatory to putting the plants into the forcing-house, wash them with Gishurst-soap, and remove all inert soil from the surface without injuring the roots, replacing the same with loam, in which is well mixed some special kind of manure, and make this top-dressing very firm with the rammer, and for that purpose the new materials must be dry. Let sufficient space be left for affording copious waterings. Fumigate and clean the *Cherry*-house, and place the trees therein in such a position that they may be afforded plenty of air, and where the light is the best. *Cherries* are easily ruined by quick forcing, and at starting a temperature of 40°, with air put on daily, should not be exceeded by artificial means, although with sun-heat it may rise 10°, with plenty of air afforded, and this should be given early, so as to prevent a too sudden rise of the temperature. Sprinkle the trees once or twice daily with tepid water, and water at the soil as often as may be required, remembering that great dryness in the soil will check the trees as well as too much water. *Plums* may be forced in the same house with *Cherries*, doing well with the same management; and in either case, the varieties which fruit early are the most suitable. A few *Peach* trees, well established in pots, of the earlier varieties, may have a position with the above. Fire-heat is the most injurious item applied to fruit trees in pots, but cannot be entirely dispensed with.

FIGS.—Where these are grown in a house by themselves they are of easy management, still, in many *Peach*-houses good *Figs* are grown. When the roots of the *Fig* are confined to narrow borders or tubs, the affording of water is always a nice part of their culture, the untimely dropping of the fruit being often traceable to the maintenance of a damp surface on the soil of border or tub, while the feeding roots below are suffering from dryness. Heavy top-dressings of adhesive manures often lead to errors in watering. The use of cold water should be guarded against, and a crowded state of the shoots is not desirable, but short stiff growths are generally fruitful, and should be retained in preference to long-jointed ones. At starting, a temperature of 45° to 50° at night should not be exceeded, and a healthy atmosphere should be maintained by lightly syringing the trees and walls, &c., at shutting-up time. *Bush Figs*, if in pots, are easily managed, and may be prepared for forcing similarly to *Cherries*. They may be plunged in a bed of warm leaves, not exceeding 60° to 65° at first. Slow forcing is the rule during the first month after the plants are started, harvesting sunheat as much as possible in preference to using fireheat. If *Fig*-trees or bushes have been started to ripen fruit in April (many lose the crop by doing this) they may have a rise of temperature to 50°–55°,

when growth has really begun, and 10° higher when at shutting-up time if there is sun-heat. Syringe the trees in the afternoons, but avoid having much moisture in the house in damp or cold weather. If bottom heat be used it should not exceed 70°.

STRAWBERRIES.—Plants which are fruiting a second time require careful watering as the fruit shows signs of colouring, and manure in all forms must be withheld, and no more water afforded than will keep the roots healthy; ventilate freely, and expose the fruit to the light.

THE APIARY.

By EXPERT.

TWO QUEENS IN ONE HIVE.—Mr. Wells has just given his third season's experience of the working of hives on his double-queen system. The result is very satisfactory, and will, no doubt, induce many bee-keepers to supersede their present hives and go in for double ones. In the year 1891, Mr. Wells obtained an average of 128½ lb. of honey from eleven hives; in 1892 an average of 158 lb. from five hives; and in 1893 an average of 136 lb. per hive from nine hives. He states that last season the bulk of the honey he obtained was gathered from the early blossoms of Plum, *Cherry*, *Pear*, *Apple* trees, &c.; and that afterwards there were scarcely any flowers in the neighbourhood of any use for producing honey. Sainfoin a mile away was cut before it came properly into bloom, and there was no white *Clover* to speak of. This being the case, it is very evident that if ordinary hives had been used little or no honey would have been obtained in such a district, as bees are rarely, if ever, sufficiently strong in numbers to store supplies so early in the year in hives of the present kind. Mr. Wells summarises his results for the past year as follows:—

108 1-lb. sections at 9d. each	...	...	4	1	0
1115 lb. extracted honey at 6d. per lb.	...	...	27	17	6
19 lb. beeswax, at 1s. 6d. per lb.	...	...	1	8	6
			33	7	0
Less total expenditure	...	...	1	0	9
Balance for labour	...	...	£32	6	3

In addition to this, no sugar was required for feeding, the bees having stored enough honey in the brood-frames to winter on. Apparently, there were no swarms from the nine hives, as none are mentioned, and this would coincide with the experience of most bee-keepers, swarming in 1893 having been quite the exception.

THE ABSENCE OF SWARMS IN 1893.—The abnormal season just passed was remarkable as far as bees are concerned in the persistency with which the combs generally used for the rearing of brood were crammed with honey, and the almost entire absence of swarms. The latter was no doubt the outcome of the former peculiarity, as the queens being restricted for want of room, fewer eggs than usual were deposited, and colonies did not increase much in strength. There would be also greater mortality amongst the adult bees, worn out with the extra incessant labour of honey-gathering. In an ordinary season, honey is obtained and taken into the hives at so slow a rate in spring that it is consumed almost directly by the ever-increasing brood, so that by May or the beginning of June the hives become so crowded with bees, that swarming takes place as a natural consequence, and more room is thus provided. The glorious weather coming so early, and at the period when fruit and other trees were clothed in bloom, caused more nectar than usual to be secreted, and gave the bees every opportunity to gather it, which they did, but preferred to store it in the cells which came nearest to hand, supers that were put on being quite neglected. The proper course to pursue under the circumstances, would have been to have removed as many of these heavily-charged combs as possible from the brood chamber, replacing them with empty ones or full sheets of foundation, so that the queens would have had greater facilities for depositing eggs.

ATTENTION TO HIVES.—The only attention that bees require now, is to see that the entrances to the hives are kept clear, so that ventilation is not impeded. A piece of wire shaped into the form of a hook may be used to clear away any dead bees that can be reached on the floor-boards that would be likely to cause this mischief. In the case of snow coming, the entrances should be shaded by placing a board in front, so as to prevent the sun being reflected into the hives and enticing the bees out to their destruction.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Plants, Fruits, &c., to be Named.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be good ones, carefully packed and numbered, and not more than six should be sent at one time. Leaves only, or Florists' varieties cannot, as a rule, be named.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	DEC. 18.	Rosea, Herbaceous Plants, and Dutch Bulbs at Protheroe & Morris' Rooms.
WEDNESDAY,	DEC. 20.	Dutch Bulbs at Protheroe & Morris' Rooms.
THURSDAY,	DEC. 21.	Consignment of Lilies from Japan, Begonias, Spiraeas, Roses, Green-house Plants, Azaleas, &c., at Protheroe & Morris' Rooms.
FRIDAY,	DEC. 22.	Dutch Bulbs at Protheroe & Morris' Rooms. Orchids at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—39°·6.

AMONG the "weeds" which have been turned to good account, and might be rendered much more useful (see p. 521), may be mentioned the Lyme grass (*Elymus arenarius*), the Marram grass (*Psamma arenaria*), *Triticum junceum*, and *Carex arenaria*. All these are common on our sandy shores, and, together with *Euphorbia Paralias*, *Eryngium maritimum*, *Convolvulus*, *Soldanella*, and many others, are enabled by means of their widely-spreading underground stems and roots to anchor themselves in the sand, whilst, by means of their internal organisation, they are specially well adapted to resist the ill effects of deficient moisture to which they are subject. Not only is undue evaporation provided against, but the structure of the plant permits the absorption and storage of water, so that it is rendered relatively independent of long spells of drought, and its skeleton of woody tissue enables it to withstand the force of the wind. The peculiar form of the leaves is also well-adapted to diminish the injury caused by the thick covering of sand to which they are exposed, and to resist the friction and outting to which they are liable from the wind-borne sand grains. All these phenomena are obvious enough to those who observe the organisation of the plants inhabiting the sand dunes of our coasts. Here and there attempts have been made to turn these attributes to good account, but certainly not nearly to so great an extent as might be done.

Nature shows us the way, but we are laggards in following it. Nevertheless, it is quite certain that, once the sand is fixed by the systematic planting of sand-grasses, other vegetation can be grown with profit, and the desert be made productive. The young grasses, the Luzerne, and the Broom often sown with them, act as nurses to the seedling Pines; and other plants, which can, if thus protected in the early stages, be made to grow. We are familiar—by hearsay, at any rate—with what has been accomplished in South-Western France, where an entire province has been endowed with fertility, and a plague spot rendered healthy; and there is no reason but inertia why the same process should not be carried out elsewhere. Our excellent correspondent, Baron FERDINAND VON MUELLER, whose energy has apparently no bounds, has introduced the seeds of the Marram grass into Victoria, with results which are shown in the following extract, and in the engravings taken from photographs, for which we are indebted to him (figs. 113 and 114, p. 745):—

"The Marram grass, the seed of which was first introduced into the Colony of Victoria by the Government Botanist, the Baron von Mueller in 1883 (and by him entrusted to the Borough Council of Port Fairy for experiment on the barren shifting sand hummocks fronting the coast line of Port Fairy), has been proved to be the most effective sand-stay ever planted. Practical evidence of its value can be seen in the miles of sandhills now reclaimed by the Marram plantations, sown under the direction of Mr. S. AVERY, the park-ranger. So complete has been the reclamation of the lands, that where a few years ago not a sign of vegetation was to be seen, there now exists a succulent grass eagerly devoured by cattle, and growing to a height of 4 feet. Marram grass is practically indestructible—burning, cutting, or eating off only makes it thrive, whilst in exposed shifting sand it propagates as surely as in the most sheltered position.

"The following directions how to plant Marram grass have been prepared by the park-ranger: The grass to be planted in rows at a distance of 6 feet apart, the space between the plants to be at least 2 feet. The depth to which each plant is put into the sand depends upon the nature of the sand. If in sand not likely to drift for two or three months, 9 inches will be deep enough; but if very loose and shifting, the grass should be placed from 12 to 15 inches deep.

"A 'plant' consists of as much grass as a man can conveniently hold in his hand, and care should be taken to have the roots regular. The system adopted in planting is for one man to dig the hole, and another to put in the 'plant,' and well tread in round the same. After twelve months' growth, the plants are fit for thinning out and transplanting. Cattle should not be allowed to graze on the grass until the roots become thoroughly established. It takes 3630 'plants' to the acre; and there are about 2800 plants to the ton, thus 1 ton 6 cwt. will cover one acre.

"The most favourable time for planting is in autumn. The grass will retain its vitality, and strike root after being out of its sand bed for three months or more."

Another point which may be mentioned, is the value of certain plants in holding up clay banks by the sides of railways, or on our coasts. At Folkestone, for example, the gault, a limey clay, is notoriously treacherous, and the undercliff in Eastwear Bay testifies to the destruction that is constantly going on. The great clumps of Colts-foot, of Reed, *Phragmites communis*, the coarse tufts of Fescue, Brambles, and other plants with similar endowments, show what might be done, concurrently with other measures, to prevent this destruction. But it requires to be done

systematically and thoroughly, and as the causes are always more or less in operation, so the protective measures require to be carried out with corresponding vigilance. The so-called practical man, as is his wont, asks, "But will it pay?" He is right in making the enquiry. Fortunately, in this case there is no doubt whatever that operations such as we have spoken of are eventually highly remunerative.

OUR ALMANACK.—Secretaries of Societies and others, are earnestly requested to forward immediately, the dates of Show Fixtures and Meetings of Botanical and Horticultural Societies of any kind for 1894, for insertion in the Almanack, to be published in our issue for January 6.

CALPURNIA AUREA (fig. 115, p. 751).—This plant flowered for the first time at Kew in the spring of 1890, when it was noted in the *Gardeners' Chronicle* as a small tree, with the habit and flowers of the common Laburnum, and for which it passed with non-botanical people in Natal, of which country it is a native, and is now a favourite garden-tree in that colony. It grows freely, forming a graceful tree, and flowering irregularly under cultivation at Kew. In pots it is not very happy, but planted out in a large conservatory it is quite at home, even when not in flower, and it is attractive by reason of its elegant pinnate, deep green foliage. The racemes of yellow flowers are shorter, and therefore less elegant in appearance than those of the common Laburnum; still, they are more thickly placed on the raceme, and of a clear bright-yellow colour. In countries where severe frost is not experienced, this Calpurnia may prove a useful little tree for the park and garden. The accompanying figure was made from a plant which flowered last autumn in the Temperate-house at Kew, and is flowering there at the present time, flowering shoots from this plant having been shown at the Drill Hall on Tuesday last. Although many of the leaves fall off the plants at Kew in the winter, the plant is not deciduous. Calpurnia is a genus of eight species, all natives of South Africa, and closely related to Sophora. Perhaps Mr. MEDLEY WOOD, of Natal, would be kind enough to tell us more about this interesting tree.

LINNEAN SOCIETY.—On the occasion of the meeting held on Thursday, December 7, Professor STEWART, President, in the chair, Mr. A. Trevor Batbye was admitted a Fellow of the Society; and the following were elected:—Messrs. J. H. Cooke, H. Cummins, R. E. Leach, C. Sharp, A. Smith, F. C. Smith, A. H. Teague, and H. L. Thompson. Mr. C. T. Druery exhibited and made remarks upon a new example of apospory in *Scolopendrium vulgare*; and Professor Bower brought forward a similar case in *Trichomanes Kaulfussii*. Mr. F. Enoch, with the aid of the oxy-hydrogen lantern, exhibited the various stages of development of the Black-Currant mite (*Phytopus ribis*), and gave an interesting account of its life-history. Mr. Thomas Christy exhibited a gigantic reed-like leaf from the Zambesi, with drawings of sections; it appeared to be allied to *Sansevieria cylindrica*, but differed conspicuously in the greater size of the leaves, which measured about 9 feet in length, instead of 18 inches to 3 feet. The remarkably tough and strong fibre which it produces is considered to be of great commercial value, being equal to the best *Sansevieria* Hemp. On behalf of Signor Martelli, the Secretary read a paper on "The Cause of the Fall of the Corolla in *Verbascum*," which gave rise to an interesting discussion. The meeting adjourned to December 21. With reference to the *Sansevieria* leaves above-mentioned, as being shown by Mr. Christy, the cylindrical Reed-like leaves, about 9 feet in height, belong, without doubt, to a species of *Sansevieria*. As, however, only the leaves were present for examination, the exact species could not be determined. The internal structure of the leaf is most like that of *Sansevieria cylindrica*. One great difference from that variety is, however, the length of the leaves, as

all describers of this hitherto have given them as being from 18 inches to 3 feet long, whereas in this case they are 9 feet. A strong and very tough fibre runs through them, and is equal to the best quality of Sansevieria hemp. A full account, we believe, was published in the *Chemiker Zeitung*.

BOTANICAL MAGAZINE—The plants figured in the December number are:—

Amorphophallus oncophyllus, Prain, t. 7327.—A species with a solitary tri-pinnatisect stalked leaf, a spotted peduncle, a spathe the base of which wraps round the lower part of the spadix, and is of a dull,

greenhouse or half-hardy shrub, with "white flowers, changing to pale azure as they fade. See *Gardeners' Chronicle*, 1889, vol. ii., p. 156, f. 21.

Eria Meirax, N. E. Brown, t. 7329.—A very curious miniature Orchid, with small, depressed, subglobose pseudobulbs, like miniature *Crocuses*;



FIG. 115.—CALPURNIA AUREA: GREENHOUSE SHRUB; FLOWERS, GOLDEN YELLOW. (SEE P. 750.)

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, December 21, at 8 P.M., when the following papers will be read: 1, "Enumeration of all Orchidæ hitherto Recorded from Borneo," by H. N. RIDLEY, F.L.S.; 2, "Hepaticæ collected by W. R. ELLIOTT in the islands of St. Vincent and Dominica," by R. SPRUCE, A.L.S.

livid colour, whilst the spreading portion is purple, with large green blotches. The spadix is stout, with an ivory-white, flame-shaped appendage. The plant is a native of the Andaman Islands, and though very handsome, its odour is noted as "the most vile of any of its notoriously evil-smelling congeners."

Abutilon vitifolium, t. 7328.—A very handsome

leaves oblong, lanceolate, about half an inch long, appearing after the flowers. The latter are red, about the same length as the leaves, regularly tubular, curved, with a limb of three regular, spreading, ovate-acute segments. It was originally described by Mr. N. E. Brown in the *Gardeners' Chronicle*, 1880, ii., p. 603. It is a native of Moultmein and Sikkim.

Eulophia Zeyheri, t. 7330.—A Natal species, with long, lanceolate, plicate leaves, and stalked clusters of primrose-yellow flowers, each about 3 inches across when expanded. The lip is three-lobed, the lateral lobes purplish, erect, the disc with two projecting keels, which end in little horn-like processes, and the spade-shaped front lobe studded with purplish hairs. Introduced by H. J. Elwes, Esq.

Protea rhodantha, Hook. f., t. 7331.—A handsome species, the seed of which was introduced to Kew by Mr. W. T. Horn in 1886. It only attained a height of 18 inches, when it flowered—a valuable feature. It is a shrub with oblong-linear leaves and terminal heads of crimson flowers, surrounded by numerous overlapping, oblong, crimson bracts. It is a native of the Transvaal.

"ORCHID REVIEW."—The December number of the *Orchid Review*, which completes the first volume, contains a chromo-lithograph of the new *Cypripedium Charlesworthii*, and a complete index. It is interesting to note that the volume now completed contains the origin and parentage of the numerous hybrid Orchids down to the present date, all of which can be readily consulted by means of the index.

GARDENERS' ORPHAN FUND.—We hear that the LORD MAYOR has undertaken to take the chair at the next anniversary festival of this excellent institution.

CHRYSANTHEMUM PRINCE OF NAPLES (Prinz von Neapel).—The *Gartenflora* has a coloured illustration of this new Anemone-flowered Japanese variety. The rays are rosy-lilac, spotted with white spots, which may find favour with some, but which to us seem suggestive of unpleasant associations!

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.—The acting directors of this Society met in the Secretary's office on Monday evening, 11th inst., Mr. A. ROBSON, Vice-chairman, presiding. As suggested by Sir ARTHUR GRANT, the chairman of the Society, it was resolved that a Congress should be held in Aberdeen on a date to be afterwards arranged, the Congress to be attended by representatives from the leading horticultural societies in Scotland, and the best steps to be taken for the advancement of horticulture and kindred subjects to be discussed. It was resolved, subject to the permission of the Town Council, to hold a summer exhibition on the Links on the occasion of the Highland and Agricultural Society's Show next summer, and that an autumn show be held in the month of September. It was also agreed that two medals be offered to gardeners for length of service.

MYRTLE BERRIES.—A correspondent from Sidmouth, Devon, sends branches of the common Myrtle laden with purple berries. Only once before during eighteen years have the berries been produced, and that was in 1887 (Jubilee year), when the summer was also a hot one.

ROMNEYA COULTERI, OR THE CALIFORNIAN POPPY.—This plant is not only suitable for outdoor culture, but we find it will well repay for the protection of an orchard or cool greenhouse. Cultivated in pots, it has rewarded us with an almost continuous supply of bloom, commencing in April and continuing, as you will see from the enclosed specimen, up to the present time, and we have secured a fine crop of seed. We note in some of the horticultural papers, it is thought by many that it will not withstand the severity of our climate; but we may mention that we have plants in our nurseries which have withstood the last four winters with the protection only of a little coke-dust, though we doubt not any other light material would answer the purpose equally well. R. H. Vertegans & Co.

STOCK-TAKING: NOVEMBER.—The returns of our trade for the month of November do not compare very favourably with those for the same period last year, the imports being less by 8½ per cent., and the exports by 5 per cent.; the fall being, on imports, £3,097,517, and the exports £743,466. The "navigation" side of the question shows a fall of

11 per cent. in the entries and clearances. And here we may just note, that the number of steamers employed in British trade is 5694 whose tonnage is in excess of 100 tons, the net tonnage being 5,886,621 tons; these figures being given on the authority of the last issue of the *Répertoire Générale de la Marine Marchande de Bureau Verité*. The effects of the great coal war have been more felt in November than in previous months, and will doubtless be felt during the present month, though the great industries are again in full swing, with an air of uncertainty in the market relating to the ultimate settlement. The imports of wheat and flour from the United States during the past month fell off by nearly a million sterling compared with November of 1892; and the fate of the proposed WILSON Tariff in lieu of the McKINLAY being somewhat dubious, trade is necessarily contracted. The annexed figures from the "Summary" table of the Returns before us will be of interest:—

IMPORTS.	1892.	1893.	Difference.
	£.	£.	£.
Total value for month	£38,898,373	£35,800,856	—3,097,517
§II.—(A.) Articles of food and drink—duty free ...	13,058,620	11,886,973	—1,171,647
(B.)—do., dutiable	2,818,758	2,581,746	—237,012
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	8,913,754	7,932,702	—981,052
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,562,296	3,299,044	—263,252
§IX.—Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,621,563	1,625,483	+4,920
(B.)—Parcel Post ...	28,983	41,802	+12,819

It is interesting to note that, whilst three-fourths of the exports from the United States are of agricultural produce, we in this country take over three-quarters of that grand total. There is a rising market in America for food-stuffs, hence merchants are holding, whilst Russia is sending us more than usual. It is also interesting to note here that accounts from Egypt are all round of a highly encouraging nature, though those from Italy and Spain might be very much better. The following figures respecting our imports of fruit, roots, and vegetables maintain the interest in this section of the Returns always evinced by readers of this journal:—

IMPORTS.	1892.	1893.	Difference.
Fruits, raw:—			
Apples ... bush.	901,959	602,210	—299,749
Cherries	—	—	—
Plums	—	2	+2
Pears	19,268	43,170	+23,902
Grapes	99,012	173,971	+74,959
Unenumerated ...	29,584	36,051	+6,467
Onions	446,711	419,275	—27,436
Potatoes ... cwt.	403,103	49,295	—353,808
Vegetables, unenumerated, raw, ... value	£62,912	£52,298	—£10,614

As a "sign of the times" in the matter of imports of food products from our colonies, we may note the placing on the New Zealand and Australian line of a new steamer, next in size to the once-famous *Great Eastern*. The cargo capacity of the twin-screw *Gothic* is simply enormous, and dairy-farmers and fruit-growers at the Antipodes will doubtless hail with delight the first appearance of this last product of Irish industrial enterprise.

THE EXPORTS

for November, as above noted, show a falling off to the amount of 5 per cent. compared with those for November, 1892. This, and even more, was to be expected as a result, partly of the coal war and of the uncertainties in connection with the proposed

new American Tariff. Mr. WILSON and those acting with him, including President CLEVELAND, are quite aware of the fact that it is the purchaser, not the vendor, who pays the customs dues on all imported goods; and a good many Americans are tired of being thus mulcted to foot up the bill of an extravagant expenditure—the United States Budget showing a large deficit—the first for many years. Liberal as is the Wilson Tariff, it does not quite throw down the barrier of protection, but if passed, it will be productive of much good at home as well as to the hampered agriculturist in the States furthest removed from the Atlantic seaboard. The export of heavy goods and minerals have been much affected by the strife in the coal trade; should peace be assured in this direction, an all around improvement may have to be noted in the returns for December.

THE REIGATE AND DISTRICT CHRYSANTHEMUM SOCIETY.—This Society has, as we are informed by Mr. HARRY BAILEY of The Briars, Reigate, accomplished another year's useful work in connection with gardening charities, for in addition to the 30 guineas given to the Gardeners' Royal Benevolent Institution, as announced in our last week's issue, they have also handed £20 to the Royal Gardeners' Orphan Fund. Apart from this, the committee are enabled to offer a substantial prize-list, and the spirited competition which ensues is a further proof not only of the good work the Society is doing financially, but the increased number of growers of queen-of-winter flowers. The indefatigable Hon. Secretary, Mr. J. BROWN, backed up by a hard-working committee, deserve great praise, for during the five years the Society has been established, no less a sum than £299 10s. has been given to charities.

THE ORCHIDÉENNE.—At the meeting on the 10th inst., there were fourteen exhibitors and fifty Orchids, besides a collection of fifty specimens of *Cypripedium insigne montanum*. H.M. the King of the BELGIANS sent from Laeken an inflorescence of *Cattleya labiata* Warocqueana, with six superb flowers. A Certificate "de belle floraison" was awarded by acclamation. Certificates of Honour were awarded to M. Linden, for the following plants:—*Lælio-Cattleya Stchegolowiana* (!), a presumed natural hybrid between *C. grandis* and *C. labiata*, the segments are lilac, and the lip of an intense purple; 2, *C. Lowii* × *Parishii*, with the petals of *Lowii*, and the standard of *Parishii*; *Cypripedium villosum* × *Harrisoni* gained an Award for M. Engen Pourbaix. Mr. Alfred van Imshoot obtained a Certificate for *Lycaste Luciani* and *L. Imshootiana* [both of which were also exhibited at the meeting of the Royal Horticultural Society on Tuesday last]. First-class Certificates were awarded to M. Linden, for *Odontoglossum crispum amplissimum*, with a spike of sixteen flowers, with petals and lip of milk-white; also for *Cypripedium insigne montanum*, with the standard snow-white; *Stenia fimbriata*, with a lip as of tissue paper; *Cypripedium bellatulum* magnificum, with very large flowers and deeply coloured spots. Mr. Van Imshoot obtained a like award for *Lycaste Skinneri alba*, a pure white flower; and for *Cypripedium selligerum superbum*, *Oncidium Phalanopsis* var. *Imshootiana* and *Restrepia antennifera* var. *striata*. M. Ed. Vervaeet showed *Odontoglossum sulphureum* (First-class Certificate). Mr. Van Wambeke received the same award for *Cypripedium selligerum*. *Odontoglossum crispum*, a fine variety, secured like honour for the Comte de Bousies. Similar Certificates were awarded to M. de Moorloze, for fine forms of *Cattleya labiata* and *Odontoglossum crispum*; to Dr. Van Canwelaere, for *Cattleya labiata*, with deeply coloured petals, edged with white; to M. de Lansberghe, for *Odontoglossum tripudians*. Second-class Certificates were awarded to Aganisia ionoptera, from MM. Linden; to *Odontoglossum Pescatorei* from M. Ed. Vervaeet. Botanical Certificates were awarded to a species of *Catasetum* undetermined, and to a new species of *Maxillaria* from Peru, both shown by M. Linden.

THE CHISLEHURST AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

—On Tuesday last, the President of the above Association, Mr. J. LYNE, read a paper, entitled "The Drought of 1893." In the discussion which followed, the fact was mentioned that, on one occasion at least 143° of heat were registered in Chislehurst, the average temperature for that locality during the summer being from 108° to 115°. It was also mentioned as a curious effect of the drought that about 80 per cent. of the Potatoes planted by Mr. LYNE could not break through the soil, which was of a clayey nature, and had been literally baked by the heat. The ravages of green-fly and red-spider had interfered greatly with the crops, making it difficult to preserve a decent quantity. Mr. BUSHBY of Croydon contributed the information that in Surrey the drought had penetrated to a depth of 15 feet, and that at the present time the rain had hardly gone in 2 inches.

THE DUTCH AMBASSADOR.—We learn that Baron de GOLDSTEIN, the newly-appointed Ambassador to this country, is the President of the Royal Netherlands Horticultural Society.

ROYAL GARDENERS' ORPHAN FUND.—The Rugby and District Chrysanthemum Fruit and Floricultural Society was enabled to give to the above Fund the sum of £6 17s. 8d., realised by the sale of Chrysanthemum and other flowers, fruit, &c., on the occasion of their last exhibition, and is desirous of expressing its thanks to those who so kindly contributed to that end.

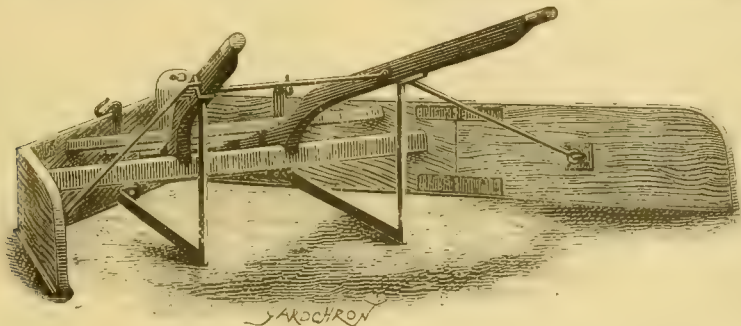


FIG. 116.—THE "KNOWSLEY" SNOW PLOUGH.

ADJUSTABLE SNOW-PLOUGH.

THE "Knowsley" Snow-plough, for being enabled to figure which we are indebted to Mr. Harrison of Knowsley Gardens, is, as will be seen by the figure, an adjustable machine, and can be readily fixed to suit various widths of road up to about 12 feet. There is a slightly projecting plate of iron fixed to the bottom edge of each of the side-pieces, which act like a share in cutting the snow up from the ground, and a pair of iron "skates" fixed in the line of draught, and secured to the shafts and front part, prevents the possibility of the implement refusing to act when it happens to get into a deep drift, and, as a further aid to that end, the power is applied, that is, the horse is hooked on, not at the extreme nose end as is usually done, but a little further back. The draught of the new implement is much lighter than that of the old pattern of snow-plough. The plough is shown in the illustration (fig. 116), with one side extended to the full width and the other drawn in.

HOME CORRESPONDENCE.

BELGIAN AND ENGLISH GARDENERS.—If Mr. Watson and Mr. Burbidge think proper to air their patriotism and their spirit of confraternity, they might choose a better means than by distorting (*dénaturer*) my remarks on the subject of English gardeners. I refer to the exact terms of an article published in the *Journal des Orchidées* on October 15, p. 432, the translation of which in the *Gardeners' Chronicle* is open to slight corrections, but which cannot, in any way, be considered as "ill-considered" or unfavourable to English gardeners. Before

writing my cultural notes I desire to make this fact quite clear. Before concluding, I should like to ask Mr. Burbidge whether and when he has seen the cultivation of Orchids at M. Waroqué's at Mariemont, or at Messrs. Lindens' at Brussels? *L. Linden*. [It is not desirable to prolong this correspondence. There is no question but that there are excellent cultivators in both countries, that circumstances differ in each, and that each may learn from the other. "To see ourselves as others see us" is, moreover, frequently salutary. *Ed*]

DAMAGE TO TREES AT DROMORE.—On Tuesday, December 12, we experienced a south-west gale of unusual severity, doing considerable damage to trees. The wind was roughest between 4 and 5 o'clock, p.m., when several branches were twisted off our large Douglas Fir, and three Cedars in the avenue were blown over, and the tops taken out of several others. Several Spruce Firs and Beech trees have also been uprooted. The wind was accompanied by heavy rain. This morning there is a renewal of the gale, with a very high temperature (53°). *C. Herrin, Dromore, Dec. 13.*

CARNATION MRS. LEOPOLD DE ROTHSCHILD.—If I rightly understood the action of the judges who had to examine the new flowers submitted for Certificates at the recent Crystal Palace Chrysanthemum Show, they passed over a vase of blooms of the above Carnation because they were as they thought a little weak in the stem, and because they had no plant to enable them to judge of its merits; but they gave a Certificate to a white variety, also shown as cut blooms, on the ground that it was a stronger grower. Mrs. Leopold de Rothschild somewhat follows the character of Miss Jolliffe, which without danger of being considered a weakly grower, is small in the foliage; it grows to a medium height, the habit is very free and bushy. The shoots send

up blossoms on erect stems, and it is so persistent in flowering that it may be rightly termed perpetual. About six weeks ago, when at Gunnersbury Park, Acton, I saw a house of between 200 and 300 plants of this variety, some a year old in 6-inch pots, and some two or three years old in much larger pots. Not only was the healthy and free character of the plants noticeable, but the head of bloom was somewhat astonishing, and the flowers were so great and well displayed. The blossoms are sweetly fragrant—that is a decided advantage, so many Carnations of otherwise good properties not possessing this quality. The flowers open as delicate pink, and as they age they become pinkish-rose without in the least losing any of their beauty; and it is only the older flowers that appear to split their calyx, though there was a marked absence of this defect among the flowers seen at Gunnersbury Park. Cuttings strike readily, and therefore it is a very useful nurseryman's plant, and it is in my opinion one of the very best to grow for cutting and market work. Had I been called in to make an award to it as a new variety I should have given it a double First-class with my knowledge of the variety and its excellent qualities. Probably, Messrs. Cutbush & Son, of the Highgate Nurseries, who exhibited the flowers, cut them from a plant grown in a little warmth, and therefore a little drawn. *R. Dean, Ealing, W.*

DO CYPRIPEDIUMS SPORT?—When speaking to Mr. R. H. Measures, of Streatham, a few days ago, he put the above question to me, and suggested that it would make an interesting topic for those concerned in the cultivation of Cypripedes. Mr. Measures is not only of opinion that Cypripedes do sport, but he has a plant in his collection which is varying continually in its form of flowering. This plant is Cypripedium \times Dauthierii, The Albino, a plant of which is also possessed by Sir Trevor Lawrence, Bart. The ordinary C. Dauthierii is a hybrid between C. barbatum \times villosum, and may be best described as a pale form of C. Harrisonianum, the latter being the reverse cross. The origin of The Albino I do not know; suffice it to say, that it is to Dauthierii what Sanderæ is to insignis. Mr. Measures' observations reveal the fact that at one season of flowering The Albino is not an Albino at all, but a Dauthierii pure and simple; while at the next time of flowering it reverts to its other character, and is once again The Albino, thus giving a representation in still life of Dr. Jekyll and Mr. Hyde. Another curious phenomenon which this plant presents, is a habit which it has of sending up suckers from the roots, and which at a glance look like numerous seedlings growing up. Mr. Measures could not quite understand these vagaries, and turned the plant out of its pot for examination, expecting, of course, to find that the plant consisted of two varieties; it was found, however, that the plant was entire, and each growth was traced in succession upon the rhizome. It will be interesting to hear if other hybrids, or species for that matter, are addicted to the same peculiarities. Cattleyas which have been pure white one year will sometimes flower the following year with a decided rose tint. Can this also be called "sporting"? *P. W.*

NON KEEPING OF APPLES AND PEARS.—Mr. Cook's experience of the very indifferent keeping qualities of these fruits, noted in a recent issue of the *Gardeners' Chronicle*, this season, is exactly that of many others, and it seems absolutely certain that our usual good supplies of home-grown fruits will by Christmas be unusually small. I was the other day reading some observations of Mr. Meehan with respect to the impossibility of growing good Apples in certain of the hot districts of America, and he pointed out that the Apple is essentially a cool-climate-loving fruit. We have had a season of exceptional heat and drought, with the result that we have had the finest Apples and Pears probably ever seen. A few weeks ago we rejoiced, were, in fact, very proud, that Great Britain had produced such grand, perfect samples. Now we rather regret what has happened, as it is found that our magnificent fruits are thin of tissue, devoid of juice, puffed up, as it were, by the great heat, and yet attenuated by reason of the great drought. We have had another lesson of the non-value of mere size in fruit products, as compared with that sterling solidity and excellence as well as endurance that come from ordinarily slow growth, and in which root moisture plays an important part. If we had experienced but occasional rains, we should have had loss of sun-heat, cooler atmosphere, and sap flow in abundance.

COUNTY COUNCIL HORTICULTURE IN NORFOLK.—Of the varied forms of technical education now being carried out in Norfolk under the auspices of the Technical Education Committee of the C. C., none is more popular, or affording more general satisfaction than that treating of horticulture. The services of Mr. W. K. Woodcock, the C. C. lecturer, are being much sought after in all parts of the county, and the average attendances at the lectures is much better than was the case a year ago. During the mid-day hours also Mr. Woodcock gives outdoor demonstrations in pruning and the general treatment of fruit trees, and these are very popular, being largely attended by cottage gardeners; and much good is expected to result from these lectures.

PANICUM PLICATUM.—We learn that there is a fine plant of this species, some 11 feet in height, in one of the houses of the Botanic Garden at Utrecht. Last summer the plant was grown in the open air with a fine effect.

PUBLICATIONS RECEIVED.—*Index Kewensis*, fasc. ii., pp. 729 to 1268 (De to Jus); *Les Orchidées*, M. Georges Martin; *Kew Bulletin*, Appendix I (list of Seeds, &c.); *Agricultural Journal of the Cape Colony*; *Brazil, State of Para, State of Ceara*—(Reports in Connection with the Chicago Exhibition). *Proceedings of the Agri-Horticultural Society of India*; *Pharmaceutical Journal*; *Flora of Somerset*, Part I., Rev. R. P. Murray; *North Carolina State Horticultural Society*; *Tropical Agriculturist*; *Moniteur d'Horticulture*; *Der Anatomische Bau der Laubblätter der Helleboreen*, Dr. A. Nestler; *Grundzüge einer Vergleichenden Anatomie der Blumenblätter*, von Luise Müller; *The Flora of the Assyrian Monuments*, by D. E. Bonavia, M.D. (Westminster: Archibald, Constable & Co.).

The season has been such an abnormal one, so erratic, and sometimes so novel in its results, that we may not regard it as at all indicative of what will be the nature or condition of our fruit crops in future years. It is a good thing for us that the trees so early relieved of their fruit did not, like Strawberry plants in some districts, feel the effects of the autumn rains at the roots, so as to induce a new sap-flow, and an outbreak of flower-buds—that would have been a disaster. As it is, the moisture has helped to plump up the bloom-buds on all fruit trees, and we may look next year for normal crops with some natural anticipations. *A. D.*

EXPANDING SHOW BOARDS FOR CHRYSANTHEMUMS.—In the *Gardeners' Chronicle* for December 9, 1893, p. 727, you refer to an "Expanding Show-board" for Chrysanthemums, exhibited by Messrs. Cannell & Sons, of Swanley, at the meeting of the Floral Committee of the National Chrysanthemum Society on December 5, which you state that a patent has been applied for. In submitting this board to the committee, Messrs. Cannell, by some inadvertence, omitted to acknowledge the fact that, in all essential respects, the show-board put forward as "Cannell's Expansion Board," was but a copy of the expanding board submitted by me to the Floral Committee of the Royal Horticultural Society on November 14 last, which board came under the notice of Mr. H. Cannell, in his capacity of a member of that committee. Messrs. Cannell had my written consent to use this board, but an acknowledgment of the source of the invention would not have been altogether out of place. I need scarcely add, that no patent not obtained by the "first and true inventor" would be worth the paper or parchment it was written on. *Charles E. Shea, The Elms, Fooks Cray, Kent, December 11, 1893.*

COLOURED FOLIAGE.—I read the notes on the colour of foliage in autumn, which appeared in your issue of December 9, with much interest, but may I be allowed to say, that most of the gorgeous tints there mentioned may be enjoyed in our gardens during many months of the year, of course I mean by planting those trees and shrubs that possess varied and beautiful tinted and coloured foliage. It has been to me for many years a matter of astonishment that such has not been the practice. Among our trees we have golds, purples, silvers, bronzes, light green, dark green, almost black, and many forms of variegation, and with these, and a little careful consideration, lovely, and for months permanent, combination of colour and form may easily be produced. I am now only writing of the deciduous trees, &c., but there are numerous hardy evergreens that may also be used, or a mixture of both. This last, however, requires more skill to manage properly. Of the first, where beautiful and vivid grouping of colour can be produced from the Elder alone, we have the golden-tipped, the golden variegated, and the silver, the useful silver-spotted or grey, the green and the scarlet-berried variety, and the dark green cut-leaved, light in form and elegant all of them. With these plant the *Prunus Pissardii* with its crimson leaves, and in spring its lovely blossom; the shewn on the *Acers*, in many colours; the *Negundo alba* variegata, or its twin in all but the glowing yellow, the variety "aurea variegata." There are also the finely brilliant forms of the Japanese *Acers*. How lovely all these are! The golden-leaved *Laburnum*, the golden-leaved *Lilac*, the golden-leaved *Weigela*, and many others, then and there all tend to brighten and enrich the whole garden when judiciously used, and several of these are good autumnal "colourers" also. Then why, I ask, are they not more sought for and used? Why are not such permanent garden effects more enjoyed? I have planted nearly all the above and several others with much satisfaction to myself if to no one else. I have also made some groups of "colour" by the aid of the gold, the silver, and other variegated *Hollies*, mixed with *Yews*, as a dark green, with the blue, grey, and gold varieties of *Lawsoniana* or *Young's Golden Juniper*. Then there are numbers of *Ferns* as greens, and many coloured grasses. I hope I am not taking too much of your valuable space by thus briefly calling attention to what I believe is a neglected Art in gardening, this arrangement of coloured foliage, with or without floral decorations intermixed. *Harrison Weir, Sevenoaks.*

—None of your correspondents have named the *Salisburia* as to colour of foliage on p. 718. Miss Marianne North considered it the most beautiful of all trees for autumnal tints, and this year the

colour is a lovely pale gold, which continues long after the leaves have fallen on the grass. In a wet season, or with early frosts, the beauty is not seen; but this year it has been most beautiful. Some of the species of *Vines* also have been marvellous in their tints. *E. Bitton.*

THE TRADE IN CHRISTMAS TREES.—Whilst on a business call at Messrs. Fromow & Sons' nursery establishment at Turnham Green, just recently, I was struck with the very extensive stock of the common Spruce of all sizes, from quite pigmy plants up to handsome specimens of 10 and 12 feet in height. I was curious to know the number of these Christmas trees which passed through their hands, chiefly into London and the suburbs, during this festive season. Judge of my astonishment when I was told that 20,000 was approximately the amount which they cleared. I was quite prepared to hear Mr. Joseph Fromow state 5000 as about the number sold, but the larger number was altogether a surprise. In one block stood, I should think, quite a thousand of small neat trees 2 to 3 feet in height, all potted up ready for delivery. Many of the larger ones had quite sufficient roots to have ensured their safe removal for transplanting with ordinary care and attention. Thinking of this large number of trees for Christmas festivities, afterwards my thoughts dwelt on the still larger number of children (and older people, too), who would derive a deal of pleasure and innocent amusement wherever these decorated trees form the most important feature in many an evening entertainment. The only possible regret could be that the vast majority of these trees would be dead in a few weeks time, instead of thriving later as ornaments in the landscape. *H.*

HEELING-IN BROCCOLI.—In the county of Kent at a distance from the sea, Broccoli of all varieties suffer more or less from frost if the winter be severe, hence heeling-in becomes a necessity. It is my practice to begin this operation in the month of November, carrying it on when the land is not in a sticky condition into December. It is easily done by taking a few spadeful of soil at the end of a row of plants, and bending the first plant down to an angle of 50°, taking out the soil behind the next one and throwing it down on the stem so as to keep that plant in the position it has been laid, pressing the soil firmly over and around the stem. If the Broccoli is to be lifted up with good balls of soil, this is done with the early varieties; they should be dug and planted the head facing north on a sheltered border. The plants as taken up require but small space, and the ground previously occupied by them may be prepared for other crops. The varieties which are found to do well are Knight's Protecting, Goshen, and Ledsham Latest, not the hardiest, but one of the best flavoured varieties of Broccoli; *Victoria* and *Model*—these are the latest. For early use, *Snow's Winter White*, *Osborn's ditto*, *Walcheren*, *Early Penzance* (a small grower of upright habit), *Veitch's Self Protecting*, these are early varieties that should be lifted so soon as the curd shows itself. *H. Markham, Mereworth Castle.*

PEACH AND NECTARINE LIFTING.—It is generally recognised that the month of November is the best month in the year for lifting and replanting the above, but it may be carried on, if necessary, in the present month, provided the weather is not in any degree frosty. The subject of root-pruning of young orchard trees has been much discussed in these pages recently, and many gardeners seem agreed that, if these trees are well planted at first, and are afforded plenty of head room, they rarely require their roots to be cut off or pruned, unless growth be strong and coarse, or the trees be not fruitful. The roots must then be dealt with. There is, however, a great difference between orchard trees and Peaches on a wall. These are sometimes planted too close together, more perhaps for variety's sake, or the clothing of the wall quickly. However, be that as it may, when space is limited, if growing in rich soil, the wood will soon become too rank for good fruiting, and root-pruning or replanting must be resorted to. The latter method is to be preferred, as by it the deep-seated roots may be brought near to the surface and spread out, and the danger of roots striking downwards averted for several years. There is scarcely a limit to the size of a tree that may be replanted, provided due care be taken, be it a Peach, Plum, &c., and the trees generally set a lot of bloom-buds the following season, and unfruitful trees rarely fail to fruit the second year. Always begin to take up or root-prune a tree by throwing out

a trench 2 feet wide at fully 5 or 6 feet away from the main stem of large trees, and at proportionately less distance for small ones, and this trench should be kept clear of soil, and fully 2 feet in depth. Having done this, first remove the surface-soil down to the roots nearest the top, gradually removing bit by bit, and then undermine, always using a fork, and work inwards towards the tree. Any roots that have gone downwards should, if they cannot be dug up without great labour, be severed, carefully preserving and tying in damp straw all others. It is a job that does not admit of hurry, as the roots are brittle and easily broken. Having prepared the future station of the tree, spread out the roots at various depths, after pruning away damaged parts and suckers, being careful not to put the root-stock nearer the foot of the wall than 7 or 8 inches. If the border is not a new one, lime rubbish, old plaster, and some small quantity of rotten manure may be added to the staple. Never plant on a loose bottom, or allow the soil overlying the roots to be other than firm. A mulching should be placed over the roots. As all soil, however firm, sinks during the winter, no transplanted tree should be nailed or otherwise fastened to the wall before March, except by placing some string across it in several directions merely with the idea of keeping it in place. I have shifted very large trees of *Plums* with good results, but the work should be done, if possible, as soon as the leaves begin to fall, and the following season the soil should have a renewing of the mulching, and be watered abundantly early in the season, for should the soil get dry, the trees would get a check from drought and give but scanty crops that season. *H. Markham, Mereworth Castle, Maidstone.*

POINSETTIAS AND OTHER PLANTS AT GRIMSTON PARK, YORKSHIRE.—Among the beautiful things to be observed in the gardens of the Grimston Park, not the least are the plants of *Poinsettia pulcherrima*, between two and three hundred in number, and ranging from 6 inches to 4½ feet in height; the heads of bracts of many of these plants measure 14 inches across. The plants were disposed among and backed up with *Adiantums* and other *Ferns*, the group being edged with *Euphorbia jacobinæ* and *Calanthe Veitchii*. *Eucharis amazonica* is another plant which is well done at Grimston; it is planted out in boxes of slate, and these fine specimens are at present flowering freely. The gardens at Grimston have always much to interest a gardener, well managed as they are by Mr. John Clayton. *Paxtonian.*

BELGIAN ORCHID GROWING.—In reply to "W. H. B.'s" inquiry concerning Belgian Orchid compost, I give below a description of the material used by one of the largest and most successful growers in Belgium. Instead of peat, as used in England, the fibrous roots of *Polypodium vulgare*, a *Fern* indigenous to Great Britain and the northern part of the Continent, are employed. The lumps are brought in from the woods and dried, all thick roots being first removed, and when dry, the finer part is more or less carefully extracted by sifting it in a fine meshed sieve, taking into consideration whether the plants to be potted are of a terrestrial or epiphytial nature. When so far prepared, the roots, roughly cut up with a chopper, are then ready for being mixed with moss. The latter is chiefly of the variety with large heads. After being picked in the usual way, it is likewise chopped up and mixed in an equal quantity of fibre, as far as *Odontoglossums*, *Lycaste*, and similar sorts are concerned; but a smaller quantity is used for *Cattleyas*, *Lælia*, &c. The superiority of this kind of compost consists in its greater durability; it is, therefore, less liable to turn sour, and the plants may remain for a longer period in their pots undisturbed, to the evident benefit of their roots and general condition. Silver sand, charcoal, and loam are rarely, if ever used. *H. H.*

EARL'S COURT PRIZE MONEY.—I think the time has come when all those exhibitors who have not received the prize money awarded to them at the series of Earl's Court shows should take concerted action in the matter. It appears to me that the best course to adopt is to take proceedings against the officials as a means of bringing matters to a head. I am far from being desirous that any annoyance should be caused these gentlemen, but as many exhibitors were put to considerable personal expense in conveying their exhibits to and from the shows, they should be reimbursed the outlay. Some of them can ill afford any loss. I would suggest that a meeting of exhibitors be called, and some course decided upon. As the matter at present stands, it is

little better than a grave scandal. If there is a prospect of the money being paid, let as much be said to allay alarm; if there is not, then I think there is cause for immediate action being taken. *A Sufferer*. [It has been publicly stated that the illness of one of the officials is the cause of the delay. Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 28.—Present: Dr. M. T. Masters (in the chair), Prof. Church, Mr. McLachlan, Mr. Bunyard, Rev. W. Wilks, Dr. Bonavia, and Rev. G. Henslow (Hon. Sec.).

rarely now seen. The present tree is eighty years old, but never fruited before. Dr. Church observed that being closely allied to *Theobroma cacao* or *Chocolate*, it would be interesting to examine the seeds for theobromine.

Primula capitata and *Basal Rot in Daffodils*.—The following communication was received from Rev. C. Wolley Dod, Edge Hall: "I have been engaged for several years in investigating that mysterious phenomenon, basal rot in Daffodils. The Scientific Committee have assured me (after repeated examination of bulbs sent by me) that no specific cause of it can be detected. I am enquiring whether there is anything analogous to it in any other plants—viz., death from general unsuitable conditions, commencing at the juncture between the root and the bud, and producing decay there, partial or entire. I have noticed something similar in some Himalayan Primroses, especially *Primula Stuarti*, which I have ceased to

growing on *Jasminum revolutum*, was received from Mr. F. W. Burbidge, of the Trinity College Botanic Gardens, Dublin. He observes that "it does nearly as well on *Forsythia viridissima* and *F. suspensa*, as well as on Ivy. Indoors in a warm house, *Pelargonium*, *Fuchsia*, and *Crotons* seem to suit it best. We had it growing on a zonal *Pelargonium* which was placed in the Jasmine on a west wall last May, and it now forms a wiry net-like mass 10 feet high and 8 feet wide. It often twists upon itself." An examination of the suckers or haustoria showed that the *Cuscuta* often preyed upon itself whenever two branches were spirally twisted together. As far as a few observations can be trusted, the roots of the thicker of the two stems always penetrated the other. It frequently fixed itself to the surface of the leaves of the Jasmine as well as around the stems and petioles.

Preserving Fresh Fruit in Carbonic Acid Gas.—The following communication was received from Mr. W. Sykes, of Woodleigh, East Dalwich, being a description of experiments suggested at a meeting of the Scientific Committee on July 25:—"On August 23 I put down some Apples, Pears, Plums, Tomatoes, and eggs, but am sorry to say that, so far, my experiments with carbonic acid gas are unsatisfactory. It does not appear to check the ripening or decomposition, and it gives the fruit a peculiar flavour. The Apples have a musty, coddled taste. With the Plums the gas centres round the stones. In the Tomatoes there is a sharp, forbidding, pungent taste throughout, which leaves them after standing twenty-four hours in the air. I allowed the gas to pass through the washing-bottle into the tins, the natural air escaping through a pipe. After the fresh air had escaped (tested with a lighted match), I closed the latter pipe and let the gas work itself dead slow. After giving them all a good application (three dozen taking in both applications some six hours) I went through them again, opening the escape-pipe mentioned above to scour out, then I reclosed it with pliers before closing the entrance-pipe, the gas had worked dead slow, the top and bottom bulging out. The pressure at the gauge stood at 5 lb. The water in the washing-bottle was fresh boiled and put into the washer (just bearable), being changed for every dozen tins. I did not exhaust the air, and found with this test of a week that the Tomatoes were sweating equal to those kept for over a fortnight after the air was exhausted. Some *Coreopsis*, white *Marguerites*, and *Nasturtiums* were put under the same process (August 23). The first kept well, and after being in water looked none the worse; the white of the *Marguerites* turned to a pale chocolate beyond recovery, and the *Nasturtiums* collapsed into a withered heap." Professor Church observed that the failure might have been due to an insufficient time having been allowed for the atmospheric air to diffuse. He added that much carbonic acid had been proved to exist around Mangold roots when turfed over, which undoubtedly acted as a preservative.

DECEMBER 12.—Considering the lateness of the season, the meeting in the Drill Hall, James Street, Westminster, presented some interesting features. Orchids being numerous and in many cases of rarity, and the display of *Chrysanthemums*, Ferns, foliage plants, and fruit well represented.

Floral Committee.

Present: J. Marshall, Esq., in the chair; and Messrs. J. Laing, J. Walker, G. Gordon, G. Paul, R. Owen, H. Herbst, R. Dean, H. B. May, C. F. Bause, E. Stevens, F. Ross, C. J. Jeffries, F. Barr, T. W. Girdlestone, J. D. Pawle, W. Furze, W. Bain, T. Godfrey, T. Baines, C. E. Shea, H. H. D'Ombrian, C. Noble, J. Bennett-Poë, and W. Watson.

A group of choice and well-grown Ferns was contributed by Mr. H. B. May, Edmonton, including *Pleopeltis fossa*, *Pteris tremula densa*, *Polypodium angustatum*, *Acrostichum irioides*, *Polypodium nigrescens*. The last named is an extremely interesting Fern, from the nest in which the spores are produced, resembling impressions caused by a punch. There was also a first class specimen of *Platycerium aethiopicum* (stemmaria), having fronds—which are divided towards the end into two lobes—nearly 3 feet long (First-class Certificate) (Silver Flora Medal).

Messrs. Hugh Low & Co., Bush Hill Nurseries, Enfield, again staged a large group of well-flowered *Cyclamens* (Silver Flora Medal).

A pretty group of miscellaneous plants came from Messrs. John Laing & Sons, Forest Hill, S.E., but they suffered from being placed in a dark part of the Hall. There were well-grown *D. aëneas*, including



FIG. 117.—*SENECIO MACROGLOSSUS*: LEAVES, DEEP GREEN, GLOSSY; FLOWERS, YELLOW. (SEE P. 756.)

Pears and Fungicides.—With reference to the remedies suggested by Mr. Massee, Dr. Masters inquired of Mr. Bunyard as to his experience in their use. He replied that growers were frequently deterred from employing any poisonous preparations in consequence of the carelessness of the men from their want of realising the dangers involved in using them, so that they preferred to employ sulphur, and especially the "black" or impure sort.

Tamarix dimorpha.—Mr. Henslow remarked that the two species common in Egypt, *T. articulata* and *T. nilotica*, corresponded with the two forms of *Casuarina* exhibited by Dr. Masters at the last meeting, who observed that *T. gallica* not infrequently develops the two forms on the same plant.

Sterculia nobilis, R. Br.—A fruiting specimen of this plant was received from Syon House. A synonym is *Southwellia nobilis*, of Salisbury's *Paradisus Londinensis*. It has been known to fruit in this country, but Dr. Masters observed that it is

cultivate because the base of the bud (I use bud in its botanical sense of crown from which the leaves sprout) is so apt to rot into pulp. In *P. capitata*, however, of which I have grown and flowered thousands during the last fifteen years, no winter bud is ever formed. Mr. G. Wilson tells me that in his garden at Wisley it is a hardy perennial, but with me it invariably dies if left out in winter. The tissues are not destroyed by hard frosts, for after a hard winter the leaves in the centre of the tuft often continue green in February, but rot seems to commence at the base, as in the specimens enclosed, and the open leaf-tuft invariably rots off before spring, being often still green. I should be glad of an opinion whether the case is likely to be analogous to that of basal rot in Daffodils?" Mr. Wilks corroborated Mr. Dod's experience, as he found the plants died in a similar manner in his garden. The specimen was forwarded to Kew for examination.

Cuscuta refracta.—A specimen of this parasite,

the useful and prettily-variegated narrow leaved *D. Doucetii*, a number of well-flowered plants of *Odontoglossum grande*, some *Cyclamens* in flower, *Pavetta borbonica*, *Nicotiana colosea* variegata, and a plant of *Manettia bicolor* (Silver Flora Medal).

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr., Mr. Bain), again showed *Primula Forbesii*, also some sprays of *Costus igneus* bearing their orange scarlet flowers about 2 inches across (First-class Certificate). A Botanical Certificate was awarded to *Massonia amygdalina* from the same exhibitor. This is a new species, and its small white flowers are highly perfum-d.

Mr. H. Balderson, Hemel Hempstead, had *Primula sinensis* variety called Henry Balderson.

Messrs. Jas. Veitch and Sons, Chelsea, staged a number of *Nepenthes* with good pitchers. *N. Amesiana* from *N. Rafflesiana* × *N. Hookeriana*, was awarded a First-class Certificate; the pitcher is green and marked prettily with red. Others included were *N. Chelsonii*, *N. Curtisii* superba with dark coloured long pitchers. *N. Barkei* excellens, a magnificent pitcher with intense purple mouth; and the narrow-pitched *N. cincta* (Silver Flora Medal).

A very interesting collection of flowers, for the most part old neglected plants of our greenhouses, was sent by the Director of the Royal Gardens, Kew. *Brownea Crawfordii* from *B. grandiceps* × *B. macrophylla*, has an immense corymb of flowers of soft crimson, with very prominent anthers of the same colour; *Manettia bicolor* is an old plant from South America, of twining habit, with small leaves and tubular flowers of scarlet, tipped with yellow. This is an old inmate of the greenhouse, but now neglected. *Bomaria oligantha* has tubular flowers of orange-scarlet with orange tips; *Thunbergia* (*Hexacentria*) *mysorensis* is another old plant, and bears most handsome flowers of rich bronze and yellow, arranged in racemes. *Senecio macroglossus*, or the Cape Ivy, see fig. 117, is a flower of pale yellow colour, profusely produced on the young wood; it bears some resemblance to a single flowered *Chrysanthemum*. *Calpurnia aurea* (the Natal Laburnum (see fig. 115), is described fully in another column. *Bomaria Patacensis* was exhibited as a good corymb of striking orange-crimson flowers. All of these plants flowering in mid-winter are well worth the attention of gardeners.

Mr. Robert Owen, nurseryman, Maidenhead, sent a wonderfully fine collection of *Chrysanthemums* for the season of the year.

At the back was a line of twenty-seven bottles, each containing three fine blooms, and in front of these were ten show boards, each containing twelve blooms, the incurved varieties being by themselves; the incurved Japanese were also together, and the varieties with spreading florets. A considerable proportion of these were seedlings raised by Mr. Owen. The collection well deserved the Silver Flora Medal it received. Awards of Merit were made to Mr. Owen for Japanese Mrs. Marian Bourne, a large and full incurved flower, the colour lilac-pink, with a silvery reverse, but not particularly novel in colour. It is likely to be useful for exhibition purposes.

Good Gracious, an American variety, remarkable for delicate tint of soft pink, and profusion of small petals which imparts to it a novel and distinct appearance.

Other fine and promising varieties were John Noble, a bold and massive incurved Japanese, the colour a kind of chocolate crimson, the reverse of the petals which are very broad and stout, being bronzy-gold—quite distinct in character; Secretary Farson, reddish-salmon base with golden centre; Mrs. Smith Rigland, a large broad-petalled incurved Japanese, having a reddish cinnamon surface, and a rich golden reverse, a variety not seen at its best on this occasion, but with a great future before it; Robert Owen, a very fine golden incurved; Walter Surman, a somewhat formal incurved Japanese, but large and full, having a bronzy-salmon base and a golden reverse; Francis T. Brage, a bright golden reflexed; Mr. H. Brownhead, pale cinnamon with a golden reverse; Mrs. A. Rogers, pure deep yellow of the *W. H. Lincoln* type; Mlle. Thérèse Pancoucke, a broad-petalled incurved white; Golden Gate, rich deep gold, extra fine; Mrs. F. Denne, delicate lilac-pink, deepening to cerise, a broad-petalled incurved Jap.; Abbé Mendenhall, pale canary, with a golden centre; Golden Wedding, rich gold, very fine; Nevens, white; Lord Brooke, in strict incurved character; Charles Blick, a reflexed gold; and Le Prince du Bois, a pale-coloured variety of considerable promise. From Mr. C. H. Ratsch, St. Peter's Buildings, Bournemouth, came Japanese R. B. L. Monk, which is like a broad-petalled *Gloriosum*, with

curious whorled florets, white in colour, and quite distinct in character. Mr. William Wells, nurseryman, Earlswood, had Mrs. L. C. Madeira, a fine yellow incurved, but with a tendency to come oval in the centre, which destroys its symmetry; and one or two single varieties from his large collection.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien (Secretary), Dr. M. T. Masters, F.R.S., De B. Crawshaw, C. J. Lucas, T. Statter, E. Hill, H. M. Pollett, H. Ballantine, J. Jaques, T. B. Hayward, and J. Douglas.

The objects brought to the meeting were, for the time of year, both interesting and numerous. Messrs. J. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, exhibited a group of rare and exceptionally-fine Orchids, and were awarded a Silver Banksian Medal. Among their plants were *Cypripedium* × *Oenone* (*Hookera* ♀, *superbiens* ♂). Award of Merit; *C. × T. B. Hayward*, with several flowers; *C. × Harrisianum* superbum; a spike of *C. × Sedeni candidulum*, with five flowers open, and several buds; *C. × Therites* (*Sedeni* ♀, *Lindleyanum* ♂); *C. × Creon* (*Harrisianum* superbum ♀, *oenanthum* superbum ♂); *C. × Pylæus*, *C. × Lathamianum*, the singular *Dendrobium* × *Stratiotes*, *Sophrontia grandiflora* with thirty flowers; a fine plant of *Oncidium divaricatum*; *Oncidium cheiroporum*, with ten spikes; *Cattleya × leucoglossa* (*fausta* × *Loddigesii*), *C. × Phedone* (*intermedia* ♀, *maxima* ♂); the singular *Dendrobium glomeratum* (Botanical Certificate); and varieties of *Lælia anceps*, &c.

Messrs. F. Sander & Co., St. Albans, arranged an effective group, in which *Lælia anceps* were remarkable, among them being the varieties *Sanderiana*, *Percivaliana*, *Barkeriana*, and *Oweniana*. Mexican *Lælia* were *L. × Crawshawana*, *L. Gouldiana*, *L. autumnalis alba*, &c., together with *Brassia Leeana*, a species allied to *B. candida*; *Chysis Oweniana*, a species with pink and white flowers; *Odontoglossum Rossii* excellens, *Zygopetalum rostratum* (Award of Merit), *Aganisia ionontera*, *Cypripedium × nitens* Sander's var., *C. × Masonianum*, *C. × Ridolfianum*, and *C. × Lynchianum* superbum (Silver Banksian Medal).

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, had an extensive group, in which were fine plants of twenty distinct species and varieties of *Cypripedium*, two of the most remarkable being *C. × Pitcherianum*, Williams' var. and *C. × Leeana giganteum*. Among other good plants included in this group were *Calanthe × Mylesii*, pure white; *Lælio-Cattleya × Blesensis*, *Lælia acuminata rosea*, varieties of *L. anceps*, *L. Gouldiana*, *Oncidium obrysatum*, *Odontoglossum crispum*, *O. aspersum*, and *O. Insleayi splendens* (Silver Banksian Medal).

Messrs. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, staged a group of rare Orchids, and obtained an award of a Silver Banksian Medal. Two very extraordinary new *Lycastes* from Peru were among the exhibits, both possibly natural hybrids. One of these, *Lycaste Imachootiana*, had the habit of *Lycaste Skinneri*, and flowers equal in size to those of that species. The broad sepals were greenish-fawn minutely spotted with purple except at the tips; petals pale yellow, with red dotted lines at the base inside; lip bright yellow, spotted with orange-red at the base and on the callus (Award of Merit). The other, *Lycaste Luciani*, had flowers equal to those of *L. lasioglossa*, and, as in that species, the lip is hairy. The sepals were spotted with pale pink, on a pale fawn-coloured ground; petals white, with a few rose dots; lip rose and white (Botanical Certificate). Another grand thing in this group was the massive white *Odontoglossum crispum* Thompsonæ, with rich dark spots on the sepals; and one which is scarcely its inferior, the fine unspotted *O. c. amplissimum*. The variety Thompsonæ received an Award of Merit. Other good plants were *Lælio-Cattleya × Stebelgolowiana* (*L. grandis* × *C. labiata*), *Cypripedium × Robinsianum* (Lowii × Parishii); *Oncidium Phalaenopsis*; a cut spike of *Cattleya labiata*, with six flowers; one of the charming scarlet *Cochlidia Noezliana*, with about twenty blooms, and *Catasetum virens*.

Messrs. Hugh Low & Co., The Nurseries, Clapton, exhibited a very fine selection of Orchids, many good *Cypripediums* being included, and among them their new *C. × Smithii* (*Lawrenceanum* × *ciliolare*), a very richly-coloured cross-bred, with flowers in which the beauties of *C. Lawrenceanum* play an important part. The group received a Silver Banksian Medal. C. W. Fincken, Esq., Hoyland Hall, Barnsley (gr., Mr. J. Milburn), again showed the

beautiful natural hybrid, *L. Finckeniana*, with six flowers on a spike (First-class Certificate). C. J. Lucas, Esq., Warnham Court, Horsham (gr., Mr. Duncan), showed *Cypripedium* *Clinkaberry-unum* × var. *Warnhamense* (*Curtisii* ♀, *Philippinensis* ♂), a very fine hybrid (see *Gard. Chron.*, July 22, 1893, fig. 18) (Award of Merit); *Dendrobium infundibulum*, *Phaius maculatus*, and *Compæretia macroplectron*.

M. Jules Hye-Laysen, 8. La Coupure, Ghent, sent a grand *Cypripedium* in his *C. × fascinatium* (*Spicerianum* × *hirsutissimum*) with very large purple-tinted flowers. It is of the same parentage as *C. × Ceres*, originally described in the *Gardeners' Chronicle*, but in this one some circumstance has brought about a much finer thing (First-class Certificate).

Baron H. Schroder, The Dail, Egham (gr., Mr. H. Ballantine), sent a gigantic inflorescence of his unique *Cymbidium Traceyanum*, one of three spikes borne on the plant this year (Cultural Commendation), also a grand spike of *Lælio-Cattleya × Nysa* (*L. crispata* × *C. Warscewiczii*) which surpasses *L. c. × Exoniensis* (First-class Certificate); *Cypripedium × Leeana superbum*, *C. × Glataca*, *C. insigne Sanderæ*, *C. i. Sanderiana*, and the rare *Brassia antherotis* (Botanical Certificate).

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr., Mr. Chapman), showed *Cypripedium venustum* Measuresianum, an extraordinary and beautiful form with white and green flowers, without any of the brown and red seen in the type (Award of Merit); the beautiful *Pleurothallis scapha* (Botanical Certificate); and *Cypripedium × Celcus*.

His Grace, the Duke of Northumberland, Sion House, Brentford (gr., Mr. G. Wythes), showed an effective group of cut spikes of *Calanthes* set up with Maidenhair Ferns (Silver Banksian Medal); W. Vanner, Esq., Camden Wood, Chislehurst (gr., Mr. G. H. Robbins), showed *Cypripedium × pulchellum* (grande × *Sedeni candidulum*); and *C. × Io-Spicerianum*. F. Wigan, Esq., Clare Lawn, East Sheen (grower, Mr. W. H. Young), staged *Cypripedium × Wiganianum* (? *Harrisianum* × *Ashburntoniæ*), a distinct and rather striking flower. J. F. Ebner, Esq., Woodlands, Beckenham (gr., Mr. A. Waite), sent *Cypripedium × Sallieri aureum* (Award of Merit). H. Hainsworth, Esq., St. John's Park, B'ackheath, showed *Cirrhopetalum ornatisimum*.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed *Cypripedium × villosum* × *oenanthum superbum* × ? a flower of the *C. nitens* class, with purple colouring showing through the upper sepal.

M. Wells, Esq., Bloomfield, Sale, Manchester (gr., Mr. Hinde), sent *Lælio-Cattleya × exoniensis*; and E. Ashworth, Esq., Harefield Hall, Wilmalaw, Cheshire, showed *Lælia anceps Amesiana*.

Fruit Committee.

Present: P. Crowley, Esq., in the chair; and Messrs. Henry Vilmorin, G. Bunyard, G. Tabor, H. Pearson, J. Cheal, C. W. Cummins, W. Warren, T. J. Saltmarsh, J. Wright, A. Dean, J. A. Laing, W. Bates, J. Willard, C. Ross, G. Wythes, F. Q. Lane, J. Hudson, W. Balderson, G. H. Sage, J. Smith, A. H. Pearson, and R. Hogg.

The exhibits were not numerous, but a capital collection of Apples was staged by Messrs. H. Lane & Son, Berkhamsted, including a large heap of Lane's Prince Albert and King of the Pippins; also dishes of many other varieties in first-class condition. Some of the more noticeable were Norfolk Beaufin, Golden Noble, Yorkshire Greening, Peasgood's Non-such, Lady Henniker, Fearn's Pippin, Hoary Morning, Gascoigne's Scarlet, Annie Elizabeth, Bismarck, Hanwell Souring, Blenheim Orange, Court Pendu Plat, Calville Rouge Précoce (a very pretty little fruit), Warner's King, Col. Vaughan, &c. (Silver Knightian Medal).

A smaller collection of Apples and a few Pears came from Messrs. Jno. Laing & Sons, Forest Hill, S.E.; good examples of Norfolk Beaufin, Waltham Abbey Seedling, Alfriston. King of the Pippins, Bramley's Seedling, &c. The Pears were Easter Beurré and Catillac (Bronze Banksian Medal).

A fine collection of Kales was put up by Messrs. Jas. Veitch & Sons, Chelsea, including a number of variegated forms; also the Palm-tree Kale, one of the largest varieties, of dark green; Veitch's Late Curled, and Chelsea Exquisite Curled Kale. Three stems of Brussels Sprouts, Ne Plus Ultra, were from the same exhibitors (Vote of Thanks).

From the Royal Horticultural Society's Gardens at Chiswick were sent several heads of Cabbage, Christmas Drumhead (Award of Merit), and several

of the old St. John's Day Cabbage. The Portugal Kale, Couve Tronchuda, also sent, is worthy of more extended culture, there being no better early winter vegetable; although but little heart is formed, the leaves are quite tender when cooked, and the flavour is thought by many to be more delicate than the Cabbage.

Mr. Owen Thomas, the Royal Gardens, Windsor, exhibited fruits and fruiting branches of a good winter Tomato named Frogmore Selected (Cultural Commendation).

D. C. A. Cave, Esq., Sidbury Manor, Sidmouth, Devon, contributed a few fruits of a seedling Orange named Edith. The fruits were large, and in shape almost round (First-class Certificate).

NATIONAL ROSE.

REPORT OF THE COMMITTEE FOR THE YEAR 1893.

The past season, owing to the continued drought and heat, proved one of the most disastrous for Roses and Rose shows that has been experienced for many years, so that notwithstanding the loyal support of the exhibiting members at the three exhibitions held by the society, the blooms staged were, as a rule, much below the average in number, size, and quality. The competition at the show of Tea Roses held at the Drill Hall, Westminster, was good, also in several of the leading classes at Workshop, but at the Crystal Palace there were fewer Roses than at any similar exhibition for nine years. In connection with the Workshop Show, some of the stands exhibited at which were exceptionally fine, it should be stated that the success of the exhibition was greatly due to the admirable manner in which all the arrangements connected with it were carried out by the committee of the Workshop Rose and Horticultural Society, especial credit being due to Mr. H. V. Machin, Vice-President, Mr. G. J. Whall, Hon. Treasurer, and Mr. G. Baxter, Hon. Secretary.

The new catalogue of exhibition and garden Roses was issued to members early in May last, and appears to have been much appreciated. Several foreign trade growers have already followed the society's lead in introducing into their own catalogues a separate section for Hybrid Teas upon similar lines to that adopted in the Society's catalogue.

It is with much regret the committee announce the loss the society has sustained during the year through the death of one of its Vice-Presidents—the Rev. J. M. Fuller—whose valuable services as chairman at their meetings will be greatly missed. They have also to deplore the death of Monsieur J. B. Guillot, a recently-elected honorary member, and so well known to rosarians generally as the raiser of many of the choicest Tea and other Roses in cultivation.

Notwithstanding the great depression in trade which has prevailed throughout the country during the past year, the number of members as well as the number of affiliated societies has been well maintained; in fact, in no previous year, with the exception of 1892, have the present numbers been exceeded.

Financial Statement.—The committee congratulate the members upon the present satisfactory financial position of the society. The amount in hand at the beginning of the year was £31 16s. 7d., and now at its close there remains £81 19s. 3d. to carry forward to the next account, the total expenditure having been £699 3s. 3d., while the aggregate receipts, including last year's balance, were £781 2s. 6d. It should here be stated that a special fund was raised early in the year among the exhibitors to defray the cost of printing and binding the new catalogue, so that no part of the cost of its publication has fallen on the ordinary funds of the society. Although more than the usual number of changes have taken place in the *personnel* of the non-exhibiting members, the amount received in subscriptions was nevertheless in excess of that of any previous year.

ARRANGEMENTS FOR 1894.

In order to meet the requirements of exhibitors in all parts of the country, it has been decided by the committee to hold next year a Southern Show, a Metropolitan Show, and a Northern Show. The early exhibition of Tea Roses at the Drill Hall, Westminster, will therefore be discontinued, and a Southern Show be held instead of it at Windsor, in connection with the Windsor, Eton, and District Horticultural and Rose Society, on Wednesday, June 27. The Metropolitan Show will take place at the Crystal Palace on Saturday, July 7, while the Northern Show will be held at Halifax on Thursday,

July 19, in conjunction with the Salterhebble and District Rose Society.

Members' Privileges.—Members subscribing £1 will be entitled to two private view tickets and four transferable tickets, the latter admitting at the same time as the general public, while subscribers of 10s. are entitled to one private view ticket and to two transferable tickets. Each of these tickets is available for any one of the society's exhibitions. Members joining the society for the first time next year will also receive a copy of the society's new descriptive catalogue of exhibition and garden Roses. Members alone are allowed to compete at the society's exhibitions.

There are two classes of helpers to whom the committee feel especially grateful. In the first place to those local secretaries who have either secured for the society new members, or, where this has not been possible, have done all in their power to keep within its ranks those they had previously obtained; and secondly, to all those who, by the gift of special prizes or by contributing to the prizewinners' fund for the new catalogue, have enabled the committee to maintain the high standard of prizes offered in the schedules. Among the local secretaries two are worthy of special mention—Mr. C. J. Grahame, late local secretary for Croydon, who again secured for the society a large number of new subscribers; and Mr. C. F. Hoare, who has for many years rendered the society such good service as local secretary for Beckenham, and to whose zeal and energy the Society is indebted for the largest number of subscribers ever obtained by any individual member of it.

NATIONAL CHRYSANTHEMUM.

DECEMBER 11.—A meeting of the General Committee took place at Anderton's Hotel, Fleet Street, on the above date; Mr. R. Ballantine presiding over a large attendance. A hearty vote of thanks was passed to Messrs. E. D. Shuttleworth & Co., Albert Nursery, Peckham, S.E., for their generous contribution of a fine collection of plants, free of charge, for the annual dinner. The chairman reported that the dinner was a great success, and that in extent and quality the December Exhibition had surpassed all expectations. The desire for a change of place for the exhibitions of the Society came up once more on a report made by the chairman as to an examination he had made of the Westminster Town Hall, and the examination of the Hall on the Thames Embankment, showing by their measurements that they were wholly inadequate to contain the exhibits, while the terms were very high, and the conditions severe. A resolution was passed to the effect that a sub-committee be appointed to look for suitable buildings for the purpose, and report in October next, but as a sufficient number was not nominated, the proposal fell to the ground. An interim report of the schedule sub-committee was presented, and the dates of the various exhibitions in 1894 were confirmed as follows:—Early Autumn Show, October 10, 11, and 12; Great November Show, November 6, 7, and 8; Early Winter Show, December 4, 5, and 6. And the list of judges for the same nominated by the sub-committee was also passed. The Secretary submitted a financial statement, showing that the receipts from all sources amounted to £653 odd; the reserve-fund having reached the sum of £54. The award of Medals made by the Arbitration Committee at the December Show were confirmed, and fourteen new members were elected, bringing the total for the year up to 164. An able, exhaustive, and interesting Paper on "Judging Chrysanthemum Blooms," prepared by Mr. Charles E. Shea, was then read by the Secretary, and some discussion followed. It is intended that the paper shall be fully considered on a future occasion. A hearty vote of thanks was passed to Mr. Shea for his paper, and also to the Chairman for presiding.

DECEMBER 13.—The last meeting of the Floral Committee for the present year took place at the Royal Aquarium on the above date, but, with the exception of a large collection of Chrysanthemums, numbering about 300 blooms, from Mr. R. Owen, Maidenhead, little else was produced. First-class Certificates of Merit were awarded to Japanese Owen Thomas, a grand variety, raised by the exhibitor, a large incurving flower, in the way of W. H. Lincoln, but richer in colour and broader in the petal; and to Good Gracious, an American variety, described in our report of the Royal Horticultural Society's meeting. Secretary Farson, rosy bronze-gold, also from Mr. Owen, was Commended; and a charming

white variety, in the way of Mdle. Thérèse Rey, the Committee wished to see again; this variety was also shown by Mr. H. J. Jones, Lewisham. The Elms Expanding Show-board was shown by the inventor, Mr. Charles E. Shea, and was very highly commended by the Committee as an ingenious invention, and as enabling exhibitors to use their old show boxes.

TREES AND SHRUBS.

PINUS INSIGNIS.

I HAVE read with great interest Mr. Ward's account of the fine tree of *P. insignis* at Longford Castle; and as he asks if there are finer trees in the United Kingdom, I send measurements of one we have here at Redleaf. This tree was one of the first sent out in this country, at least, I have been told so by one of our leading nurserymen, who remembers the time very well. I measured the tree this morning, and I find that the height is just 70 feet; circumference, at 1 foot from the ground, 12 feet 9 inches; at 3 feet, 11 feet 1 inch; 6 feet from the ground, 10 feet 4 inches; extreme width of branches, 70 feet. This tree is somewhat crowded up by other trees, and Rhododendrons and other shrubs planted underneath have no doubt spoiled the shape of it, as on one side it has lost most of its branches, but the tree itself is in perfect health. In the year 1881, this tree measured 66 feet 6 inches in height; at 3 feet from the ground, 10 feet 4 inches; at 6 feet, 9 feet in circumference—so that it has only gained 3 feet 6 inches in height in twelve years.

This is different from the growth made in its young state, as, fortunately, I have measurements taken of this same tree. In the year 1842 it was in height 2 feet 4 inches, probably planted at that time; in 1844, height 7 feet 1 inch; in 1846, height 13 feet 4 inches; and in 1848 it was 19 feet 6 inches in height and 1 foot 8 inches in circumference—so that in the first years of its existence it grew 17 feet 2 inches in six years. There is one peculiarity of the tree here, which is, that I have never known it to be injured by frosts or cutting winds, whereas during the last fifteen years we have lost several young trees, from 10 to 20 feet high, through the severe winters we have had in that time.

It may be that the first plants sent out were of a harder nature or different variety in some way to others. I should like to hear what other correspondents have to say on this subject, as no doubt it would be more largely planted than it is were it not so often cut down and spoiled by frosts. I think that it is one of the handsomest trees we have of the Pine tribe. We have several fine specimens of other species of Conifers, and I shall be pleased to send an account of them some time, if of interest to your readers. *W. H. Holah, Redleaf, Dec. 11, 1893*

THE ROSARY.

THE BANKSIAN ROSES.

WHEN the loose rambling shoots of these have successfully passed through the winter, we are favoured with one of the most pleasing sights Roses provide. Unfortunately this section is only half-hardy, and many disappointments have been caused by injudicious planting. The Banksian Roses are more generally grown in pots by nurserymen than in the open border, and this fact allows of early spring planting, so that the Rose becomes partly established before meeting its first winter in the open. It is very necessary that a warm and sheltered position be chosen. I think the finest I have seen were rambling over the porch of a gamekeeper's cottage; the shelter of the surrounding trees being very acceptable to this Rose. Even with the advantage of a sheltered position, it is essential to have a somewhat dry border for the roots. The great advantage of this lies in the earlier and more thorough maturation of the summer growth, and the lessened susceptibility to the effects of frost

They are well worth the trouble of watering during summer, and a little attention in this respect will ensure some grand shoots for the following season's bloom. These may also be aided considerably by the prompt removal of growth that has flowered, thus directing the whole of the plant's energies to the right purpose.

It is not sufficiently well known that there are two distinct Roses sold under the name of White Banksian—one possessing only solitary blooms, and the other nodding panicles or trusses. In Mr. Baker's "Classification of Garden Roses," published in these pages (1885), the group of Banksians is divided into four species; and one of these (*Fortuneana*) has become confused with the white form of the Banksian proper—*Rosa Banksia alba*. There is a vast difference between the two species. The White Banksian was introduced from China in 1807 by Mr. W. Kerr, and has numerous trusses of very double blossoms, which rarely exceed the size of a shilling-piece. *R. Fortuneana* (*Fortunei*, and *Fortune's White*), on the other hand, produces solitary blossoms of considerable size—often as large as a five-shilling piece. This was introduced from the same country in 1846. It is much the strongest grower, and also the hardiest of the Banksians, which will account for its having been frequently sent out from nurseries as the White Banksian. It may be as well to point out a very easy way of recognising the two species by their leaves, and as they are almost evergreen, this will prevent the disappointment of planting the wrong one. The leaves of *R. Banksia alba* are oblong-lanceolate, obtuse, and very hairy at the base of the middle nerve; the wood very seldom carrying any prickles. *R. Fortuneana* has ovate-lanceolate leaves, much brighter in colour than the former, and shining on both sides. It also possesses a few prickles. *R. Banksia alba* has been styled the "Rose without a thorn," and is probably more deserving of the title than any other species.

The yellow Banksian is represented in double and single form, and the double is sweeter scented, freer, and harder than the white variety. This also blooms in clusters, and is of the same size as the true white. *R. Banksia lutea* was introduced to England by the Royal Horticultural Society through their representative, Mr. J. Damper Parks, who brought it home in 1824. The white Banksian has a distinct Violet scent; but I think the yellow has the most showy appearance. A. P.

MARKETS.

COVENT GARDEN, December 14.

We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. Ed.]

PRICES rule as last week.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arum, per doz. bl. ... 4 0-5 0	Narciss, French, white, 12 bunches ... 2 0-3 0
Bouvardias, per bun. 0 6-1 0	— yellow, 12 bun. ... 1 6-3 0
Camellias, doz. blms. 1 0-2 6	Orchids:—
Carnations, 12 blms. 1 6-2 6	Cattleya, 12 blms. 6 0-12 0
Chrysanthemums, 12 bunches ... 2 0-6 0	Odontoglossum crispum, 12 blms. 2 0-6 0
— doz. blooms ... 0 6-3 0	Pelargoniums, scarlet, p. 12 bun. 4 0-6 0
Eucharis, per dozen 4 0-6 0	— 12 sprays ... 0 6-1 0
Gerardia, per dozen 2 0-4 0	Roses, French, p. doz. 0 9-1 6
Hyacinth, Roman, 12 sprays ... 0 9-1 0	— p. box of 100 2 0-3 0
Lilac (Fr.), per bun. 4 0-6 0	— Tea, per dozen 0 6-2 0
Lilium Harrisii, doz. 6 0-9 0	— coloured, dozen 2 0-4 0
Lily of the Valley, per dozen sprays ... 2 0-3 6	— yellow (Maréchal), per doz. 2 0-6 0
Maiden Hair Fern, 12 bunches ... 4 0-6 0	— red, per dozen ... 1 0-1 6
Marguerite, 12 bun. 1 6-3 0	Tuberose, 12 blms. 0 4-0 6
Mignonette, 12 bun. 2 0-4 0	Violets, Parmé, p. bn. 2 6-4 0
Primula, dble. p. bun. 0 6-1 0	— Czar, per bun. 2 0-2 6
	— English, per doz. 1 6-2 0

ORCHID-BLOOM in variety.

CHRYSANthemum-BLOOM very plentiful, price is low in consequence.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 6 0-12 0	Ficus elastica, each 1 6-7 6
Aspidistra, per doz. 15 0-30 0	Foliage plants, doz. 12 0-42 0
— specimen, each 7 6-21 0	Marguerites, per doz. 6 0-12 0
Chrysanthemums, doz. 6 0-9 0	Mignonette, doz. pots 6 0-9 0
— large plants, each 1 6-2 0	Palms, various, each 2 0-10 0
Cyperus, per dozen 4 0-10 0	— specimens, each 10 6-84 0
Dracena, each ... 1 0-5 0	Pelargonium, scarlet, per dozen ... 3 0-4 0
Erica, various, p. dz. 9 0-24 0	Poinsettias, per doz. 12 0-15 0
Evergreen Shrubs, in var., per dozen ... 6 0-24 0	Primulas, per dozen 4 0-6 0
Ferns, various, doz. 4 0-9 0	Solanums, per doz. ... 9 0-12 0
— small, per 100 4 0-6 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, per bush. ... 1 6-7 0	Pine-apples, St. Michael, each ... 2 6-7 6
Cobs, per 100 lb. ... 32 6-...	
Grapes, per lb. ... 1 0-3 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Beans, French, lb. ... 0 4-...	Lettuces, per doz. ... 1 3-2 0
Beet, red, per dozen 1 0-2 0	Mushrooms, punnet 1 3-2 0
Carrots, per bunch ... 0 4-0 6	Mustard and Cress, punnet ... 0 2-...
Cauliflowers, each ... 0 2-0 4	Parsley, per bunch ... 0 2-0 3
Celery, bundle ... 1 0-1 3	Shallots, per lb. ... 0 3-...
Cucumbers, each ... 0 4-1 0	Tomatoes, per lb. ... 1 0-...
Endive, per dozen 1 3-1 6	Turnips, per bunch ... 0 4-0 6
Herbs, per bunch ... 0 3-1 0	
Leeks, per bunch ... 0 3-...	

POTATOS.

The mild open weather with abundance of good and cheap vegetables, has a very depressing influence on our Potato market. Stocks continue to increase and prices for most samples continue to fall. J. B. Thomas.

SEEDS.

LONDON: Dec. 13.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report to-day's market thinly attended, with but little business doing. All descriptions of Red Clover seed, both foreign and English, keep firm. Alsike White and Trefoil are steady. Italian and Perennial Rye grasses continue weak. In Spring Tares the tendency is still upwards. Canary seed shows a further advance. Advices just received from Constantinople, bearing date Dec. 5, 1893, give, as the total stocks then existing in all Turkey, the small number of 25,000 bags only. Mustard and Rape seed are unchanged. As regards Peas and Haricots, there is nothing fresh to note.

FRUITS AND VEGETABLES.

BOROUGH: December 12.—Quotations:—Savoy, 3s. to 6s.; Cauliflowers, 4s. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 1s. to 1s. 9d. per dozen bunches; Onions, 5s. 6d. to 6s. 6d. per bag; English, do., 6s. 6d. to 7s. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

SPITALFIELDS: December 12.—Quotations:—Savoy, 3s. to 6s.; Cauliflowers, 4s. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 1s. to 1s. 9d. per dozen bunches; Onions, 5s. 6d. to 6s. 6d. per bag; English, do., 6s. 6d. to 7s. per cwt.; Apples, 1s. 3d. to 6s. per bushel.

FARRINGTON: Dec. 14.—Quotations: Brussels Sprouts, 2s. to 2s. 6d. per bushel; Parsnips, 55s. to 60s. per ton; Carrots, 45s. to 50s.; Onions, 8s. to 9s. per cwt.; Celery, 8s. to 9s. per dozen; Apples, cooking 4s. 6d. per bushel; do., Blenheim, 6s. to 7s. do.; English Grapes, 1s. 2d. to 1s. 6d. per lb.; Almeida, 11s. per barrel; English Tomatoes, 6d. per lb.

POTATOS.

BOROUGH AND SPITALFIELDS: December 12.—Prices to-day ranged from 35s. to 100s. per ton.

FARRINGTON: Dec. 14.—Quotations:—Main Crop, 80s. to 90s.; Bruces, 60s. to 70s.; Magnums, 45s. to 55s.; Imperators, 40s. to 45s.; Sutton's Abundance, 60s. to 70s. per ton.

LONDON AVERAGES: Dec. 13.—Hebrons, 80s. to 100s.; Regents, 50s. to 70s.; Snowdrops, 70s. to 80s.; Main Crop, 60s. to 90s.; Magnums, 40s. to 80s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 9, and for the corresponding period in last year:—1893: Wheat, 28s. 9d.; Barley, 29s. 1d.; Oats, 18s. 4d. 1892: Wheat, 28s. 10d.; Barley, 25s. 1d.; Oats, 17s. 4d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 154s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s.; new Mixture, 115s. to 130s.; and Straw, 35s. to 55s. per load.

CHRISTMAS CATTLE.

ISLINGTON: Dec. 11.—There was a falling off, as compared with last year, in the supply of both cattle and sheep; notwithstanding the trade was not exceptionally brisk, and no material alteration in price has to be recorded. In beasts,

Scotch cattle were the great feature of the exhibition, but all others were of high quality. Prices ranged from 4s. 6d. to 5s. 2d. per 8 lb. The number put on sale was 4640 head. Sheep numbered 13,550—nearly 2000 less than last year. They consisted chiefly of Downs, but there was a good show of the usual classes. Prices ranged from 4s. 8d. to 5s. 8d. Remembering the bad season for both breeding and feeding, some surprise may be felt at the market result as a whole.



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	Above (+) or below (—) the Mean for the week ending December 9.	ACCUMULATED.			More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.						Below 42° difference from Mean since January 1, 1893.
0	4 +	23	11	+ 500	— 15	15 +	234	53.3	0	23
1	4 +	13	27	+ 295	+ 28	2 +	185	25.7	9	32
2	3 +	14	28	+ 425	— 33	2 —	162	19.8	13	36
3	0 aver	18	35	+ 501	— 10	2 —	160	19.8	21	42
4	1 +	14	40	+ 641	— 7	2 —	151	18.4	19	40
5	1 —	12	34	+ 546	— 11	1 —	151	21.5	26	43
6	4 +	24	7	+ 469	— 13	3 +	187	37.9	9	36
7	3 +	26	9	+ 742	— 85	0 aver	176	28.6	9	35
8	0 aver	30	16	+ 669	— 39	2 —	159	30.0	26	45
9	2 +	23	11	+ 540	— 75	0 aver	199	31.0	13	32
10	1 +	31	11	+ 561	— 62	1 +	172	28.7	13	35
*	1 +	35	2	+ 811	— 51	2 —	172	25.9	28	53

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts:—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts:—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

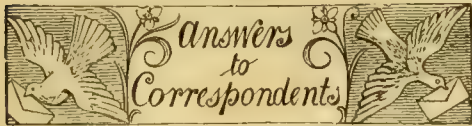
The following summary record of the weather for the week ending December 9, is furnished from the Meteorological Office:—

"The weather continued very unsettled, with frequent falls of rain in all parts of the kingdom. Thunder and lightning were experienced at many of our western and north-western stations towards the end of the period.

"The temperature was slightly below the mean in 'England, S.' and just equalled it in 'England, E.' and 'England, S.W.' but in all other districts it was above the normal, the excess in Scotland amounting to 4°. The highest of the maxima were registered on the 6th, and ranged from 55° in 'Scotland, E.' to 50° in 'England, E.' The lowest of the minima occurred at the commencement of the week, when the thermometer fell to 15° in the 'Midland Counties' and 'England, S.W.' 17° in 'England, S.' 18° in 'England, E.' and to between 21° and 30° in nearly all other districts.

"The rainfall greatly exceeded the mean in 'Scotland, N.' and was rather more than the normal in the other Scotch districts, and in 'Ireland, S.' In most other districts there was a slight deficit.

"The bright sunshine was much less prevalent than during the preceding week; it slightly exceeded the mean value in most parts of England, but showed a deficit in Ireland and Scotland. The percentage of the possible duration ranged from 28 in the Channel Islands, and 26 in 'England, S. and S.W.' to 9 in 'Scotland, E. and W.' and in 'England, N.W.' while in 'Scotland, N.' the percentage was less than 0.5."



BOOKS: *T. L.* The one that will give you the best methods of cultivating vegetables is Vilmorin's, *The Vegetable Garden*, published by John Murray, London.—*A. E. P.* There are a few manuals on forcing Cucumbers, Tomatos, Melons, and Mushrooms, but none on forcing in general.

BOOKS ON NURSERY PRACTICE: *A. Z.* You should take service in a first-class nursery where the subjects you wish information about are largely grown. As a help, get *Loudon's Encyclopedia of Plants*—it may be purchased at a second-hand bookstall; *A Manual of Conifers*, Veitch: published by the author, 544, King's Road, Chelsea; *Handbook of Hardy Trees, Shrubs, and Herbaceous Plants*, by Decaisne & Naudin, edited by W. B. Hemsley (Longmans & Co., London); *The Nursery Book*, by Bailey; New York Rural Publishing Co.

CROP OF TOMATOS: *X. Y. Z.* We cannot say what weight of fruit a plant of the Old Red variety would carry, as a plant would live for several years, and produce a greater weight each year. A Tomato, treated as an annual, and kept to one stem, would be capable of producing 20 to 25 lb. of fruit when fruited in the warmer part of the year. We have no belief in the so-called "heavy croppers." All are such under the best methods of cultivation, and at the natural fruiting season. The nearer you get to the original form the more freely they set their flowers in the dull season, but in the late spring and summer-time there is not much difference between them.

GREASE BAND FOR WINTER MOTH: *F. S.* We do not think any injury is likely to accrue to the bark of the tree if the band is properly applied. The reference to American blight is probably a slip of the pen?

LIME: *The Librarian.* Lime in its simple form acts as a fertiliser in soils deficient in that substance. It also acts as an ameliorator of heavy land, and it is useful in soils containing much vegetable matter, such as are most kitchen gardens that have been long in cultivation. It is present in most artificial manures.

NAMES OF FRUITS: *W. S. L.* Apple, Hoary Morning.—*K. H. H.* Lamb Abbey Pearmain.—*A. Chapman.* 1, A very excellent small Pear, resembles Baronne de Melo; 2, Marie Louise D'Uccle; 3, Passe Colmar.—*S. F.* 1, Overripe and much bruised; 2, Beurré d'Arenberg; 3, Vicar of Winkfield.—*J. G.* 1, London Pippin; 2, Scarlet Nonpareil; 3, Winter Hawthornden; 4, Not known, we had some difficulty in making out numbers, so indistinct was the pencil on the old newspaper.—*B. B., Exeter.* Pear, Vicar of Winkfield.

NAMES OF PLANTS: *K. H. H.* *Eulalia japonica foliis striatis.*—*G. E. A.* 1, *Crassula lycopodioides*; 2, *Opuntia* sp.; 3, *Opuntia microdasys*; 4, *Mesembryanthemum* sp.; 5, *Mamillaria texana*; 6, *Alpinia* or *Zingiber*; 7, *Sansevieria zeylanica*. Those not determined should be sent when in flower.—*Subscriber.* *Asparagus decumbens.*—*N. C. C.* *Lælia anceps alba*. No doubt you are right in the name of this plant, but your flowers are larger than any we have seen.—*F. R., St. Albans.* 1, *Cassia corymbosa*; 2, *Pittosporum undulatum*. Apple next week.—*W. M.* 1, Send in flower; 2, *Taxus adpressa*; 3, *Taxodium distichum*; 4, Send in flower; 5, *Diosma ericoides*; 6, *Peristrophe (Justicia) speciosa*; 7, *Eriostemon nerifolius.*—*December.* 4, *Pteris serrulata cristata*; 5, *Pteris cretica*; 6, *Selaginella stolonifera*; 7, *Adiantum decorum*.

COMMUNICATIONS RECEIVED.—*G. Phippen.*—*H. B.*—*P. Viola*, Paris.—*T. H.*, Japan.—*J. A.*—*F. W. S.* (we have not received the photographs).—*W. & Son.*—*L.*, Cannes.—*H. F.*—*E. B.*—*J. K. B.*, Utrecht.—*E. W. Hackett*, Adelaide.—*J. B.*—*W. K. W.*—*E. O.*—*H. M.*—*T. Meehan*.—*R. E. W.*—*J. H.*—*J. Bywater.*—*J. Mayne.*—*D. T. F.*—*H. C. F.*—*H. W. W.*—*E. M.*—*H. Lynch.*—*A. D.*—*B. W.*—*J. A.*—*M. Cuthbertson.*—*T. H. C.*—*F. L.*—*O. R.*

DIED.—Mr. CHARLES GODFREY, in the sixty-sixth year of his age, at 8, Seventh Avenue, Bush Hill, Enfield. The deceased had been in the service of Messrs. Hugh Low & Co., Clapton, and of Mr. J. Fraser, late of Lea Bridge, for many years.

INCREASED CIRCULATION.

Notice to Advertisers.

THE GARDENERS' CHRONICLE

FOR

SATURDAY, JAN. 6, 1894,


WILL CONTAIN AS A

SUPPLEMENT

A

Sheet Almanac.

As a large EXTRA circulation of this Number is guaranteed, it will be a very valuable medium for Advertisements.

 Advertisers desirous of securing Space in this Number are requested to communicate with the Publisher, not later than Wednesday, January 3, 1894.

"THE PUBLISHER,"

41, WELLINGTON STREET, STRAND,
LONDON, W.C.



12oz. and 15oz. FOREIGN, of above sizes, in boxes of 100 feet & 200 feet super. ENGLISH Glass, cut to buyers' sizes, at lowest prices delivered free & sound in the country, in quantity.



GEORGE FARMILOE & SONS

LEAD, GLASS, OIL, and COLOUR MERCHANTS.
34 & 36 JOHN STREET, WEST SMITHFIELD, LONDON, W.C.
Stock lists and prices on application. Please quote Chronicle.

BARB WIRE.

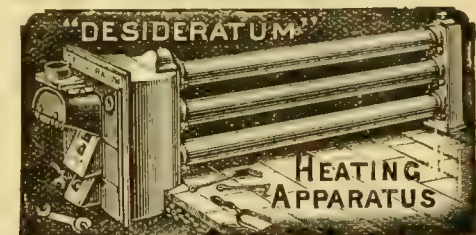
CATALOGUES FREE

ON APPLICATION TO
THE LONGFORD WIRE CO.
(LIMITED),
WARRINGTON.



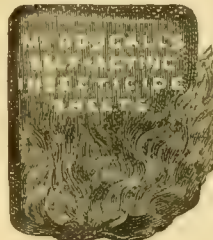
JONES & ATTWOOD.

STOURBRIDGE.



For GREENHOUSES and OTHER BUILDINGS.
CATALOGUE AND ESTIMATES FREE.

EXTERMINATE ALL INSECT PESTS



Without Injury to Foliage.

No HOT COKES.

Vastly Superior to Tobacco Paper,

And Adopted by—

Sir Trevor Lawrence, Bt.; Baron
Schroder; Rt. Hon. Jos. Cham-
berlain; Sir Leopold Rothschild,
Bart.; Messrs. Veitch, Chelsea;
Sutton, Reading; Carters', Holborn

Easy, Certain, Safe, and Cheap.

Sheets, 9d. (for 1000 cubic feet in parcels) 9s. per Dozen,
of 1 dozen, also 1/2, 1/3, and 1 gross. } at 13 to 12.

McDougalls' Liquid Insecticide.—For Use under Glass.

" Garden and Fruit Tree Wash.—For Outdoor Use.

" Plant Food or Manure.—For Vines, Fruits, & Plants.

Wasp and Vermin "Chokers"—For exterminating Wasps and Ants, Rats, Rabbits, Mice, Moles, &c., and all Vermin that Burrow.

No. 1 at 2s. per dozen, or 22s. 6d. per gross; No. 2 at 5s. per
dozen, or 57s. 6d. per gross.

All Free from Poison. Patentees and Sole Makers—

McDOUGALL BROS. { London: 10, Mark Lane.
Manchester: 68, Port Street.
Glasgow: 70 to 78, King Street.

FROM NURSERYMEN AND SEEDSMEN.

GISHURD COMPOUND, used since 1859 for Red Spider, Mildew, Thrips, Greenfly, and other blight: 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake, for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURDINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

CARSON'S PAINT

Patronised by 20,000 of the Nobility, Gentry,
and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES,
Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations.

Liquid Non-Poisonous Paint for Inside of Conservatories, &c.

Prices, Patterns, and Testimonials, Post-free.

GROVE WORKS, LOMBARD ROAD, BATTERSEA,
LONDON, S.W.;

and BACHELOR'S WALK, DUBLIN.

Telegrams—"CONSERVATORIES, LONDON."

Telephone, No. 4652.

NOTICE to Builders, Nurserymen, Market Gardeners, Timber Merchants,
AND THE TRADE GENERALLY.

RELIABLE
BARGAINS.NOT SECOND-HAND
GOODS.

WM. COOPER'S SEVENTH ANNUAL CLEARANCE SALE.

Office: 755, OLD KENT ROAD, LONDON, S.E.

Works (the Largest Steam Horticultural Works in the World): 747 to 755, OLD KENT ROAD, LONDON, S.E.

Show Ground: DEVONSHIRE GROVE (adjoining).

Being the end of the Season, I am again induced to offer my Stock on hand at ridiculously Low Prices, to make room for my
SPRING STOCK, for SIX WEEKS ONLY, COMMENCING DEC. 4. LAST DAY of SALE, SATURDAY, JAN. 13, 1894.

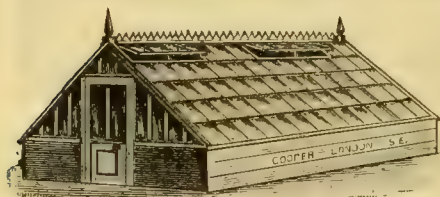
CONDITIONS OF SALE.

Goods are offered subject to being on hand on receipt of reply. Cash to accompany all orders, and prices to be strictly *nett*. All orders will be executed in rotation, and carefully packed and put on rail, except those otherwise stated.

P.O.O. payable at 794, Old Kent Road; Cheques crossed "L. and S. W. Bank."

GREENHOUSE DEPARTMENT.

THE AMATEUR FORCING HOUSE, TENANT'S FIXTURE (Span-roof).



These houses are offered at an exceedingly low rate, and should be readily approved by both amateur and professional gardeners, as brickwork, which is very expensive to a small house, is entirely dispensed with.

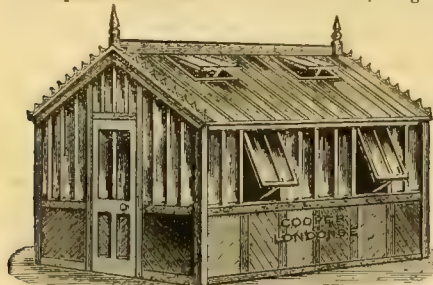
The utility of such a house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request but almost hitherto unknown.

Specification.—Framework substantially constructed of red deal; the whole of sides, and 2 ft. 6 in. of ends, boarded with well-seasoned tongued and grooved matchboards. Half-glass door, complete with rim lock and brass fittings, in one end; glass 16 oz. throughout, English cut. Ventilators supplied according to size of house, and stays necessary for opening same; stages for plants each side of house, all woodwork painted one coat of good oil paint, and the whole structure securely packed and placed on rail.

Lot.	Length.	Width.	Height.	Usual Price.	Sale Price.
				Packed on rail.	Packed on rail.
1 to 7	7 ft.	5 ft.	7 ft.	£2 10 0	£2 0 0
8 to 10	8 ft.	5 ft.	7 ft.	3 0 0	2 5 0
11 to 12	9 ft.	5 ft.	7 ft.	3 10 0	2 10 0
13 to 22	10 ft.	7 ft.	7 ft. 3 in.	4 19 0	3 10 0
23 to 29	12 ft.	7 ft.	8 ft.	5 10 0	3 15 0
30 to 41	15 ft.	10 ft.	8 ft. 6 in.	7 15 0	5 10 0
42 to 48	20 ft.	10 ft.	9 ft.	10 15 0	7 10 0
49 to 51	25 ft.	10 ft.	9 ft.	15 5 0	10 0 0
52 to 54	50 ft.	10 ft.	9 ft.	27 0 0	20 0 0
55 to 56	100 ft.	10 ft.	9 ft.	45 0 0	25 0 0

SPAN-ROOF VILLA CONSERVATORIES.

Adaptable for the lawn of a villa residence, being well and substantially-built, constructed of the best materials, and artistically finished, with diagonal panels and barge-boards. The framework is composed of 2 in. by 3 in. red deal, the lower part doubly-lined with tongued and grooved matchboards, and the roof properly fitted with sashes, which facilitates fixing or removing of same without disturbing glass.



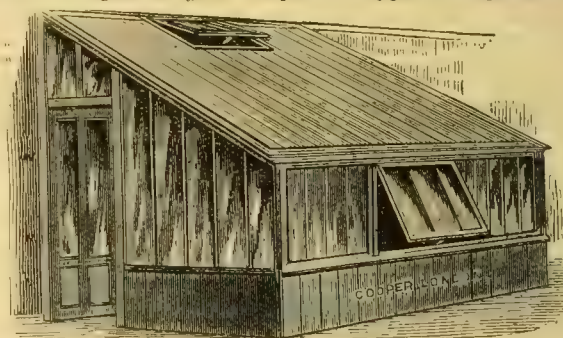
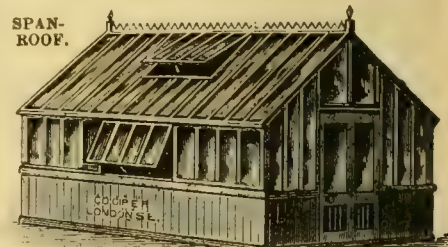
The houses are fitted with a half-glass door, complete with rim lock, brass fittings and key, and is supplied with lattice staging for each side, footpath the entire length; gutters, down pipes, suitable ventilators, and necessary ironwork for opening same. All woodwork painted two coats of good oil paint, glass cut to sizes, and all parts securely packed on rail. Prices:—

Lot.	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
					Packed on rail.	Packed on rail.
343 to 351	9 ft.	6 ft.	7 ft.	4 ft. 6 in.	£7 10 0	£5 10 0
352 to 358	12 ft.	8 ft.	8 ft.	5 ft. 6 in.	10 0 0	7 0 0
359 to 363	15 ft.	8 ft.	8 ft. 6 in.	5 ft. 6 in.	12 0 0	8 10 0
364 to 371	20 ft.	9 ft.	9 ft.	6 ft.	16 16 0	12 0 0
372 to 374	25 ft.	9 ft.	9 ft.	6 ft.	21 0 0	15 0 0

21 oz. for Roof 5 per cent. extra.

"AMATEUR" SPAN-ROOF AND LEAN-TO GREENHOUSES. Tenant's Fixtures.

Made especially for Amateurs at a nominal figure, thereby coming within reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectable by any handy-man or gardener in a few hours. Framework is substantially constructed of red deal, the lower part being filled in with well-seasoned tongued and grooved matchboards. The house is fitted with door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and stages for each side, and good 16 oz. glass throughout. All parts securely packed, and put on rail.



Lot	Span-roof	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
						Packed on rail.	Packed on rail.
57 to 71	Span-roof	7 ft.	5 ft.	7 ft.	4 ft.	£2 16 0	£2 5 0
72 to 76	"	8 ft.	5 ft.	7 ft.	4 ft.	3 10 0	2 15 0
77 to 108	"	9 ft.	5 ft.	7 ft. 3 in.	4 ft.	4 0 0	3 0 0
109 to 121	"	10 ft.	7 ft.	7 ft. 6 in.	4 ft. 6 in.	5 0 0	4 0 0
122 to 149	"	12 ft.	8 ft.	7 ft. 6 in.	5 ft.	6 0 0	4 10 0
150 to 170	"	15 ft.	10 ft.	8 ft. 6 in.	5 ft.	8 10 0	6 10 0
171 to 176	"	20 ft.	10 ft.	9 ft.	5 ft. 6 in.	12 0 0	9 0 0
177 to 184	"	25 ft.	10 ft.	9 ft.	5 ft. 6 in.	17 0 0	12 0 0
185 to 189	"	50 ft.	10 ft.	9 ft.	5 ft. 6 in.	30 0 0	23 0 0
190 to 197	"	100 ft.	10 ft.	9 ft.	5 ft. 6 in.	50 0 0	39 0 0
198 to 201	"	30 ft.	10 ft.	8 ft. 6 in.	5 ft.	20 0 0	14 0 0
202 to 211	Lean-to	7 ft.	5 ft.	7 ft.	4 ft.	2 10 0	2 0 0
212 to 221	"	8 ft.	6 ft.	7 ft. 3 in.	4 ft.	3 10 0	2 15 0
222 to 225	"	12 ft.	8 ft.	8 ft.	5 ft.	5 10 0	4 0 0
226 to 228	"	15 ft.	10 ft.	8 ft. 6 in.	5 ft.	8 0 0	5 15 0

SPAN-ROOF FORCING HOUSE.

The illustration shown will convince all practical minds of the importance and utility of this class of house for Gentlemen, Nurserymen, Market Gardeners, and all those who require a cheap strong House for Forcing, or growing Cucumbers, Tomatoes, Melons, &c.

Specification.—Built for brickwork, 3 feet high, of thoroughly well-seasoned red deal; roof ventilation according to size; door at one end; all 21-oz. glass; painted one coat.

Carefully Packed on Rail.

Lot	Usual Price.	Sale Price.
	Packed on rail.	Packed on rail.
229 to 235	£9 0 0	£6 0 0
236 to 242	11 0 0	8 0 0
243 to 246	14 10 0	11 0 0
247 to 250	17 0 0	12 0 0
251 to 255	21 0 0	16 0 0
256 to 257	25 0 0	20 0 0
258 to 260	40 0 0	25 0 0
261 to 267	48 0 0	33 0 0
268 to 281	55 0 0	40 0 0
282 to 342 Ventilating boxes for Side Walls	4 9	2 3

For full Specification of Sale, see three-page advertisement in the *Gardeners' Chronicle* of December 2.

SALE CATALOGUE POST-FREE.

WILLIAM COOPER, 747 to 755, OLD KENT ROAD LONDON, S.E.

HEATING! HEATING!! HEATING!!!**THE THAMES BANK IRON COMPANY**

Undertake the complete erection of **HEATING APPARATUS** for **GREENHOUSES, OFFICES, PUBLIC BUILDINGS, &c.** Have the largest stock of **BOILERS, PIPES, and CONNECTIONS** in the Trade to select from, and invite inspection of same.

BOILERS of the latest and most approved class, including the

Patent HORIZONTAL TUBULAR, with WATER BARS; CAST-IRON SADDLE, with WATERWAY-END, &c.; VENTILATING GEAR AND VALVES.

AWARDED THE ONLY GOLD MEDAL at the **INTERNATIONAL HORTICULTURAL EXHIBITION, 1892,** for **HOT-WATER APPLIANCES.**

ILLUSTRATED CATALOGUE, 1s. PRICE LIST FREE.

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Telegraphic Address—"HOT-WATER. London" Telephone No. 4763.

**THOMAS GREEN & SON, LTD.,**

LEEDS and LONDON,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered

HOT-WATER BOILERS,

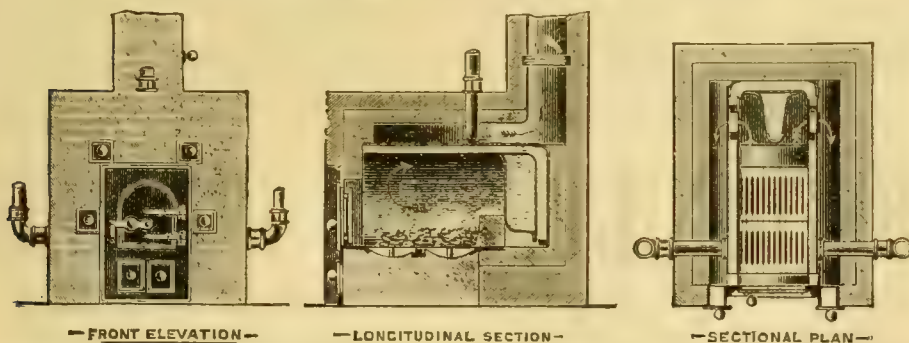
Others with **TUBES, SHELVES, & HOLLOW** or **ORDINARY CAST-IRON GRATE BARS.**

SADDLE BOILERS, With **WATERWAY BACKS** and **WELDED BOILERS,** any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

The **MUNICIPAL** and **TUBULAR** ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the **FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.**

MUNICIPAL PATTERN BOILER, THE BEST EXTANT.



—FRONT ELEVATION—

—LONGITUDINAL SECTION—

—SECTIONAL PLAN—

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

SIZES AND PRICES.

MB 1	3 ft. 2 in. long by 2 ft. 0 in. wide by 2 ft. 0 in. deep		1000 ft.	Price £15 0 0
MB 2	4 0 " by 2 0 " by 2 0 "	Calculated to	1280	" 21 0 0
MB 3	6 0 " by 2 3 " by 2 6 "	heat 4-in. piping	2200	" 32 0 0
MB 4	6 6 " by 3 0 " by 3 0 "	as follows:—	4000	" 60 0 0
MB 5	8 6 " by 4 0 " by 3 9 "		7000	" 85 0 0

SPECIAL BOILERS made to suit all purposes and requirements, and Estimates given for **HEATING APPARATUS.**

We make Boilers from £3 10s.

WHEN WRITING FOR PRICE LISTS, PLEASE STATE APPROXIMATE REQUIREMENTS.

OUR PRODUCTIONS MAY BE OBTAINED FROM THE LEADING MERCHANTS, IRONMONGERS and SEEDSMEN, or DIRECT FROM

THOMAS GREEN & SON, LTD.,
SMITHFIELD IRONWORKS, LEEDS; and SURREY WORKS, LONDON.

HUNDREDS OF REFERENCES CAN BE GIVEN IF REQUIRED.



JAS. BOYD & SONS,

HORTICULTURAL BUILDERS and HEATING ENGINEERS,

PAISLEY.

HORTICULTURAL STRUCTURES

of every description, in either Wood or Iron, or both combined.



Wooden Chapels, Shooting Lodges, Tennis Courts, Cottages, &c.



Hot-water Apparatus for warming Buildings of every description.

Illustrated Circulars Post-free.

Complete Catalogue, 3s.

HILL & SMITH,

BRIERLEY HILL, STAFFORDSHIRE,
And 118, QUEEN VICTORIA STREET, LONDON, E.C.



NEW PATTERN

TREE GUARD,

"The Porcupine."

The maximum of utility and the minimum of cost.

Constructed of strong Iron Uprights and Galvanised Barbed Steel Wire.

Price 10s. 6d.

TESTIMONIAL.

"The Whittier, Herefordshire."

"Dec. 28, 1887."

"DEAR SIRS,—I have now had an opportunity of trying your PORCUPINE TREE GUARDS, and they seem quite to answer my purpose, so you may send me 50 more, as before. I enclose cheque for your account."

Yours truly,

RICHD. GREEN.

Messrs. Hill & Smith.

ORCHID BASKETS, RAFTS, BOATS, AND CYLINDERS, AND ALL GARDEN SUNDRIES.

SEND FOR A

PRICE LIST

from the Largest Manufacturer in the Trade.

H. C. SMYTH,

21, GOLDSMITH STREET, DRURY LANE, W.C.

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS.—The Registered Address for Foreign and Inland Telegrams is "Gardchron, London."

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SCALE OF CHARGES FOR ADVERTISING.

HEAD LINE CHARGED AS TWO.

4 Lines ..	£0 3 0	15 Lines ..	£0 8 6
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6 " ..	0 4 0	17 " ..	0 9 6
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8 " ..	0 5 0	19 " ..	0 10 6
9 " ..	0 5 6	20 " ..	0 11 0
10 " ..	0 6 0	21 " ..	0 11 6
11 " ..	0 6 6	22 " ..	0 12 0
12 " ..	0 7 0	23 " ..	0 12 6
13 " ..	0 7 6	24 " ..	0 13 0
14 " ..	0 8 0	25 " ..	0 13 6

AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20s.
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Page, £8; Half Page, £4 10s.; Column, £3.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements,
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BONES! BONES!! BONES!!!—Any size from dust to 1 inch, at 8s. per cwt., at our works; or 10s. per cwt. Carriage Paid; less than 1 cwt. at 10s. per cwt. at our works. Terms, Cash with Order.

E. S. WILES AND LEWIS, Bone Crushers, St. Albans.

C. BEESON'S MANURE.—Composed of Blood and Bone. The Best Fertiliser for all purposes. Sold in tins, 1s., 2s. 6d., and 5s. 6d.; also in air-tight bags, ½ cwt., 6s.; 1 cwt., 10s. Full directions for use sent with each tin and bag. 1 cwt. and above sent carriage paid, cash with order. C. BEESON, Bone Mills, St. Neots, Hunts.

"12, Knowle Road, Brixton, London.

"I have tried this fertiliser on various garden crops, and I am able to say that it is an excellent Manure for Vegetables, Flowers, Vines, and Fruit Trees.

"A. B. GRIFFITHS, Ph.D., F.R.S.E., F.C.S."

REAL MANURE.

To make up for the loss from drought, it is absolutely necessary all should use the above immediately. Its effect is marvellous. Just one powerful ingredient makes it far superior to all others.

Mr. NOAH KNELLER, Malshanger Pk., Basingstoke

Has had his supply, and says: "The exact dimensions of one Onion, 7 inches across, 19 inches round, weight 2 lb. 9 oz.; twelve Onions weighing 34 lb., which I exhibited at Reading. Grown solely by the use of CANNELL'S REAL MANURE. A farmer said that he wished his Swedes were as big as my Onions."



H. CANNELL & SONS,
SWANLEY, KENT.

ORCHID PEAT; Best Quality; **BROWN FIBROUS PEAT** for Stove and Greenhouse use. **RHO-DODENDRON** and **AZALEA PEAT.** Samples and Prices of WALKER AND CO., Farnborough, Hants.

BOILING WATER OR MILK.

E P P S ' S

GRATEFUL—COMFORTING.

C O C O A

BREAKFAST—SUPPER.

"KILLMRIGHT,"

For Destruction of all Insect Pests and Mildew.

THE STOTT DISTRIBUTOR CO. (Lmtd.),
Barton House, Manchester.

COMPLETE ERADICATION of all **INSECT PESTS** in **GREENHOUSES** and **FRAMES** is thoroughly insured by using the

LETHORION (VAPOUR CONES).



They are now universally admitted to be the only reliable Fumigator, being thoroughly uniform in strength, and are not liable to deterioration from atmospheric changes. They cannot injure the most delicate flower or plant. Scale and mealy-bug may be completely eradicated by using the Cones double strength.

PRICES:—For frames of 50 to 100 cubic feet, No. 1 cone, 6d. each; 500 ft. to 700 ft., No. 2, 1s.; 1000 feet to 1500 feet, No. 3, 1s. 6d.

To be had from the Seed and Nursery Trade throughout the Kingdom.

Manufacturers:—**CORRY & CO., LIMITED,**
13, 15, & 16, Finsbury Street, London, E.C.

FIR-TREE OIL

SOLUBLE INSECTICIDE.

The most pleasant and reliable of all insecticides for destroying insects on plants, animals, and birds. Thousands of testimonials received from all parts of the world. Bottles, 1s. 6d., 2s. 6d., 4s. 6d., 7s. 6d., and 12s. 6d.; in bulk, 11s. per gallon, with full directions for use.

Wholesale from all Horticultural Dealers.

E. GRIFFITHS HUGHES, Victoria St., MANCHESTER.
NEW YORK—ROLKER AND SONS.

WALTON HEATH LOAM!!!

WALTON HEATH LOAM!!!

WALTON HEATH LOAM!!!

D. PITT AND SONS, Contractors, Reigate, Surrey, beg to announce that they can supply the very best quality Walton Heath Yellow Fibrous Loam, delivered into trucks, at Reigate Town Station, at 7s. 6d. per ton.

Second quality ditto, at 5s. 6d. per ton.

REIGATE SILVER SAND, at 7s. 6d. per ton.

EPPS'S ^{Selected} PEAT,

For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. **SPECIAL ORCHID PEAT**, in sack only. Rich fibrous LOAM, superior LEAF-MOULD, Coarse, Crystal, and Fine SILVER SAND, CHARCOAL, C. N. FIBRE REFUSE, fresh SPHAGNUM, Patent MANURES, FERTILISERS, INSECTICIDES, and all other Garden Requisites. **Peat Moss Litter.** The Original Peat Depot, RINGWOOD, HANTS.

ORCHID PEAT.

PREPARED, ready for use, all fibre, 10s. per sack; 5 for 47s. 6d. **SELECTED**, in blocks, very fibrous, 8s. per sack; 5 for 37s. 6d. **SECOND QUALITY**, 5s. per sack; 5 for 22s. 6d. **BROWN FIBROUS PEAT**, for Azaleas, Rhododendrons, and Ferns, 4s. per sack, 5 for 18s.; and 3s. per sack, 5 for 12s. 6d. **PEAT-MOULD, LEAF-MOULD**, and **FIBROUS LOAM**, each 2s. 6d. per sack; 5 for 10s. **PREPARED POTTING COMPOST**, 4s. per sack; 5 for 18s. All sacks included.

Send Postal Order for Sample Sack.

Special terms to the Trade. For Price List apply to **THE FORESTER, Joyden Wood, near Bexley, Kent.**

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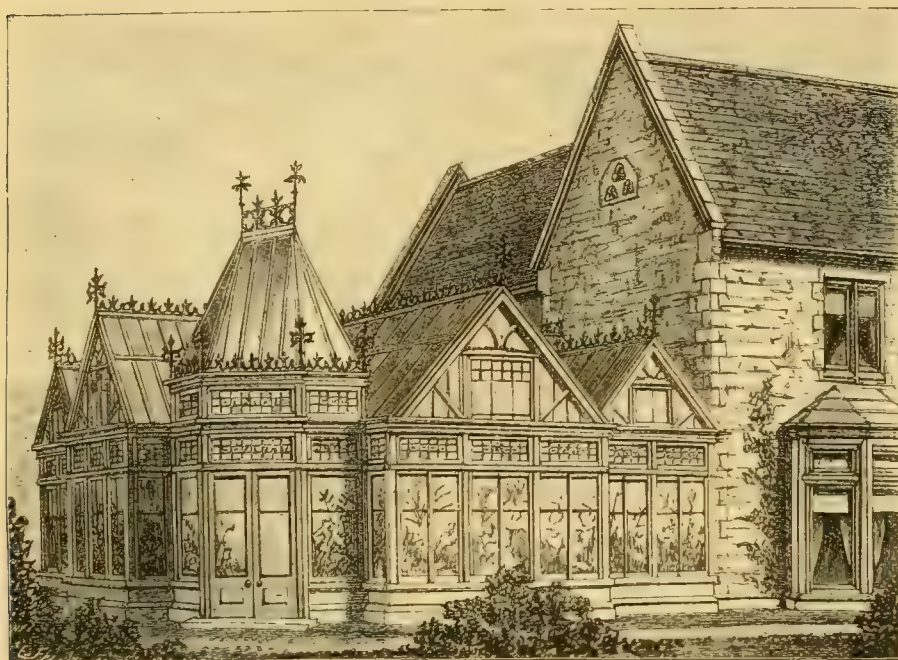
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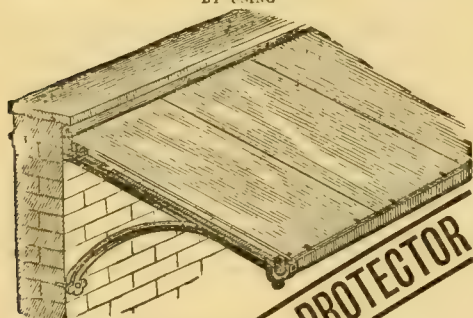
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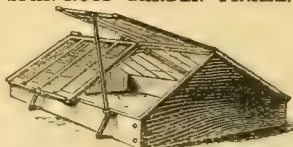
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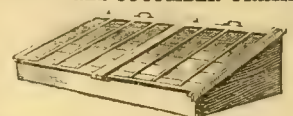
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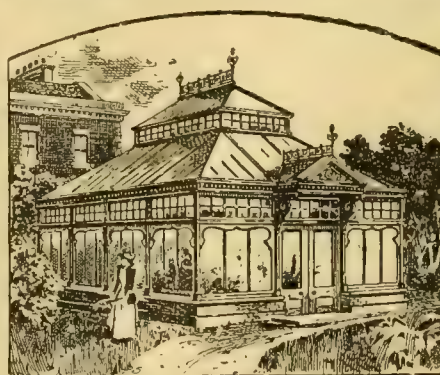


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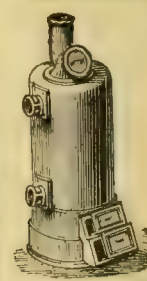
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ESTABLISHED 1841. No. 2765.

No. 365.—VOL. XIV. { THIRD }
SERIES.

SATURDAY, DECEMBER 23, 1893.

{ Regt. as a Newspaper. } PRICE 3d.
{ WITH SUPPLEMENT. } POST-FREE, 3d.

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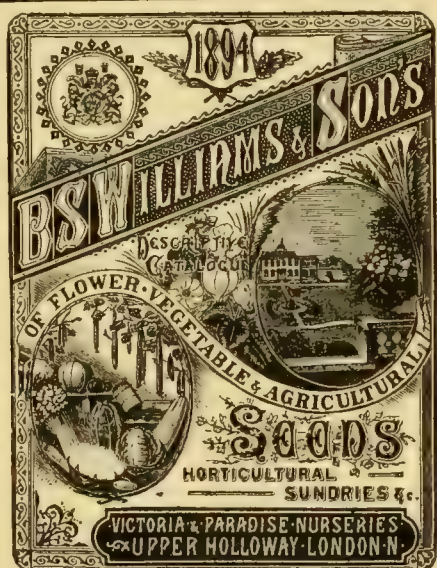
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 23, 1893.

ROSE OF JERICO.

(ANASTATICA HIEROCHUNTINA, Linn.)

RELICS of the Holy Land have in all ages been much prized by their possessors, and were often invested with an amount of superstition, which in this practical age seems to our enlightened ideas simply ridiculous. To this class belongs the Rose of Jericho, called also Rose de Marie, and Mary's Flower, on account of its being said to have expanded at the birth of our Saviour.

Although long known under the ambiguous name of the Rose of Jericho, no one has yet been able to solve the mystery, why a plant so unlike a Rose should have this designation. A writer in *Gartenflora*, Sept. 15, 1892, has discovered a plant, *Asteriscus pygmaeus*, which he says was long ago depicted on shields in old French heraldry, and though only recently described, was of early origin, belonging to the Composite family, which resembles much more a Rose than a closed Crucifer; from this, and the fact that the plant has hygrometrical properties, he deduces the idea that it is the true Rose of Jericho. On this slender hypothesis, we are asked to give up the idea that the plant known for hundreds of years as the Rose of Jericho is the true plant, because another is much more like a Rose, and also "that it must have become known to those valiant men in the East who, under unspeakable danger, were willing to deliver the distant States in the Holy Land out of the hands of the Turks." Were such slender premises to prevail, we should never be safe; for instance, when Dr. Thomson, in his excellent work, *The Land and the Book*, was describing a Syrian plant (p. 563), as a sort of vegetable, whose stems his muleteers were cutting up and chewing with great relish, he calls it the "wild Artichoke." Are we to suppose from this that we have the original Jerusalem Artichoke in the plant then described? or even that we should give up our name, i.e., Rose of Jericho, and call it by the name he dilates upon, which is the "Gulgal" of Scripture? We may here, by the way, remark, that this if established takes us back to 741, B.C., "the rolling thing" of Isaiah xvii., 13, carried before the whirlwind, and would give greater antiquity to the Rose of Jericho as a plant, though, of course, not in name. Although we cannot be certain, yet it is not unlikely that the plant which Josephus speaks of as running away from him who tries to gather it, or that the Rose plant in Jericho to which Syrach compared wisdom, because of it not being easily subject to corruption, is the *Anastatica hierochuntina*, Linn., by which name

botanists know the Rose of Jericho, yet we trace this plant to times of great antiquity, and think there is every reason to believe it to be the plant quoted in the above passages.

The plant was known to the early Arabian writers under the name of "Schad scharatelkaff," and the "Kaf maryam," of Elba Beitar reminds us of the Kaf maryam, or Mary's hand, by which name the plant is known in Egypt. Of late years in *Rose de Marie* we recognise the *Amomum Rose Sanctæ Mariæ* of Dioscorides and of *Journ. Bot.*, p. 258. The *Rosa Hierochontea* of Caspar Bauhin, *Rosa Hiericho* of J. Bauhin, figured in *Gerard's Herbal*, and also in 1613 in *Hortus Eystettensis*, and in *Lamarck's Illustration*, pl. 555, and in other places. The Rose of Jericho is a Cruciferous plant, growing in the Desert of Arabia, as well as in Syria, and has the peculiarity of curling its branches in dry weather, forming a ball of withered network, appearing quite dried up and dead, but on the appearance of rain or immersion in water, the whole plant (however dry it may have been), expands, assumes the aspect, though not the reality, of a living plant; hence the derivation of the generic name *Anastatica* from the Greek "anastasis," resurrection. There were, a few years ago, two specimens in the Museum of the Royal Botanic Garden, Edinburgh; the writer once heard a distinguished Eastern traveller explain to Mr. Sadler (the then Curator of the Botanic Society) that these were fair specimens, although he had met with larger. He said they were often a great impediment to persons when travelling in the deserts, when they accumulated in great numbers, and were blown about by the wind; they often got under and around the horses' feet, and greatly impeded their progress, and it was often with very great difficulty they were got rid of—indeed, sometimes they had to wait for a change of wind, when these light but numberless impediments were blown in a different direction.

Similar experiences are related by Dr. Thomson, who adds:—"Hundreds of these globes, all bounding like gazelles in one direction over the desert, would suddenly wheel short round at the bidding of a counterblast, and dash away with equal speed on their new course."

The Rose of Jericho is a small plant, the stems of which never rise more than 4 or 5 inches from the ground; the stems are covered with leaves and loaded with flowers, which have a resemblance to Elder flowers without their fragrance. It sheds its leaves and flowers as it withers, and the stems, bending in the middle, become entwined and form a kind of globe. This happens during great heat, but in moist and rainy weather these again open and expand to liberate the living seed.

In a country of ignorance and superstition, the alternate shutting and opening of this plant is miraculous to the inhabitants, who, devoid of philosophy, do not judge with the critical eye of more learned nations; they therefore ascribed this to an operation of heaven to make known the events of this world. With this impression the people from the various districts visit and examine the plants when they are about any special enterprise, if intending to undertake a journey, form an alliance, or conclude any affair of importance, or on the occasion of the birth of a child; if the stems of the plants are open they do not doubt of success, but if shut they renounce their project, and look upon the omen as being bad and dangerous to their interests.

The plant neither rots nor withers, but after a dozen years of complete dryness and apparent death, its "resurrection" is easily manifested by

immersion in luke-warm water. Other plants have the same hygrometric property, one of the best is *Selaginella lepidophylla*, a native of Mexico, which grows in the form of a rosette, and when dry curls up like a ball; this opens again when wetted. *W. Etherington Dixon, Assoc. Bot. Soc., Edin.*

FLORAL DECORATIONS.

By far the larger half of the flowers that are cultivated are grown for these purposes. A few words, therefore, on pleasing and effective ways of utilizing them may not be altogether out of place.

The first point to aim at, whether in the arrangement of a conservatory or the embellishment of a dinner-table, is the general effect. Strive above and before all to obtain a harmonious and beautiful whole, and, if need be, sacrifice minor details to that object. Do not, for the sake of showing off a magenta *Azalea indica*, place it among a group of *Amaryllis*; nor put in close juxtaposition a *Cattleya Skinneri* and an *Imantophyllum*; rather let one or the other blush unseen in another house. Avoid planting *Zinnias*, *Pentstemons*, and *China Asters* close together, or using orange *Marigolds* as a background for *Geraniums*, or surrounding a bed of *Phlox Drummondii* with a border of purple *Violas*. I should hardly have ventured on such prohibitions as the foregoing, had not my personal experience supplied instances of their disregard.

But the form of decoration which demands the most taste and care is undoubtedly the adornment of the house, and specially of the dinner-table; a task which not unfrequently falls to the gardener's lot.

I have seen very beautiful table decorations which had involved but little outlay and no great profusion of flowers; while others, on which neither expense nor blossoms had been spared, were either stiff or insignificant.

White *Van Thol Tulips* look exquisite arranged with their own leaves in small silver bowls, or in low vases of white china, especially if the table-centre be of soft silk, white pale green, or salmon pink. Scarlet ones might be placed in rustic baskets on a ground of pale blue or cream colour.

Or again, a rather large vase of Venetian glass in the centre, filled with gold and bronze *Chrysanthemums* loosely arranged, with fronds of some trailing form falling over the table. The other day I saw a table entirely decorated with enormous blooms of that loveliest of Japanese, *Bouquet des Dames*, each flower cut off short and stuck bolt upright, without a vestige of greenery in a specimen glass. One could not help thinking how much better their beauty would have been displayed had they been massed in three handsome vases down the middle of the table, and supplemented by little *Ferns* in dainty china pots.

An ideal table in honour of a bride could be decked with *Colognye* or *Lily of the Valley*. The former should be arranged in shallow glass troughs, and if some leaves and bulbs of the plant can be spared, the flowers will look doubly well, whilst a too flat effect can be avoided by the introduction of some *Liliputian Palms*. Wide bowls filled with *Roman Hyacinths* or *Lily of the Valley*, interspersed with tall slender glasses, each containing a few sprays of the same, look very lovely; and *Crocuses* grown in shallow tins covered with moss, are bright and pleasing, though, as these flowers support the "early closing movement," they are not adapted for use by candlelight. [They will re-open under such circumstances.]

Silver decanter stands, which many people possess but do not use, are treasures in the hands of the skilful decorator, who fills them with *Calanthe* and *Asparagus*, *Ferns*, *Azalea mollis*, and *Adiantum Farleyense*, or coloured leaves and berries according to the season. The larger *Lilies*, as *lancifolium* and *auratum*, are seen at their best in those old-fashioned wine-coolers which repose peacefully in the family plate chest, while a silver cake-basket piled high with *Roses* is a thing to dream of.

Hitherto, I have only spoken of tables decorated in one colour or with one flower, because, where the greenhouses can supply sufficient material, or the owner's purse is elastic, I consider them at once the most effective and the easiest of execution. In blending two or three varieties of flowers, care should be taken that the species are well assorted. For instance, I do not consider that either *Tulips* or *Daffodils* look well with *Orchids*, and should avoid combining scarlet *Poppies* with *Tea Roses*, or Sweet Peas with early *Chrysanthemums*, as, though the colours might be harmonious enough, the general effect would be one of incongruity.

Taste and originality are the main requisites in floral decoration, two qualities in which no one will willingly acknowledge himself deficient! Much however, can be done in this as in everything else by that capacity for taking pains which is sometimes regarded as the principal constituent of genius *A. W., Kendal.*

RICHARDIA REHMANNI (THE PINK-FLOWERED CALLA).

AN additional interest has been given to the genus *Richardia*, commonly known as *Calla*, by the discovery in the neighbourhood of Natal of a species with rose-coloured spathe. It was first introduced into the Cambridge Botanical Gardens under the name of *R. æthiopica rosea*, where Mr. Lynch flowered it in 1888, but there was no trace of rose in the flowers. It was then identified at Kew as *R. Rehmanni*, a species peculiar in having lanceolate and not hastate leaves, the latter being characteristic of all other species of *Richardia*. Recently Messrs. Krelage & Son of Haarlem introduced and flowered it, and Mr. Lynch's experience was repeated at Haarlem, though there a slight indication of rose-colour was perceptible in the spathe. Meanwhile tubers of the plant had been sent home by a Dutch correspondent, who described the flowers as rose-coloured. Finally, tubers of it were sent to Kew by Mr. Medley Wood, Curator of the Durban Botanical Garden, who also said the spathe was rose-coloured, and he has since forwarded to Kew a coloured drawing of the flowers produced by a plant he grew at Durban. Through the kindness of the Director of Kew, this drawing was exhibited before the Floral Committee of the Royal Horticultural Society last Tuesday, and the following communication from Mr. Wood to the Director was read by the chairman:—"I send to-day a coloured drawing of the flowers of the 'Pink Aroid' of which I sent you tubers a short time ago. The drawing was made by my nephew from a cultivated specimen. I have compared it with the original, and find that the colour is in no way exaggerated, but rather the reverse, since three or four days after the drawing was made the spathe became more decidedly suffused with pink. Mr. M. S. Evans has also seen it, and agrees with me that the drawing is true to nature. It is about natural size. The leaf is exactly similar to that of *R. Rehmanni* of which plant it will I think prove to be a variety."

The picture shown represented a flower of about the same size as the dwarf *R. æthiopica compacta*, the spathe being 4 inches long, trumpet-shaped, with a tail-like tip nearly an inch long, the colour being dull rose with a few lines of green outside, whilst inside it was of a darker shade, almost rose-purple. A longitudinal section showed it to be deep crimson at the base of the trumpet, and the slender yellow spadix less than two inches long.

It is therefore quite evident from all this that there is a "rose-coloured *Calla*" in Natal, but it is at the same time remarkable that the plants imported as rose-coloured so far, have shown scarcely any trace of that colour when flowered here. The plants sent to Kew by Mr. Medley Wood are now in vigorous growth, and we shall watch the development of their flowers with interest.

Although this *Richardia* has not the attractions of the useful old *R. æthiopica*, or the new yellow spathed *R. Elliottiana* and *R. Pentlandii*, it is a

plant worth looking after by hybridisers, and it is certain to find many admirers among those who take an interest in the novel and unorthodox among garden plants.

IVIES.

THE varied and extremely beautiful forms of variegated Ivies now obtainable are not sufficiently appreciated, and if the accompanying notes bring them more forward my object will be attained. One of the most valuable traits of the Ivy is its equal freedom of growth whether in sun or shade. It also seems impervious to town fogs and smoke, and will grow well in suburban gardens and beneath trees, where few other subjects are satisfactory. A bare spot may be quickly covered with Ivy, both in its green and variegated forms; while for hiding a rough fence or broken wall, there is nothing to surpass it. This clinging shrub fits in with ruined and dilapidated surroundings far better than any other subject that I am acquainted with. All through the year Ivies have a fresh and bright appearance; as a natural screen to windows in towns I have seen the Ivy used in a most charming manner. If planted against the wall they can be so easily trained along a few stout wire supports, and form a screen of 1 to 2 feet high as may be desired. Lately, I observed a house in the suburbs of a seaside town, the whole front of which was covered with the Irish Ivy (*Hedera Helix canariensis*). As a screen to the lower part of the windows there were plants of *Hedera maderiensis variegata*, a very bright silver variegated form. This had a pretty appearance, and must have been lighter for the room than if the common green had been trained in its place.

Ivies grow in very little soil, and if kept well watered and syringed, are some of the grandest town climbers we possess. There is scarcely any limit to the uses to which they can be put, and I strongly advise the planting of some of the vigorous-growing variegated forms, and of which there is now a large variety. As pot plants, grown over a trellis or globe, they are seldom seen, yet there is no plant more amenable to this style of training, nor more lasting when obtained. The support they would obtain from the small roots which penetrate every interstice they can find when growing against a wall, may be provided for to a great extent by frequent syringing, and this will also keep the foliage bright and clear. An occasional dose of liquid-manure will be found a great help. A. P.

CULTIVATION OF HARD-WOOD PLANTS.

(Continued from p. 685.)

CHORIZEMAS.—There cannot be two opinions as to the showy character of these profuse-flowering semi-succulent greenhouse plants when in their full beauty in April and May. They are almost without an exception indigenous to West and South-west Australia, but are classed in gardens with New Holland plants. The plants are not so generally grown as was the case from thirty to forty years ago, when no collection of note would be without the best varieties; but fashions have changed of late years, and many a good plant now remains neglected. If cultivators only knew, however, of the extreme value of the more vigorous-growing varieties of *Chorizema* as pillar, roof, or wall plants, their culture would, I am quite persuaded, be again taken up. For training up pillars or wire arches in a conservatory, a more suitable plant can hardly be chosen. In this way I have had *C. cordatum splendens* one mass of growth, and flower too, in its season, extending fully 10 feet from the soil. The plant in question was planted out in a border with *Camellias*, and was quite at home there, growing in peat and loam. Through being planted out, it lasted in flower much longer than in pots, and commenced early in the year, continuing in beauty for quite three months. When treated in this way, the growths should only be lightly tied-in, so as to afford them support.

There are many conservatories in which room could, I think, be found for this mode of culture, and a sunny position is better than the reverse. As pot plants, they are seen to much better advantage when of medium or specimen size, although small plants also are very pleasing, by reason of the distinct and bright colours of their Pea-like blossoms. The strongest-growing kinds are managed more readily if trained on wire trellises, and the medium-growing species by means of slight sticks. The growth of healthy plants is very free, which will render necessary some amount of pruning; for most plants grown in pots, this should be done with moderation, otherwise harm will be done. The pruning can be modified considerably by a judicious system of thinning-out of the weakly spray-like or the exhausted shoots immediately the plants go out of flower; and when this is done, not nearly so much of the finer wood will have to be touched with a knife, shortening of the longer shoots and closer pruning of the smaller ones being then the better course. An indiscriminate use of the knife, after the manner of cutting a hedge, should not for a moment be entertained. It is better to let the shoots grow away freely all the summer, leaving the tying into proper form till the late autumn. Any extra strong shoot which looks as if it would rob the weaker ones, should be stopped at the points. When any re-potting is required, it should be done early in the summer, and soon after flowering is past in fact, so as to have as long a season for re-establishment as possible. *Chorizemas* should not be confined to small pots so as to starve the plants, it is better to grow them on into fair-sized specimens, then with proportionate pot-room shifting will be far less needed. Whether potted or not it is better to keep the plants under glass for a time until the young growths are well advanced, than to stand them outside immediately the flowering is over towards the end of May. By the end of June they should be fit to stand outside in a sunny position until the middle of September, if the weather still remains open and fine. From the time of pruning and potting, the syringes should be occasionally used, both to induce young growth and to keep in check red-spider, which besides white-scale, is about the only insect that gives trouble. Remedies have been alluded to in other instances. At no time should a close atmosphere be allowed during growth, and a favourable position in the greenhouse is all that is needed, the object being to secure a hard—not a sappy—growth. The watering needs to be attended to with care, in this respect the treatment is about the same as that of *Ericas* and *Epacris*. The object should be to avoid both extremes in this item of culture, it would not do to let a plant droop often during growth; on the other hand, but a moderate supply is required after housing until the flowering season comes round again. Good, sound, fibrous peat is the staple soil to use, such as one would choose for *Azaleas*, with no fine or pasty matter left upon the under side, as when the sods are cut too thickly. A dash of fibrous yellow loam would be a good addition when the peat is not first-rate. Silver sand should also be freely used. As in other plants of hard-wooded growth, firm potting is most essential. In alluding to the watering, I should have added that no manurial stimulants are ever really needed such as would excite growth too freely when other details are well attended to.

The best varieties are *Chorizema varium*, of which *C. varium Chandleri* may be considered as the finer form for general cultivation; it is one of the best growers of any, the flowers are of a bright orange and scarlet, the racemes in vigorous examples being much branched. *C. Lawrenceanum* is one of the best to grow into a specimen upon a trellis, or for training upon a pillar or near the glass; being about the strongest grower of any, it is not advisable to plant this variety out unless there is plenty of room for its extension—it has rather brighter coloured flowers than the preceding variety, having, like it, the same tendency to produce branched racemes. *C. cordatum splendens* is one of the most profuse in flowering, producing racemes of bloom of great

length when planted out; it is not of so bright a colour as either of the others, but the contrast between the orange and the red is more marked. *C. Henchmanni* is in growth quite distinct, being of a greyish or glaucous shade of green; the entire plant is of less vigour, having more of a shrubby habit; the flowers are scarlet, thus being also distinct in this respect; possibly through the characteristics of this plant, it is more predisposed to mildew than any of the others (sulphur being the remedy). *C. Lowii* is a variety of more recent introduction, but whether it be a new species or not I am unable to say; I am disposed, however, to think it is an improved form of *C. cordatum splendens*; the two colours, orange and scarlet, are both unusually bright—this variety was put into commerce only a few years back by Messrs. H. Low & Co., of Clapton, N.E.; it flowers freely whilst still of small size. *C. ilicifolium* is another quite distinct species, with yellow flowers and a rather vigorous growth.

GOMPHOLOBIUMS.

These are not unlike the *Chorizemas* in flower, but the growth is different, being much more slender, with far less vigour in every way. Compared, too, with the *Chorizemas* as regards culture, they are more difficult to manage. A well-grown plant is now rarely seen. The last specimen I noted was at the Regent's Park more than twenty years back. The *Gompholobiums* are more continuous in flowering, whilst there is never a mass of bloom open at one time. *G. polymorphum* is one of the best, the flowers are scarlet, purple, and yellow; *G. splendens* is a form of the preceding; *G. barbigerrum* is somewhat more bushy than *G. polymorphum*, which is of a scandent growth, its flowers are yellow and larger in size. Paxton gives twenty-one varieties in his *Bot. Dict.*, all of which, with one exception are put down as possessing yellow flowers. These also are "New Holland" plants, but their particular locality is more south and south-east than the *Chorizemas*—both are, however, quite at home in the greenhouse. H.

(To be continued.)

HILLINGTON HALL, NORFOLK.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS pleasant home of the ancient family of the Ffolkes lies about half way between the villages of Flitcham and Hillington, the latter being also a station on the Midland and Great Northern Railways, about seven miles north-east of King's Lynn. Hillington is also on the main road to Walsingham Abbey, a powerful and popular attraction of olden times.

Our space does not allow of our dilating on the antiquarian interest of the place, though the proximity of Hillington to the ancient shrine of Our Lady at Walsingham Abbey, and the prominence of the four ancient crosses outside the lodge gates on the Hillington Road, furnish strong temptation. Few more characteristic links could be found to bind the present to the past than such a rich embellishment of this Gothic lodge, with its two towers with venerable crosses. Sufficient mystery also hangs over their past history to invest them with special interest. The cross with the longest shaft of the four is doubtless the original village or parish cross of Hillington, and is still standing on the spot it has occupied throughout many centuries. The second cross was moved from the point where the Swaffham and Lynn roads join the Fakenham road, about a quarter of a mile from the Hillington lodge-gates; the third probably from St. James's Chapel, which stood in the olden times about a mile west of the Lodge on the Lynn road; the fourth may have been from the market-place of King's Lynn, or some other parish, as all are said to have been collected in the district.

Entering the lodge, we soon reach the Hall, from the front door of which the Flitcham Lodge, with Ivy-clad towers, and of similar character to the other, is distinctly visible.

Hillington Hall, a most imposing and picturesque building of the garden front of which on the south side of the house we give an illustration, was built in 1672 on the site of the Grange, a much older house, by Richard Hovell, whose father purchased the estate in the reign of Queen Elizabeth. The first coat of arms to Martin Ffolkes was granted in the reign of James II. The internal arrangements and furnishing of the Hall are in harmony with its stately and dignified exterior; it also contains many notable portraits. The Technical Education Lectures on Horticulture for the district are, by permission of Sir W. and Lady Ffolkes, given in the Hall by Mr. Bunyard, late of Ashford, and are well supported by all classes and conditions.

Before noting the main features of interest in the pretty gardens at Hillington Hall, a few sentences must be devoted to the general features of the demesne. The Park, though not very extensive, contains some old Oaks of noble dimensions, several of those near the Hall probably more than a thousand years old. There is also a wise and judicious blending of evergreens and deciduous planting in the park, which links the old with the newer elements of the landscape, and gives the whole a pleasing and varied character. The next point is the graceful disposition of the two approaches to the Hall from the two lodges, thus converting the two approaches into a thoroughfare right past the Hall—a matter of great practical moment in places so liberally thrown open to the public as Hillington. Not only the park but the pleasure-grounds are thrown open to visit and to play games in, hot water being provided for visitors throughout the summer months. Such thoughtful liberality, and the close proximity of Hillington to Sandringham, bring hosts of visitors throughout the summer season. There are several artificial lakes here, the largest and most beautiful being on the north side of the Hall. Our illustration shows the boundary walls, with its base, also flanked by a much smaller lake on the garden front of the Hall, with the well-wooded but more modern part of the park beyond. The half-dead deciduous tree to the right of the Hall is an Ivy-clad Oak, which forms a charming contrast with the adjacent glaucous Atlantic Cedar, as well as with the Hall itself. There is another and a smaller common Cedar of Lebanon nearer to the Hall than the glaucous one, which may just be seen in the illustration; and other masses of trees and shrubs, which are needed to tone down the lofty and imposing massiveness of the architecture of the Hall. The boundary and retaining wall bordered by the straight lake is but little raised, and relieved, as shown, by some elegant vases. This walk runs along to the end of the terrace into the wood, and proceeds towards Hillington station, past Nut Island, which until it was linked on to the main land by a bridge, used to preserve the nuts for the squirrels. A main walk almost or wholly parallel with this runs along the front of the mansion through the kitchen gardens; the further end to the right terminating in a mass of shrubs, and the other end in an old orchard containing some very old and fine Apple trees. A statue, a seat, one or more Rose bowers or arches, a summer-house, vase or fountain, would furnish striking termini for this fine walk. Herbaceous and other plants, flowers and bulbs, are planted in masses and groups along the borders of this main walk as it proceeds through the well cultivated and fully-stored kitchen gardens into the old orchard at the far end. The main walk across the kitchen garden from the vineries and other glass-houses to the retaining walls with its base against or in the water, as seen in our illustration, is furnished on either side with a border devoted to choice herbaceous and other flowers, shut off from the vegetables by espalier Apple and other fruit trees. This is mainly furnished throughout the flower season with choice herbaceous white and pink Peas, white and other herbaceous Phloxes, Sweet Peas, Dahlias, Tiger and other Lilies, Gladiolus, Hyacinths, and other bulbs.

Each main division of the lawn or garden front

is furnished with massive beds of Rhododendrons planted in peat. One of these, however, has recently been removed to make way for a large collection of choice new varieties of Iris from Japan, which with other Iris seem to thrive here. A group of scroll beds alike on each half of the lawn, consisting of nine or ten, each designed from the family arms, of crosses, crescents, Fleur de Luce, and other heraldic patterns, all now planted with bulbs, the early Forget-me-not, *Myosotis dissitiflora*, &c., promising a chaste glow of colour in the early springtide. These are furnished with the usual bedding plants throughout the summer and autumn, Pelargoniums, Begonias, Ageratum, variegated Alysiums, Lobelias, &c. Among the former we noted a capital stock of the old sweet-scented Lady Plymouth Pelargonium, now too seldom seen in flower gardens, furnished either on the old-fashioned massing or the newer mixed system.

The old orchard, too, is just where one would expect to find it in a garden of this style and character, the Apples holding their own bravely against the severe encroachments of timber trees. We noted some fine trees of the following among other old favourites, and were pleased to find great abundance of fruit of the highest quality in store from these venerable holders of this orchard against all comers for sixty or more years:—Beauty of Kent, Scarlet Nonpareil, Ribston Pippin, London Pippin, Cockle Pippin, Blenheim Orange, Gravenstein, Leathercoat, King of the Pippins, the Brandy Apple, &c.

The walls were also well furnished with Pears, Plums, &c., and thriving crops of Gooseberries, Currants, Raspberries. Strawberries were everywhere in evidence, Mr. Forder, the gardener at Hillington, speaks well of Noble and Scarlet Queen, while growing largely such established sorts as President and Sir Joseph Paxton.

The Orangery is quite a characteristic and imposing structure on the garden side of the Hall, though it is hardly seen in our illustration. It is probably more than sixty feet long, fifteen wide, and twenty high, and so skilfully linked with, rather than on to, the Hall, as to form a portion of it. It contains four very fine old standard Myrtle trees in tubs, six fine orchard trees, and one Citron, planted out, laden with fruit, and pictures of good health.

A curious tale is tacked on to one of those, and is still duly recorded in the district. Long, long ago, an old lady in the neighbouring parish of Fritcham sowed one or more seeds of an Orange in a pot. When cold set in, she placed it in the brick oven for shelter. Meanwhile, a young pig arrived on the scene, and was also sheltered in the oven. When the old lady opened her oven again, lo and behold, the orange tree had already begun to grow, and its owner hastened to carry it down to the Hall and present it to Sir Martin Ffolkes, the owner at the time. There it has shared in the fortunes and happiness of the Ffolkes' family ever since. What became of the pig we know not.

The roof of the orangery, as well as the back walls, &c., are largely clothed with the chaste Clematis indivisa, Lapagerias, Cobaea scandens, Habrothamnus, Gloire de Dijon and other Tea Roses; Maidenhair and other Ferns, Azalea amena, &c., being placed over the Orange-tree borders; the glasshouses and back-walls of pits and fruit-houses are also partly or wholly devoted to such plants as *Hoya carnosa*, *Heliotrope*, *Camellias*, *Bougainvilleas*, *Stephanotis*, *Eucharis*, *Chrysanthemums*, *Callas*, *Pelargoniums*, *Poinsettias*, *Lilies of the Valley*, *Violets*, *Christmas Roses*, &c. Two plants deserve special commendation and notice over a roof of a cool stove fully furnished with two fine plants of the *Stephanotis floribunda*. One of these, the well-known free-blooming Elvaston variety; the other, a seedling brought by Lady Ffolkes from abroad, that had not bloomed for several years. A few years ago Mr. Forder planted it out in the same house as the other, and now the shy seedling seems as free-flowering as the prolific, the flowers being rather the larger of the two. The *Bougainvillea* is grown on the back of a cool plant-stove or Melon-house. Throughout the summer months the back lights are slipped down, and the growth, a yard or two long, is made in the open air,

giving the curious blossoms a richness and a glow of colour that can only be reached under such full exposure to light and air. As winter approaches, the stray shoots are cut off, and the lights run up over the *Bougainvillea* for the winter.

The vineries and Peach-houses are old-fashioned, but yield good crops, and every inch, on rafter and wall, is filled with Grapes, Peaches, Nectarines, Figs, Tea Roses, and other plants or flowers. Two of the vineries are chiefly devoted to Hamburgs, and one, more recently planted, to Muscats, Alicantes, Gros Colmar, Foster's Seedling. The Grapes were all cut and bottled, and promised to yield a plentiful supply well into the New Year. The Vines were also in promising condition.

Returning to the station, through the well-timbered, thickly-phased plantation that leads past Nut Island, we observed some of the finest boles of Scotch Fir ever seen on the top of a bank, with a canal on one side and a ditch on the other. On one of these there was a fasciated branch almost as large and round as an ordinary haycock, in which a colony of wild ducks were said to have been hatched last summer, though it was 8 or more feet above the water-line. But the Midland train was due, and this, and the fact that the Fritcham Lake was crowded with seagulls when we left Hillington, warned us to catch it for Lynn or London. F.

CUCUMBER CULTURE.

I BELIEVE it is the experience of all Cucumber growers who cultivate extensively for market, that after the erection of a new glasshouse, they can safely reckon in the first year upon a good and productive crop; the second year, a moderate crop only will be obtained; the third year, a crop scarcely worth the saving will be the result; and after this, no further crop of Cucumbers can be grown in the building.

To those who have to depend largely for their livelihood upon the produce of their glasshouses, this failure of Cucumbers is naturally a serious difficulty.

The above fact having been brought under my notice, I, with the co-operation of two growers of Cucumbers on a large scale, tried during the past season a series of experiments, and the results obtained appeared to show that it is not lack of plant-food in the soil, either mineral or nitrogenous constituents, that causes the failure; neither is it disease-germs deposited in the material of the building, because in one case the house was thoroughly disinfected and lime-washed, and with no apparent result.

Will those growers who have had any experience upon the subject of Cucumber failure, kindly state through the pages of this Journal their opinions upon the cause of failure of the crop? and having by these means possibly discovered the cause of failure we may have a better chance of finding a remedy for it, which I doubt not would be a boon to many horticulturists. J. J. Willis, Harpenden.

RHODODENDRON CATAWBIENSE AT HOME.

EARLY in July of the current year I had an opportunity of seeing *Rhododendron catawbiense* in its native habitat, and, moreover, in the very locality where, nearly a century ago, it was discovered by Fraser, and whence it was introduced by him to European gardens. The accompanying illustration, prepared from a photograph taken by Mr. Elmer H. Edson, represents a *Rhododendron* "park" near the summit of Roan Mountain, in Eastern Tennessee and Western North Carolina. The hotel at the top of Roan Mountain—6342 feet above sea-level—is said to be the highest human habitation in the United States east of the Rocky Mountains. Professor Mitchell, who lost his life on the mountain which bears his name, wrote in the *American Journal of Science and Art* in 1839:—"With the exception of a body of granitic rocks looking like the ruins of an old castle, near its south-western extremity, the top of the Roan may be described as a vast meadow (about

9 miles in length) with some interruptions . . . without a tree to obstruct the prospect; where a person may gallop his horse for a mile or two, with Carolina at his feet on one side, and Tennessee at the other, and a green ocean of mountains raised into tremendous billows immediately beneath him." My route had taken me from Washington to Johnson City, a small town in Tennessee, upwards of 450 miles from the Capitol. From Johnson City a narrow-gauge railway runs through the Doe River Cañon—one of the most picturesque railway rides in the United States—to Roan Mountain Station,

On rocky, open bluffs, *Ceanothus americanus* was very conspicuous, also *Kalmia latifolia*, *Hydrangea arborescens*, and a host of shrubs, &c., cultivated in British gardens. *Magnolia Fraseri*, *M. acuminata*, *Æculus flava*, the Tulip-tree, &c., were duly noted and admired, as the train passed along; but a mere list of the beautiful and interesting species observed would occupy too much space for these columns. In this Alleghany region now stands the largest body of hard-wood timber in the temperate zone. A good idea of the physical conditions, &c., can be formed by reading the following extract from Dr. Asa Gray's

condition, and composed of a greater variety of genera and species than in any other temperate region, excepting Japan.

And in their shade are the greatest variety and abundance of shrubs, and a good share of the most peculiar herbaceous genera. This is the special home of our *Rhododendrons*, *Azaleas*, and *Kalmias*—at least, here they flourish in greater number and in most luxuriant growth. *Rhododendron maximum*, which is found in a scattered way, even as far north as the vicinity of Montreal, and *Kalmia latifolia* (both called *Lanrels*), even become forest trees



FIG. 118.—RHODODENDRON CATAWBIENSE AT HOME.

whence a mountain-road about 12 miles long leads to Cloudlands, the hotel at the top of Roan Mountain. On the steep rocky slopes of the Doe River, *Rhododendron maximum* was in flower at the time of my visit, and constituted in some spots the bulk of the vegetation. According to Professor C. S. Sargent in his magnificent work, *The Sylva of North America*, this species occurs up to an elevation of 3000 feet above the sea-level, and attains its greatest size on the lower slopes of the high mountains of Tennessee and the Carolinas, and where it forms thickets hundreds of acres in extent, impassable to man, and the secure retreat of the bear, the fox, and the wild cat.

address to the British Association at Montreal in August, 1884:—"But at this season a more enjoyable excursion may be made to the southern portion of the Alleghany or Appalachian mountains, which separate the waters of the Atlantic side from those of the Mississippi. . . . In Pennsylvania, where they consist of parallel ridges, without peaks or crests, and are of no great height, they are less interesting botanically than in Virginia. But it is in North Carolina and the adjacent borders of Tennessee that they rise to their highest altitude, and take on more picturesque forms. On their sides the Atlantic forest, especially its deciduous-leaved portion, is still to be seen to great advantage, nearly in pristine

in some places. More commonly they are shrubs, forming dense thickets on steep mountain sides, through which the traveller can make his way only by following old bear paths, or by keeping strictly on the dividing crests of the leading ridges.

Only on the summits do we find *Rhododendron catawbiense*, parent to so many handsome forms in English grounds, and on the higher wooded slopes the yellow and the flame-coloured *Azalea calendulacea*; on the lower, the pink *A. nudiflora* and the more showy *A. arborescens*, along with the common and wide-spread *A. viscosa*."

Among the *Rhododendrons*—as shown in the illustration—*Lilium Grayi* occurs here and there,

and I had the good fortune to be shown the plant in flower by the Rev. Dr. Edson; it is now, however, far from common, having been ruthlessly dug up (almost exterminated, in fact) by collectors. In cultivation at Kew this species attains far greater proportions than in its native habitats. In open spots *Leiophyllum buxifolium* forms dense masses from 6 inches to 1 foot in height, and the Bluets (*Houstonia serpyllifolia*) grows amongst the grass, and makes, in some spots, a beautiful carpet of blue. On rocks and in stony spots, *Houstonia purpurea* occurs in solitary tufts, as do also *Saxifraga leucanthemifolia* and *Potentilla tridentata*. Amongst the shrubs on the top of Roan Mountain—in addition to those already named—are *Vaccinium erythocarpum*, a species with red Oxyccoccus-like flowers, *V. Constablei*, *Menziesia ferruginea* var. *globularis*, *Diervilla trifida*, &c. *Abies Fraseri*—shown in illustration—and *Picea nigra* are the only two Conifers. *Osmunda Claytoniana* is very common.

As I am afraid that I have already taken up too much space I must conclude, although the number of interesting plants noticed was great—only a small selection of them being mentioned in these notes. *Geo. Nicholson*. [Our readers would like to see more space filled by Mr. Nicholson. Ed.]

NOTICES OF BOOKS.

ROMANCE OF LOW LIFE AMONGST PLANTS: FACTS AND PHENOMENA OF CRYPTO GAMIC VEGETATION. By M. C. Cooke, M.A., LL.D., &c. (Society for Promoting Christian Knowledge.)

THE title of this book is its most objectionable feature. It is sensational—it is untrue. The romance has been framed by the credulity or the imagination of mankind; while as to "low life" among plants, it does not exist. It is amongst human animals that we look for that unlovely manifestation of energy, and plants are entirely exempt from it. What Dr. Cooke has done in the present volume is to present in popular language an account of some of the more salient and remarkable manners and customs of cryptogamic vegetation. With the statement of sober fact Dr. Cooke has incorporated the fables and fancies of bygone ages interesting enough to the student of folk-lore and mythology, but which it were well to omit from text-books, except, indeed, in the rare cases where it is possible to give a rational explanation of them. The "symbiosis," or,

Dr. Cooke has it, "dualism" of Lichens is treated by him as it were really romance. Schwendener's "hallucination" has, we are told, "almost subsided into oblivion." "The hypothesis" [we had supposed it a proven fact], "has so few adherents, and those few of such little eminence or authority, that it would be quite unnecessary and impolitic to reopen the discussion, or repeat the arguments against it which have never been successfully controverted." An examination of modern text-books would, we think, prove that no other account of the nature of Lichens than that so unceremoniously dismissed, is now taught in our colleges. Very possibly in the future the facts will be found susceptible of a different interpretation, and the adoption of another terminology will serve to reconcile those who have and those who have no hallucinations. Meanwhile, there are the facts. A similar scepticism is manifested in the case of "heterocœism," or the existence of the same parasitic plant on different host plants, but in very different aspects. This too we had fancied has been made the subject of repeated demonstration, but there are still some sceptics left, says Dr. Cooke, and we are bound to listen to them with all consideration. It is, we think, rather unfortunate that controversial topics should be introduced into a work of this character—one intended not for professional readers but for the laity.

The record of differences amongst the doctors only serves to confuse the student, and to give those hostile to science an opportunity of sneering, an excuse for aiding and abetting quackery of all

kinds, and of opposing methods of research, which do not commend themselves to their uninformed judgment.

Dr. Cooke estimates roughly the number of recognised species of Cryptogams at about 80,000, and he has certainly succeeded in showing "that amongst the humblest organisms in creation there are marvels and mysteries, lessons and suggestions, facts and phenomena, which are worthy the attention of young and old, and sometimes almost as fascinating as a fairy tale,"—with the additional interest we should add, of being themselves true, or as furnishing the clue to the discovery of the truth.

RECENT BOOKS ON FUNGI.

First in order of publication is the first volume of Professor Oudemans' *Revision des Champignons dans les Pays-Bas*,* which is really a collection and revision of the numerous contributions to the mycology of the Netherlands, which Professor Oudemans has published at intervals throughout a long series of years. It is an imposing volume, excellent in typography, and, we doubt not, equally excellent in its contents. The arrangement adopted is precisely that of Saccardo's *Sylloge*, and consequently all of Fries's sub-genera of *Agaricus* are elevated to the rank of genera. The novelty, introduced for the first time, is that all the species in each genus of the Hymenomycetes are arranged at the commencement of the genus in the form of a "key," with the descriptions in full, so that they are not repeated under the several species afterwards, that portion being reserved for the synonymy, habitats, and localities. It is also noteworthy that no measurements of spores are given in the Hymenomycetes. All the text is in French, which is certainly preferable to Dutch for the purpose.

The chief interest which this volume will possess with most of our readers will be in its affording a ready comparison of the fungus flora of a neighbouring continental country with our own, and in this direction a few notes may be made. If we take the entire list of Agaricini, or gill-bearing fungi, we shall find that the Netherlands possess a total of 585 species, against our own 1400 species. The residue of the Hymenomycetes number 274 species, against our own 548 species, or about one half. In the Gastromycetes, or Puffball and Stinkhorn families, there are thirty-nine species, as against our seventy-eight. And in the Uredineæ and Ustilagineæ, the Netherlands possess 190 species to compare with the 257 British species, a nearer approximation than in any of the other of the above groups. The explanation of these great differences must be sought in the different characteristics of the two countries.

The second work to which we call attention is the second and third volumes of Masees's *British Fungus Flora*,† the first volume of which we noticed in 1892. It was at first proposed to complete this work in three volumes, but this, as we pointed out, was impracticable, and now a fourth, or supplementary volume is proposed, in order to include all the Ascomycetes, which cannot amount to a smaller number than the Agaricini, or gill-bearing fungi. Be that as it may, we have in the volumes before us the completion of the Hymenomycetes, in the first half of volume iii., and the Moulds, or Hyphomycetes, fill the residue of that volume; so that the Gastromycetes, the Hymenomycetes, and the Hyphomycetes are done, the Ascomycetes have to be done, and the residue will have to await the "idea of March." Fortunately, the groups which will be relegated to an outside place are those which have, somewhat recently, been brought up to date, with the exception of the Sphærospideæ and Melanconiaceæ, which latter are somewhat of minor importance.

It is important to bear in mind whenever any attempt is made to institute comparisons of bulk with the *Handbook of British Fungi*, published in

1871, that the number of British species has just doubled in the intervening twenty-two years, and that the total of 2810 is augmented to no fewer than 5600. In addition to this, amplification of description was absolutely essential in a great number of species, so that the work should be abreast of the time, and of the greatest possible service to the student.

Little need be said in commendation of these two volumes which has not been said of the first, save the assurance that the performance is fully equal to the original promise. The Hyphomycetes, or moulds, which occupy half a volume, are most interesting objects to the microscopist, and the epiphytal species are of importance to the horticulturist. The outline figures, illustrating all the genera, are even more satisfactory than those of the other volumes, so that one cannot help regretting that such simple figures are not available for every species instead of only for a selection. The classification adopted is that of the most recent systematic work, by Professor Saccardo, without any of the topsy-turvyism which was the chief drawback in the Hymenomycetes.

After all that can be said about extension of size, these four volumes will scarcely cost more than the publishing price of the two volumes of Cooke's *Handbook*, and considerably less than the market-value of the latter book at the present time. *M. C. C.*

THE COTTAGER'S MANUAL OF POULTRY KEEPING. (Published by Horace Cox, Bream's Buildings, E.C.)

THE name of Mr. W. B. Tegetmeier on the cover of this pamphlet is sufficient indication of the excellent and practical nature of the information contained in it. The price (sixpence) brings it within the reach of those for whose benefit it is primarily intended, and it should, therefore do much good work in improving the conditions under which many poultry are now kept, and in suggesting which breeds are the best for small establishments. Speaking of the extra trouble required for the proper management of fowls, the author wisely says that the improvement in the birds will amply repay the care bestowed upon them.

FORESTRY.

THINNING THE TREES.

AS "S." says, p. 743, those that sell their timber year after year quickly get to know whether thinning or leaving the trees alone for a number of years pays the best. Especially is it the case with Beech trees, where they have been properly thinned, as some would say, that is, when they have been allowed to grow into shapely trees—with wide-spreading branches and round head; such trees are next to useless for sale as timber trees. Clean-grown Beech will fetch a very good price at the present time, if free from knots. This wood is largely employed by pianoforte-makers; and so it is by brush-makers, even the short, small pieces come in for that purpose.

An important question should be first asked and answered regarding any plantation. What is the primary object in cultivating the timber? Is it intended to bring in the best return irrespective of its appearance when growing, or is the plantation to be managed purely for its appearance? This is the whole sum and substance of the matter. If profit pure and simple is the point of primary importance, then thick planting, and after-growth, too, in the same way must be adopted. Beech trees managed on these lines are here worth 1s. 6d. per foot, when the stems are devoid of branches for at least 30 feet high. Where the branches of the trees sweep the ground, the result of hard thinning to get shapely trees, it is a difficult matter to realise 9d. per foot for the timber. Note the difference, too, between the amount of timber contained in a tree, say seventy years old, as compared with one the same age that has been managed on the ornamental aspect of the question. The latter will supply more bush or faggot-wood, but what of that,

* *Hymenomycetes, Gastromycetes, and Hysterogasteres*. Imp. Soc. (Amsterdam Muller, 1892)

† *British Fungus Flora*, by George Masees, vols. ii. and iii. Soc. (London, 1893. Geo. Bell & Sons)

as compared with the value of the opposite-grown tree for timber? It is the same with Fir of sorts, planted thickly together—say, 4 feet by 3 feet apart—and thinned judiciously (not too much), so that the lower branches commence to die when the trees are twelve years old. When plantations of Larch, for instance, are managed on these lines, they much more quickly turn into money than where the side branches are allowed to develop to a great length. Half-a-dozen years since the first cutting of Larch came in for Hop-poles; but now the price of these has fallen, and it is hardly worth the labour to cut for sale for this purpose.

In these parts, where a quantity of Hops are grown too, it is difficult to obtain more than 9s. per hundred. With the cutting, trimming, and cartage, there is not much left for the owner. From 10 feet

purpose of their producing timber of the best quality. See the enormous difference, too, in the number of trees that can be grown on a similar piece of ground as compared with those required for ornament only.

Austrian Pine and Scotch Fir are of little use as timber-producers if too much space is allowed them for the spread of the lower branches. The main stems quickly get "dumpy" in the former variety, and of course the value as a timber tree is *nil*. To make either of these Firs pay their way, they must be so managed that one will "draw the other up," owing to a restricted space only being allowed them. In consequence of a want of light, the lower branches quickly begin to die. The main stems are not only cleaner, but not nearly so crooked, as when more space is granted them.

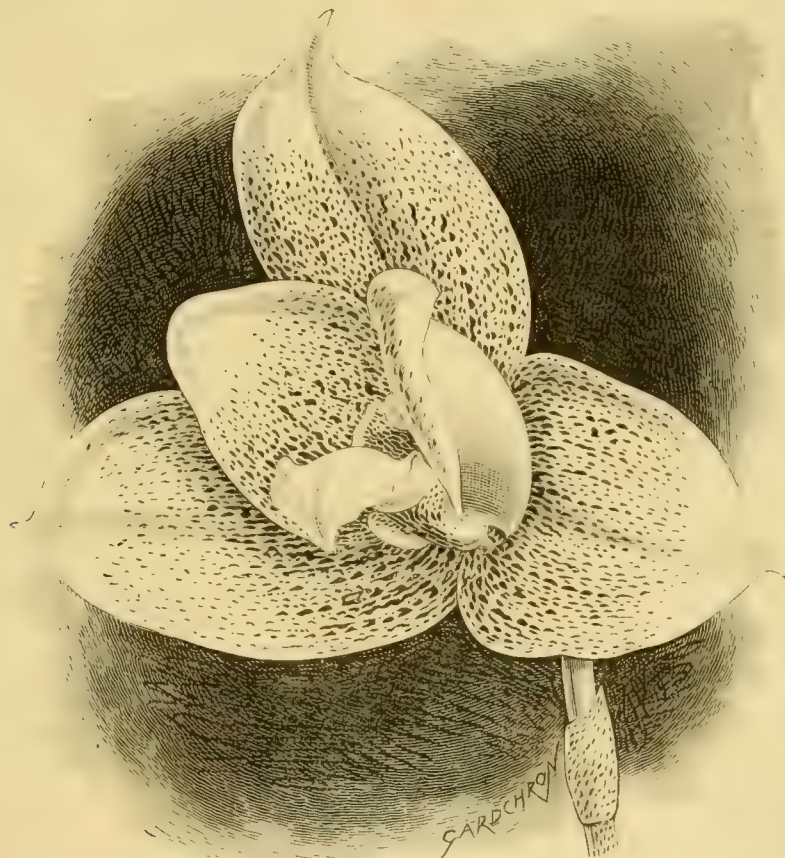


FIG 119.—LYCASTE IMSCHOOTIANA.

to 14 feet are the sizes mostly in request for Hop-poles. By allowing the trees to stand a few years longer there is less difficulty in finding a market for the trees at £2 per hundred, to be used as rails for fencing purposes. Much damage does happen at times to plantations, of Larch for instance, that are injudiciously thinned after arriving at, say, twenty-five years old.

Within a mile of where I write a good number of Larch have suffered from the recent gale, owing to their being wrongly thinned during the last winter. It is a mistake to make them too thin on the south-western side, as was done in this very instance. Four miles from here is growing some of the finest timber in one wood that I have ever seen. Larch, Scotch Spruce, and Silver Firs have run up nearly 100 feet high; 60 feet of this length is devoid of branches, the stems as clean and as straight as possible. Ash, Beech, and Poplar are almost as high. In many instances there is but a few feet separating the stem of one tree from its neighbour. This is an example of managing trees for the express

There is no reason why Fir plantations should not be managed so as to give double results, viz., appearance and profit also. For instance, more space can be allowed for the outside rows of trees; those inside can be retained thicker. *E. M., South Hants.*

LYCASTE IMSCHOOTIANA.

This plant, of which a figure is given above is one of two new *L. castes* shown by Messrs. Linden, l'Horticulture Internationale, Brussels, at the meeting of the Royal Horticultural Society on Tuesday, the 12th inst. The plant has the habit of *L. Skinneri*, and the flowers equal in size those of that species.

For a description of the flower, we refer our readers to p. 756 of our issue for December 16. It was raised by Mr. Alf. van Imshoort, of Ghent, who gives the parentage as *Lycaste Skinneri* × *Maxillaria nigrescens*, but the appearance of the flowers is suggestive of *L. Skinneri* × *L. cruenta*.

WEST INDIES.

ROSES IN THE TROPICS.

NOTICING in your issue of October 1, a letter from Mr. Edward F. im Thurn, saying that he had never found any red Roses do well in British Guiana, I beg to forward the following notes of the Roses under my charge here at the Hope Botanic Gardens, Kingston, Jamaica. I have been in charge of these gardens only a little over a year, although I have been in the department of Public Gardens and Plantations, Jamaica, over four years, having previously served four years at Kew. The following notes are entirely the result of my own observations, assisted by my foreman, a most intelligent and observant man, who has been here upwards of six years.

Hope Gardens are situated 6 miles from the sea (Kingston), at the foot of the Port Royal Mountains, are 650 feet above the sea, have an average temperature of 77° F., and an average rainfall of 50 inches, fairly sheltered from winds.

The following is a list of our best red Roses, or rather a list of the red Roses which thrive the best with us:—

1. *Maréchal Soult*, H.P.—Always in flower, a good strong grower, stands drought well, produces good shaped flowers, not so large as the next two on this list, but of good form and substance, retaining its full perfume; is easily propagated, and stands cutting well.
2. *Madame Charles Wood*.—A better exhibition Rose than the former, larger, of good form, not quite so dark in colour, has good perfume, and produces only about one flower where *Maréchal Soult* produces a dozen. It is not quite so vigorous in growth, nor so easily propagated, and must be very carefully pruned.
3. *King of Spain*.—A grand Rose, the largest and best red Rose I have seen; very full of petals, with a delicious perfume, a very vigorous grower—not easily propagated, however, and flowers at about the same rate as *Madame Charles Wood*.
4. *The Meteor*.—A gem of a Rose, sweet, and of a very beautiful carmine-rose colour, but not a strong grower, nor is it easily propagated, and is rather liable to be injured by drought; it is, however, very free flowering, and the blooms are very nice for button-holes, &c.
5. *Prince Camille de Rohan*.—No praise is needed for this old favourite. The only drawback is, that it does not like being cut, nor does it strike easily; it does not start to flower until the plants are about eighteen months old, after which, however, it flowers freely.
6. A Rose called *Laby-doyen* [*? Labedoyère* H.P.] is one eminently suited to the tropics, as it is found here, being a vigorous grower, yet not making very long growths, the average length of growths being about 5 feet, with nice dark green leaves, producing its flowers in large clusters, often having three to five expanded blooms on a bunch at one time. It has a good perfume, is very easily cultivated in pots, or grown in the open ground, and is a constant flowerer from beginning to end of the year.
7. *Secrétaire Nicolas*.—A good Rose, fairly free-flowering; fairly good grower, not easy to propagate, and does not like being cut, but is, nevertheless, a good dark-coloured Rose.

Rose-coloured Roses:—

1. *Mlle. Thé de Lovet*.—Rosy-pink, large and full of fine form, very vigorous, and is best treated as a climber, when it will produce its lovely flowers in abundance. It is one of our very best Roses for producing cut-blossoms, is very easily propagated, and may be cut in the most barbarous manner with-

out any apparent evil results; plants grown from cuttings put in last February, have made growths 15 feet long.

2. Madame Moreau is a good grower, easily propagated, produces plenty of flowers, but does not like drought.

3. Madame Isaac Pereire, about the same as 2, but stands drought better.

4. Madame Alice Dureau produces nice buds of a pretty rose colour; it is not good for exhibition purposes, but very nice when half expanded, has a nice perfume, is a fairly good grower, and is easily propagated.

Reine du Midi and Paul Neyron are rose-coloured Roses, with good constitution, and well worth growing.

Group No. 3.—All the Roses in this group are free-flowering, of Al quality, and should be grown by every lover of good Roses, and must be grown by every exhibitor.

1. Victor Verdier.—This Rose here with me is second to none, as it is a good vigorous grower, does not care a fig for drought, not dry winds, nor anything else, in fact, except hard pruning. A plant, or rather several plants, struck in February, have now several of their lovely rosy-carmine flowers on each, every flower being large and perfect in form, and what is to me, at any rate, their peculiar charm, the rich dark green foliage is well up around every flower, so that every flower is a perfect bouquet in itself, and it always retains its exquisite scent.

2. Next comes Captain Christy, a Rose particularly happy in the tropics, if only the knife is kept away from it.

3. Middle, Marguerite D'Ombraïn, a Rose which, despite being saddled with such a long name, thrives exceedingly well, producing several medium blooms, and occasionally one as large as a Paul Neyron, perfect in shape, and with a most delicious perfume, producing a few of the grandest Roses of the very first quality, to a quantity of medium-sized ones, not up to exhibition standard.

4. Baroness Rothschild.

5. Mabel Morrison.

6. La France.

7. Miss May Paul.

Of the four latter no special mention need be made. They are all lovely. Miss May Paul is best treated as a climber. *Wm. Cradwick, Superintendent, Hope Botanic Gardens, Kingston, Jamaica.*

(To be continued.)

FLORISTS' FLOWERS.

SELECT DECORATIVE CHRYSANTHEMUMS (JAPANESE).

I CONSIDER that for general utility and excellence the following cannot, on the whole, be surpassed. The list includes thirty varieties for large flowers and decorative uses as well, without direct reference to exhibition blooms. Avalanche, as a dwarf grower, with pure white flowers; Elaine, as a white for cutting purposes; Florence Davis, a beautiful white, quite distinct, the pale green centre adding to its attractiveness; Madame Thérèse Rey, which may be well described as a white Val d'Andorre, with a pale lemon-coloured centre (this is the finest new white of the season); Colonel W. B. Smith, a light terra-cotta colour of large size, the flowers lasting well, quite distinct from any other variety; Mrs. Falconer Jameson, bronzy-orange, pale yellow reverse, very effective, and a favourite colour; G. C. Schwabe, rosy-carmine, with long recurved florets; Excelsior, cerise-rose, silvery reverse, a grand variety; Sunflower, still unsurpassed for its beauty and general attractiveness: the long drooping petals enhance its value; W. H. Lincoln, a large incurved yellow, somewhat early, but the flowers last well; Lord

Brooke, very distinct, large, bold flowers, decidedly incurved, bronzy-yellow in gradations of shades; Middle, Marie Hoste, with a slight tinge of pink in its otherwise white flowers, a fitting companion to Madame Thérèse Rey; Vivian Morel, pale mauve, with a silky shading, one of the best, and so distinct in its character; Thunberg, or Mr. H. Cannell, the former being the taller, with the richest colour, but the latter having the finer flowers and better habit, the rich yellow shade, and the long incurved florets, make either kind desirable; Edwin Molyneux, decidedly valuable, and quite distinct, its colour being so well-known (when not severely disbudded the flowers are, I think, even prettier than when of large size); Etoile de Lyon which has, I think, improved in quality this season, it has certainly not been so coarse, the deeper colour or purplish-rose is, I think, its best shade; Val d'Andorre, it will take a long time to surpass this variety for general utility, the deep orange-red shade makes it quite distinct also, whilst, as a specimen, it is one of the best; Mrs. E. W. Clarke, extra large, deep shade of amaranth, lighter reverse, a distinct colour; Sarah Owen, golden bronze, shaded with rose; Stanstead White should be included for its large, pure white flowers, which stand well; Wm. Seward is one of the richest of all the deep-crimson colours, it was better earlier this season than later on; Mr. Wm. Holmes, a valuable variety for cutting, chestnut-red, tipped gold; Source d'Or, orange and gold, unsurpassed for cutting; Lady Selborne has this same essential value, being early also and very free; Middle, Lacroix also makes a useful variety for a large supply of cut bloom, and is one that may be worked in for December uses; Margot, a pale rosy-salmon, is also very free and rather early; Roseum Superbum, a lovely shade of colour, deep Rose, tinted with lilac, one that lasts well; Madame Bertier Rendatler, reddish-orange, shaded with yellow, distinct and free, makes a good specimen; Mr. Garner, yellow, tinted bronze, free; and Golden Gem, bronzy-crimson, fading to pale yellow, valuable as a late variety. Dwarf growth has been borne in mind as far as possible, only a few exceptions thereto having been made. Other growers may discard a few of this list, but I fancy on the whole, there is not much fault to be found with it. *H.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

TOP DRESSING FRUIT-TREE BORDERS.—As soon as the various operations of pruning, nailing, and the necessary dressing of fruit trees on walls are finished, the top-dressing of the borders should be proceeded with, if the weather is then suitable for this kind of work. There can be no rule for this matter, as it will depend on the purposes to which the borders are put, whether reserved for the roots of the trees, or, as is more usual, cropped with vegetables, Strawberries, &c. Taking the Pear border—it would be loss of good compost to put it on the surface with the idea of benefiting the trees, as if successful in attracting the roots to the surface, these would be cut off when digging for some crop that is taken from the border. I have explained in former Calendars how the roots in such borders are assisted with new soil in these gardens, viz., by placing it at such a depth that it will not be disturbed when the border is merely dug one spit deep. After cleaning off weeds, &c., prick up the surface of an uncropped border with a digging-fork for a width of 4 feet from the wall, and then afford a nice dressing of charred garden refuse and old mortar, which will keep the soil open for the reception of water in the summer.

WALNUTS.—If the trees are standing near to quarters of vegetables, the roots may need to be somewhat severely pruned every two or three years, the operation being carried out by opening a trench all round the tree at a point about equal to the stretch of the branches, going down as far as roots are found. This work should no longer be deferred, providing the weather keeps open, as if deferred far into the new year, any large roots which it may be necessary to cut, not having time to callus over before the sap

is excited by any temporary increase in the temperature, bleeding will be sure to take place, with a result that the tree will be weakened. As a matter of convenience, the Walnut-trees should be planted in the park or paddock, and not in the kitchen-garden. The Précoce Walnut, an early-bearing variety, should always be planted, as well as the best of the commoner kinds. If Walnuts are planted with the idea of utilising the wood, plant those with small thick-shelled nuts—never the finer nuts. Be sure that whatever is planted it is of the best. The very large fruiting sort, known in the South as the French variety, is excellent in good seasons, and it ripened perfectly the past season. But I cannot recommend it for planting in the North. Trees will grow well if stations are prepared for them, not less than 8 feet in diameter and deeply trenched, adding rotted dung if the land is poor, or exchanging part of the natural soil for some turfy loam. The trees, however, would grow much better if the place selected is in a corner of a paddock or park, and kept cultivated for two or three years. The trees in this case would be planted somewhat close together, 24 feet being a suitable distance, with the idea of grubbing the variety Précoce so soon as the larger trees come into bearing and wanted the space. Good Walnuts are such a valuable addition to the dessert in the autumn, that where trees do not already exist steps should be taken to grow them.

THE KITCHEN GARDEN.

By H. C. PRINSEP, Gardener, Buxted Park, Uckfield.

EARLY PEAS.—Those sown in the open during November will have appeared above ground, and may need protection of some kind in severe weather. It is seldom that the weather is so mild at such a late date in the year, but a sudden change may take place, and the young Pea plants suffer severely. Peas in warm frames and pits should have all possible light and air admitted when the weather is mild, and keeping the glass clean is therefore very necessary. They do not thrive in a close warmth, but all the same, cold draughts should be avoided, as mildew is often induced thereby. If the Peas are growing in hot-water-pits, the pipes should never be more than lukewarm, or the atmosphere will become too dry for the plants. Another sowing may be made when the former one is somewhat advanced, a constant supply being what is looked for when Peas have once been sent in to the kitchen.

ASPARAGUS.—Roots lifted from this date onwards will start into growth readily in heat, and this fact demands notice, or the quantity of roots may be unduly lessened in number without much corresponding gain in supply. Asparagus forcing at very early dates leads to the destruction of a great many plants, and to keep up the supply of plants, new plantations must be made every spring. For this purpose I have found it a good plan to sow seed on a slight hot bed early in January, so that young plants will be ready for transplanting in April; and plants raised in this way start very readily in growth when set out if carefully hardened off before planting, and make much stronger roots than those raised from seed sown in the open ground in April, as they have two months longer time in which to grow.

RADISHES.—These plants need very little forcing, so that if a slight hotbed can be provided, succulent roots will soon form. The seed should be sown thinly, that is, at 1 inch apart, and when the plants appear, all the light and air possible should be admitted to them. There are now so many early varieties, that it is almost unnecessary to name any, but the olive-shaped Radish usually turns in the quickest. On light dry soils in sheltered positions, and where protection can be afforded, a sowing may be made in the open. To protect the seed till it germinates, cover it with straw-mats, straw, or other similar material that can be easily removed. It is useless to sow so early as this on cold wet soils, the seed usually perishing before germination can take place.

MUSHROOM-HOUSE.—Continue to prepare material for new beds, and when it is necessary to clear out old ones, or get in manure for making fresh, do so if possible on warm days, so that there may be no material lowering of the warmth of the house. The soil needed for covering the beds should be made warm and drier before being placed on the manure.

FRENCH BEANS.—Where these are grown in pots and it is desirable to retard them, they may be re-

moved to a cool, dry house; but the pods should not come into contact with damp, or rotting will begin. The plants must not be crowded together, as nothing can be gained by it, which in most gardens will not be necessary with forcing-houses at work.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

VINES—The changeable weather and temperature have rendered the keeping of Grapes more difficult. Fire-heat, though always to be avoided as much as possible, is requisite in damp weather, to expel excess of moisture; with a little air on at the top of the house, and the pipes made just warm, this is easily effected, and without harm. The temperature should not fall below 45°, unless the weather is severe; and until the leaves have all fallen, daily attention must not be withheld. The season is now at hand when those that are still hanging should be put into bottles of water. If a good quantity of Lady Downes' Seedling is grown, the supply will be prolonged, as that fine Grape, when well and properly ripened by the end of September, seldom loses berries by decay or shrivelling, and if light is excluded, bloom and colour remain to the last. These Grapes can be kept till May, and this renders early forcing of less consequence. We use Gros Colmar from December to late in February; Alicante next, and then Lady Downes, the temperature of the room where they hang averaging 45° to 50° during the winter months. No current of air should pass over the Grapes, but there must be ample provision to allow the escape of moisture; fire-heat should only be used when absolutely necessary. Use clean bottles, clean water, and a little charcoal to keep the water sweet. I cut the wood with bunch attached about 9 inches long, and shorten beyond the bunch to half an inch. When the bunches are in position, they hang clear of the bottles, and a piece of wadding is fastened in with the wood, to keep it in place, and to prevent the escape of moisture.

PEACHES AND NECTARINES.—In the early house now started allow no fluctuation of temperature except by sunheat, when 10° rise may always be allowed with air on, but 45° to 50° at night need not be exceeded till the buds are opening, at which time we find a temperature of 55° during the day, with 50° at night (and lower when weather is severe), quite sufficient until the flowers are set; and we never have suffered from bud-dropping. Syringe at least twice daily till the flowers open, except when the weather is damp. If the roots are outside, and in much colder ground than other roots under glass, it is very conducive to bud-dropping. Protection with litter or bracken should be given. Drenchings of cold water at the roots are as likely to cause bud-dropping, as is excessive dryness. Fumigate the houses at least twice before the buds open.

STRAWBERRIES—Strawberries do well with the treatment which Peaches require as to temperature, and on the shelves the first batch will soon be showing signs of moving. They also require fumigations to prevent green-fly from becoming established. The roots must not be allowed to suffer from want of water, and they may be syringed lightly once a day. Let the temperature of the water used for any purpose be rather in excess of that of the structure when used. Plants placed in pits or frames on leaves require little moisture till growth is active. The temperature need not exceed 55° during the day, and 50° at night. A little air put on when weather permits is always advantageous. Prepare a succession of plants, by making the drainage perfect, taking out worms and re-surfacing the soil, after removing carefully that which has become inert or sodden. Leaves which are green and healthy should remain on the plants.

THE FLOWER GARDEN.

By T. H. CRASP.

ALTERATIONS AND IMPROVEMENTS.—During the past week little could have been done as regards the regular work in this department, but the making new flower-beds, walks, and shrubberies, the renovation of exhausted beds and borders, can now be carried out as far as the weather will permit. The baskets and vases which are filled in the summer with plants should be emptied of the soil so as to prevent injury from frost. Fuchsias, Chrysanthemums, and other half-hardy plants now cut down by frosts, should have a thick mulch of partly-rotted manure, finely sifted coal-ashes, or similar material. Holes

may be dug out for choice shrubs and trees, and if necessary, some of the staple may be replaced with fresh soil suitable for the plants. In the same manner, trees and shrubs which are not growing satisfactorily may be improved in vigour. Beds of autumn-sown annuals may be protected against frost and bright sunshine by having evergreen twigs stuck in the soil amongst them. The soil about the roots of climbing Roses should be examined, and if it should appear to be exhausted, it should be dug out round about the roots, and three or four barrow-loads of good soil placed about them, treading it in firmly. The soil may consist chiefly of sound turfy loam, with an eighth of the whole in rotten farmyard manure or leaf-mould.

FRAMES—Calceolarias, Pansies, and similar plants, in these shelters, will need full ventilation in mild weather. Decaying foliage should be picked off, and the surface of the soil stirred occasionally.

BEDDING PLANTS in warm-houses should have as much space allowed as possible, and full light, otherwise growth will be too rapid, and they will be very liable to be attacked by mildew and insects; the best place for them is a shelf near to the glass. Pelargoniums are an exception, for if room is limited, they may be stood in any out-of-the-way place, provided it is not reached by frost, and is provided with a fair amount of light, and the plants kept rather dry. This is a trying period of the year for all tender plants, such as Coleus, Alternanthera, Iresine, &c., and the only sure way of keeping them in health is to afford them warmth of 58° to 60° by night, and a little more by day.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

HINTS ON CURRENT OPERATIONS—In the East-India house, the greater part of the *Aërideæ*, *Vandas*, *Saccolabium*, will at this season be resting, and the tips of the aerial roots, which when growing are green, will have put on a whitish coating, indicating the period of rest. From this time until the roots of these plants recommence growing, the materials in which they are potted ought to be kept dryish, and the air of the house much drier than at other seasons. The flowering of these species in the spring will depend greatly on the kind of treatment afforded during the next six weeks; at the present time, the East-India-house temperature may descend on nights which are frosty to 55° without doing the plants any harm whatever. This house may be made to look gay with the later-flowering *Vanda Amesiana*—a grand species that is flowering here, and one that will remain in fine condition into the new year. It has very fragrant flowers. With these plants are arranged *Calanthe Veitchii*, of a good dark type of flower, *C. veitchii rubra*, *C. v. lutea*, and various *Cypripediums*, make a pretty display for so dull a season of the year. *Vanda coerulesa* I find to do well when placed at the cooler part of this house, hung close up to the roof in baskets or cylinders of teak. In these receptacles the roots run about on the outside. It is a rather difficult plant to keep in fine condition for any length of time, and a change at different seasons of the year into an intermediate-house, such as that of the *Cattleyas*, seems to put new life into the plant. It is a notion which I have that this species does not do well because growers will not always cut off the flowers after a reasonable time, but let them remain on the plants for too long a period. If we were merely satisfied to see all of the flowers open and then take the spike, we should see many more robust plants than we do. Orchid growers and gardeners will have noticed the shrinking of the leaves of *Vandas* after blooming, and many of these are lost. This, I take it, is caused by an excess of flowering. I took much notice in the summer of this year of a very healthy plant of *V. Denisoniana*, which bore two flower-spikes; when these were cut off the leaves began to shrivel, and it was some time before the leaves again plumped up. This is true also of *V. suavis* and *V. tricolor*. In the East-India-house *Cypripediums* and *Selenipediums* find a suitable home, and as these plants make their growth during the winter, watering will require careful attention, and any excess of moisture about the plants on the stages must be avoided. During the last few years some fine additions have been made by way of garden hybrids of *Cypripedium*, the best of which are from *C. insignis* and *C. Spicerianum*, which have the merit of being very free-flowering and good growers.

These may be grown in houses having a variety of temperatures, and the flowering season thus prolonged. Of the garden hybrids which flower at this season none surpass *C. Leeatanum superbum*, *C. L. giganteum*, and *C. L. Masereelianum*. Other useful varieties are *C. Swinburnei*, *C. Arthurianum*, *C. Bartlettii*, *C. cœnanthum*, and all these are of the *C. insignis* strain. *Dendrobium Cambridgeanum*, *D. chrysanthum*, if re-commencing to grow, must be encouraged with a few degrees more warmth, and just a little more moisture at the root.

PLANTS UNDER GLASS.

By BAILEY WADDS, Gardener, Birdsall Gardens, York.

ORNAMENTAL FOLIAGE PLANTS.—Considerable care will be required during these dark days to keep the decorative varieties of Palms that are moved about for house decoration in good health. Large plants are often required in small vases and the roots are cramped into small pots for that purpose. During the time they are standing in cold rooms or houses, keep them rather dry at the roots, or the foliage soon turns yellow. When this occurs, remove them as soon as possible to a warm-house, and let them stand for a time and become dry, then give a good supply of manure-water, or place the pot for five minutes in manure-water of the same temperature as the house they are in. *Kentias* are the best Palms for winter decoration; they will stand more ill-treatment than other kinds, and are the quickest to recover when brought into heat. *Scaevola elegans* is a very graceful Palm, but is soon injured, and does not recover like the *Kentias*. A pinch of good inodorous artificial manure sprinkled on the soil is very beneficial during the winter months to plants of this description. Where the pots are full of roots, it will help to keep the foliage a good colour, and there is no need to water it all in at once. *Cordylina indivisa* and *C. australis* should be grown in various sizes, from seedling plants in 60-sized pots to plants 10 feet high; small plants are very elegant for table decoration, and the larger size for vases and grouping. Cycads and *Beaucarnea* will require careful attention at this season; and if these or any other plants are affected with white or brown-scale, they should be thoroughly cleaned with insecticide. White-scale is the worst enemy to the plants, which should be placed on their sides, well syringed, and the foliage rubbed with the fingers or a sponge, brushing the stems with a stiff painter's brush. *Ficus elastica*, the India-rubber plant, is a very good window plant for the winter months, and if it is not over-watered, will last in good condition longer than most plants. For giving a tropical appearance to a conservatory or group of plants, there is nothing to beat *Musa ensata* with its bright green leaves and red midrib. It will stand in good condition for a long time in a cool house, and is very valuable for church decoration; *Musa Cavendishii* grows and fruits well in a large pot in heat, and pairs of them are very attractive on festive occasions. *Araucaria excelsa* is one of the best plants for church decoration at Christmas, placed in pairs in the nave or chancel. If *Araucarias* are scarce, good Spruce trees are likewise useful; and for a large church, good well-shaped Spruce, 12 or 15 feet high, cut out of the wood, trimmed up to the good branches, and spliced on to Larch or Spruce poles, to make them high enough to be out of the way of the heads of passers-by, and placed in pairs at a good distance apart from belfry to chancel, make a grand effect. Small plants of Spruce and *Cupressus Lawsoniana* in 6-inch pots are very useful for Christmas work; also *Euonymus europæus*, and *Aralia Sieboldii*, which in large or small pots still holds its own when well looked after. Very striking plants for standing in pairs are *Phormium tenax*, *P. variegatum*, and *P. Veitchii*—they stand well in a cool place.

CHRYSANTHEMUMS, as they finish flowering, should be cut down, and those required for supplying cuttings removed to a spare house. The best arrangement possible should now be made of those plants that will keep in flower during Christmas. Peter the Great, Ethel and Julia Lagravère are extra good this season, and are now at their best. Give as much air as possible night and day, with a little fire heat at times to dry up any damp. In advising leaving air on at night, one might say, beware of storms, and make all the ventilators secure. The storms the past three Fridays have been fearful. Frames or hand-lights should now be prepared in a lateinery for striking Chrysanthemum cuttings as soon as they can be obtained.

EDITORIAL NOTICES.

Letters for Publication.—All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for contributions, or to return unused communications, or illustrations, unless by special arrangement.

Plants, Fruits, &c., to be Named.—Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be good ones, carefully packed and numbered, and not more than six should be sent at one time. Leaves only, or Florists' varieties cannot, as a rule, be named.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—37.9.

The World's Horticultural Society. WE have been requested to give publicity to the following notification addressed *urbi et orbi*, and as it seems catholic, comprehensive, and cosmopolitan, it is not inappropriate at the Christmas season!

"To the Horticulturists of the World, Greeting.
THE WORLD'S HORTICULTURAL SOCIETY.

Immediately following the World's Congress on Horticulture at Chicago in August last, a series of meetings was held to consider the advisability of organising a horticultural society which shall include every country of the globe. After much discussion, in which many eminent men from various parts of the world engaged, the World's Horticultural Society was organised, and the election of the three general officers was held, on August 25. This new society is designed, in the language of the constitution, "to promote correspondence, and to facilitate exchange of plants and information between the countries of the world." This society can co-ordinate and extend the work of all existing societies, compile statistics, promote legislation and education, prepare correspondence directories, diffuse all the latest information from the various parts of the globe, consider means of transportation, and facilitate the exchange of varieties and every commodity in which pomologists, viticulturists, florists, vegetable gardeners, and other horticulturists are interested. The society will probably meet occasionally at the various international exhibitions, upon which occasions, also, it can greatly aid in procuring exhibits from all parts of the world.

The general charge of this great Society resides in three officers: the President, Vice-President at large, Secretary-Treasurer at large. There is to be a Vice-President and a Secretary-Treasurer for each country, who shall direct the affairs of the Society in their respective countries. The officers elected at Chicago on August 25, 1893, were:—PROSPER J. BERCKMANS, A.M., Augusta, Georgia, U.S.A., President; a native of Belgium, but for many years a prominent pomologist and nurseryman of the United States, where he is now President of the American Pomological Society; HENRI L. DE VILMORIN, Paris,

France, Vice-President: a distinguished horticulturist, scientist and author, who is favourably known throughout the world; GEORGE NICHOLSON, Secretary-Treasurer, Curator of the Royal Gardens, Kew, England: everywhere known as the author of the incomparable *Illustrated Dictionary of Gardening*. Later, the President appointed WILLIAM F. DREER, of Philadelphia, Vice-President for the United States: a man long and favourably known in the seed trade; and Mr. DREER appointed Professor L. H. BAILEY, Cornell University, Ithaca, N.Y., Secretary-Treasurer for the United States. At this juncture, Mr. NICHOLSON declined the office of Secretary-Treasurer at large, as it would be inconsistent with his present duties. This is a source of great regret to his many friends and admirers. Until a successor is elected, the Secretary-Treasurer for the United States has consented to act in the capacity of general Secretary-Treasurer.

The Society now requests the earnest and early support of its friends. The Vice-Presidents of the various countries will be announced soon, and the organisation will then be quickly completed. The Society needs the co-operation of every enlightened horticulturist and every important horticultural organisation.

PROSPER J. BERCKMANS, PRESIDENT,
Augusta, Georgia, U.S.A.

HENRI L. DE VILMORIN, VICE-PRESIDENT,
No. 22, Avenue de la Bourdonnais,
Paris, France.

L. H. BAILEY, Ithaca, N.Y., U.S.A.,
SECRETARY-TREASURER for the United
States, and TEMPORARY SECRETARY-
TREASURER AT LARGE

CONSTITUTION OF THE WORLD'S HORTICULTURAL SOCIETY.

This body shall be known as the World's Horticultural Society.

The object of this Society shall be to promote correspondence, and to facilitate exchange of plants and information between the countries of the world.

The membership of this Society shall be composed of societies in the various countries and of individuals, who shall subscribe to its constitution, and pay the membership fees.

The officers of this Society shall consist of a President, First Vice-President, and a Secretary-Treasurer; also a Vice-President and a Secretary-Treasurer in each country, independent state, or province, whenever suitable persons can be found who are willing to undertake the duties of such office. The officers shall constitute an Executive Committee, which may call meetings on such occasions of interest as may be deemed worthy.

The term of office of all officers of this Society shall be three years, and until their successors are duly elected and qualified.

The Vice-President in each country shall be appointed, at the outset, by the President of the World's Horticultural Society, after conference with the foreign representatives at the World's Columbian Exposition, or upon correspondence with horticulturists in the various countries.

The Vice-President of each country shall appoint the Secretary-Treasurer for that country.

The fee for societies shall be 5 dols. annually, or as near that amount as the currency of the country readily admits. The initial fee for individuals shall be two dols., or approximately that amount, which fee shall also be the dues for the remainder of the current calendar year. The annual dues thereafter shall be one-half that sum.

The funds shall be spent by the Executive Committee for the necessary expenses of the Society, which shall allow one-third of all the collections in each country to be retained there for its own expenses and to be disbursed by its own Secretary, except in the country represented by the President, where all the funds collected shall be retained, but that country shall pay its share of the general expenses. The Executive Committee has power to publish a periodical of the size and frequency of issue war-

ranted by the funds, and which shall be sent free to all members of the Society. In the absence of meetings of the Executive Committee, the President, First Vice-President, Secretary-Treasurer, and the Secretary-Treasurer of the country represented by the President, shall constitute a Finance Committee, which shall audit the accounts of the Society, any two of whom shall constitute a quorum.

The President, First Vice-President, Secretary-Treasurer, and Secretary-Treasurer of the country represented by the President, constitute the Committee on By-Laws of the World's Horticultural Society, any two of whom shall constitute a quorum.

Adopted by a meeting of horticulturists of various countries, in Chicago, Aug. 25, 1893."

OUR ALMANACK.—Secretaries of Societies and others, are earnestly requested to forward immediately, the dates of Show Exhibitions and Meetings of Botanical and Horticultural Societies of any kind for 1894, for insertion in the Almanack, to be published in our issue for January 6.

FLOWERS AND FRUIT FOR CHRISTMAS.

The present season has certainly offered more than usual facilities to the caterer for the flower, fruit, and vegetable market. The closing months of the year, if they have witnessed on occasions violent storms and excessive cold, have, nevertheless been fairly free from hard weather, necessitating unusual firing. In and about London, moreover, they have been almost entirely free from our common enemy 'fog,' and this fact in itself would prevent us from thinking the season other than kind. Under these circumstances it is not surprising that the supply of flowers at Covent Garden Market is quite equal to what we are accustomed to see at this time—and we may assure our country readers that means a great deal. The amount of produce that goes through this market during what is termed the Christmas season, is prodigious. Take for instance the trade in Evergreens; the letter published in these columns last week respecting the number cut for Christmas-trees, and passing through one firm, would surprise many; but at Covent Garden again the same thing is going on in same proportions. For forming the large specimens some 10 feet high or more, the common *Picea excelsa* is generally used. It is the most convenient for hanging articles upon, and very much better than the top of a Yew tree. Where all these large ones are required can only be imagined, but one thing appears certain, that Christmas-trees to-day are as popular as they ever have been. Laurel and miscellaneous evergreens for ordinary decoration are also plentiful, and the Holly—at any rate most of that which is sent here—is well-berried. Mistletoe in the greater quantity comes from abroad, packed in light crates, and is unusually well-berried. In regard to the flowers, abundance may be seen of Chrysanthemums, Roses, Azaleas, Callas, Tulips, Hyacinths, Violets, Lilies of the Valley, White Lilac presumably from France, Tuberoses, Lapergerias, Camellias, Lilium Harrisii, Mignonette, Orchids, &c. Many choice forced flowers will be noticed amongst the foregoing, and no doubt they have been produced without the usual amount of hard firing. White flowers very greatly predominate, no doubt an index as to which are most appreciated. Amongst fruits, Apples and Pears always hold prominent places. Apples may be had in any quantity, especially foreign productions. American Apples are still much in favour with the London house-keeper, who is easily misled by colour and size. And we hear of good English Apples being put into American cases in order to the better effect their sale. Still, English fruit fetches good prices. Ribstones are never retailed below 3d. per lb., and very inferior Blenheim Pippins we see marked 4d. per lb. On the other hand Newtown Pippins may be seen offered for sale at 2d. each. Pears of the best qualities are rather dear, and are chiefly continental consignments. English Grapes can be had good at 2s. to 2s. 6d. per lb., but the choicest are 3s. 6d. or even more. Oranges are just



HILLINGTON HALL, THE SEAT OF SIR W. FFOLKES, BART.

beginning to take their usual place, but as yet not much ripe fruit has made its appearance, although some fine samples of Floridas, Jaffas, and Canary Islands' Oranges may be seen in the shops; also Montserrat Lemons, and Mandarines. Indifferent-looking Melons are marked 1s. 6d. We noticed two punnets of Strawberries in one shop, but they looked far from tempting, though without doubt, a high price would be asked at this season. Amongst tropical or less popular fruits included at some of the stalls are Pomeloes, a name under which some of the smaller species of Shaddocks are sold, and Custard Apples the produce of *Anona reticulata*.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—On the occasion of the annual meeting of this Society being held next year at Cambridge, on Monday, June 25, and four following days, exhibits of cider, perry (by makers and growers), jams, and preserved fruits—all of 1893 growth, are solicited, substantial prizes being offered. The district comprises the counties of Bedford, Buckingham, Cambridge, Essex, Hertford, Huntingdon, London, Middlesex, Norfolk, Oxford, and Suffolk.

"THE KEW INDEX"—We have already announced the publication of the second instalment of this colossal undertaking, and but few additional words are now requisite, seeing that it is not long since we had occasion to comment on the plan of the work and the method followed in its compilation. The present part begins with *Dendrobium exculptum* and ends with *Justicia Zollingeriana*, thus completing the first volume of 1268 pages. To illustrate the enormous extent of the work and the labour connected with it, we may say that *Hieracium* occupies no fewer than thirty-three columns, *Erica* and *Eugenia* each take up twenty-three, *Euphorbia* thirty, *Ipomoea* seventeen, *Epidendrum* nearly twenty, &c. Indeed, if we may judge from almost daily use of the previously published fascicle, there is more reason to question the liberality of the compilers than their reticence. The mere incidental mention of a name introduced by an author by way of illustration in a paper not of a descriptive nature, does not in our opinion warrant the insertion of that name either as a synonym or as an adopted name in any systematic list or book. It is a mere *nomen nudum*, and its insertion sins, in spirit if not in letter, against the law that forbids us from attributing to an author that which he did not say. Nor would it be an answer to say that authors should not coin *nomina nuda*, because that depends upon the use that is to be made of the name. The attachment of the name of a botanist to "*Diervilla rosea*" is, we submit, unfair to the writer—and against the practice of the authors of the *Genera Plantarum* in analogous cases. *Eucephalartos* "*Acanthe*," Mast., is cited as a good species, but it was referred to E. Friderici Gulielmi = *E. cycadifolia* in the *Gardeners' Chronicle* by Mr. DYER in 1879, Jan. 4, p. 11. The very frequent reference to the pages of this book which we are constrained to make convinces us more and more of its extreme value, and enhances our admiration of the patience and judgment of the authors. The book is absolutely indispensable to any botanical reference library.

SHELTER FOR FLOWER-GIRLS.—A lady writes to the *Westminster Gazette* to suggest that shelters of the same kind as are provided for cabmen should be provided for flower-girls. In the good time coming, when London ceases to be "a squalid village," and is transformed into the "Place Beautiful," the authorities may go further than the lady who writes to our contemporary suggests. In that—the London of the future—the main thoroughfares are (at least, so say some of the prophets of the beautiful) to be dotted with *al fresco* flower markets, which shall give to our great arteries of traffic a greater measure of sweetness and light than they at present lend to life. Meanwhile, there is no reason why some enterprising firm of horticulturists should not adopt the suggestion of the *Westminster Gazette's* correspondent, and by presenting a flower-girls' shelter to the metropolis, see whether it is that sort of thing the women want

or would use. We are not, however, too sanguine as to the amount of appreciation with which it would meet, and should hardly care to be in charge of it. The average flower-girl of this generation has too many of the characteristics of the nomad to encourage us to believe that the suggested shelters would meet her views.

HORTICULTURAL CLUB.—The usual monthly dinner and *conversations* took place in the rooms of the club at the Hotel Windsor on Tuesday last. There was a good attendance of members, including Messrs. T. W. Girdlestone, Selve Leonard, Harry Turner, Charles E. Shee, J. Herbert Veitch, J. Carrington-Lee, George Bunyard, and the Secretary. Mr. Selve Leonard gave a very interesting account of his excursion to the Pyrenees during the past summer, describing the habitats of many of the peculiarly Pyrenean plants such as *Ramondia pyrenaica*, *Saxifraga longifolia*, and showed how peculiarly local they were even in the Pyrenees. M. HENRI DE VILMORIN supplemented this account with the description of his own experience in the same localities, and showed how in some of the valleys contiguous to the places visited by Mr. LEONARD, plants which he had been unable to discover would be found in abundance; several valuable hints were given by other members as to methods of cultivation, and the whole subject opened out a most interesting matter for discussion, in which nearly all those present joined. A cordial vote of thanks was accorded to Mr. SELVE LEONARD for having so much contributed to the instruction and pleasure of the members.

RAILWAY RATES.—We frequently hear complaints of the disproportionate cost of freight in the case of home-grown fruit or other horticultural product, as compared with that of foreign produce conveyed over the same line of rails. We have no monopoly in this matter, as we learn from *Garden and Forest* that, whilst it costs 50 cents to convey a box of Lemons from Florida to New York, the cost for transportation from Sicily is but 32 cents, to which, however, the Government, by way of making Lemons dear, adds a duty of as much more. From California to New York the railway charges on a similar package are 87½ cents.

ARTIFICIAL COLOURING OF FLOWERS AND FRUIT.—The tinting of flowers naturally white has already been spoken of in these pages, and now we have a little more to tell our readers about the same subject. It seems only natural that so purely fanciful an art should originate among our French neighbours, whose ingenuity is so well known. The *Revue Horticole* tells us a few of the secrets of the production of colour in flowers and fruit, and we mention them here for the benefit of any who may wish to try such a curious experiment for themselves. It is said that to colour flowers through the stalks, it is necessary to put five grammes (1 gramme = 15 grains) of any colouring matter into a vessel which will hold about ten grammes, to bruise the tip of the cut stalk with a light tap with a hammer, and then to put the stalk into the vase for a greater or shorter time, according to the depth of colouring required. Two hours after this contact with the dye, the tinting of the flower is accomplished. On taking the blossom from the vase, it is advisable to cut off the bruised part of the stalk and soak the flower for an hour or two in a vase of clear water. To tint white bulbous plants, fill a vase with fifty grammes of clear water and fifty grammes of colouring matter, stir the mixture up well, then, after slicing the bulb with a pen-knife in one or two places and cutting off the tips of the roots, leave it steeping in the tincture until the flowers begin to colour. Then replace it in the pot, covering it with a little moist earth, and the flowers will finish colouring there. Fruits as well as flowers can be artificially coloured, and sometimes this is done for the purposes of adulteration, as, for instance, when Plums are too green they are coated with acetate of copper and sulphate of copper. When too pale, Lemons are tinted up with citronine and "naphthol-yellow," the green spots being imitated

with "diamond-green." Strawberries are coloured by sprinkling them with "sulfo-fuchsine" or "rhodamine." Peaches receive a beautiful colouring from a mixture of "rhodamine" and "citronine," applied with a brush, using a zinc stencil-plate pierced with holes. In Melons a tube is introduced through which "atropeoline" and "orange azo" with a little essence of Melon is put into the centre. Very pretty varieties of Apples and Pears are contrived by using a little aniline dye. These devices may make bad fruit saleable, but are not examples to be copied, unless for the sake of making a curious experiment.

THE DUCAL GARDENS OF SAXE COBURG GOTHA.—H.R.H. Duke ALFRED, being an English prince, as well as a German potentate, will doubtless recall with pleasure the fact that the gardens of his palace, which date practically from the period subsequent to Waterloo, owe not a little to the English botanical specimens, which nearly ninety years since were thought necessary to give a then modern air to the gardens of the Duchy. In their midst is a ruin, which is one of the many proofs of the eccentricities to which some princes have been prone. Time's hand can claim no credit for the ruined Castle. It was built for the express purpose of being converted into a ruin, and no sooner had it been completed than it was bombarded by cannon, and so enabled its owner to have a ruin manufactured on the principle of "while you wait." Our authority is not a facetious journal, as we have taken our facts from *Loudon's Encyclopædia*.

THE WEATHER is not so inconsistent as its detractors hold it to be. It is now not at all unlike it was one hundred years ago. In the *Annual Register* of 1793, we, the other day, came across the following passage:—"The climate of England in the opinion of many has undergone a considerable change. Formerly we used to have smart frosts in winter, and hot and sometimes dry summers. For some years both winter and summer have generally been wet, and there has been so little ice in the winter, that luxury by its agents has been obliged to procure it from foreign parts. In the course of last year (1792), those who kept a register of the weather tell us that there were but one hundred and three dry days. For the time that is passed of the present year (January to February, 1793), we have scarcely had six dry days." How many times, we wonder, since that passage was written, would it have applied to the weather of the many years that have come and gone since 1793? It seems to us that the weather has a limited programme, and is constantly obliged to repeat itself. It must by now be feeling somewhat ashamed of its resourcelessness and sameness.

THE EXPERIMENTS COMMITTEE OF THE KENT COUNTY COUNCIL held a meeting at the Horticultural College, Swanley, on Thursday, December 15, at which the report of the last year was read and approved, after which Mr. PENTLAND SMITH, M.A., B.Sc., gave an account of the "Botany of the Potato Disease," illustrated by numerous diagrams, and went on to speak of the preventives.

TECHNICAL HORTICULTURE.—As a result of the practical teaching on these subjects undertaken in Surrey under the auspices of the County Council, we are pleased to hear that in one case a gardeners' society has been formed. The object of the society is to discuss subjects connected with horticulture, and to keep up the interest engendered by the lectures of Mr. JOHN WRIGHT.

COMPLIMENTARY DINNER TO MR. GEORGE CANNON.—In recognition of Mr. CANNON's services to the Ealing Horticultural Society as its Secretary, and also as the Vice-Chairman of the Ealing and District Gardeners' Society, this gentleman, who has just embarked in business on his own account at Ealing, was entertained at a complimentary dinner at the Lyric Hall, Ealing, on the 15th inst., the Chairman being Mr. RICHARD DEAN. In responding to the toast of his health, Mr. CANNON stated he was the son of a gardener, and while fresh from school he went into the nursery of Messrs. OSBORN

& SON, at Fulham, where he came under the tuition of Mr. PITMAN, who served the firm as fruit-tree cultivator for something like sixty years. He went thence into the service of Mr. ALEXANDER DANCER, at Fulham, and from thence to the private garden of Lord RAVENSWORTH; but, preferring nursery-work, he found his way into Messrs. RICHARD SMITH & Co.'s Nursery at Worcester, where he gained a good insight into out-door and office-work, and from thence, twenty-seven years ago, he came to Ealing to take charge of Messrs. LEE & SON'S Nursery there; certainly a praiseworthy record for a man yet in the vigour of his prime. A large company was present, and the dinner passed off in a satisfactory manner.

WOOD PAVING.—Since the previous note on this subject was penned, the writer has observed a paragraph in the daily press, in which it was stated that sundry streets in Paris are being paved with Mahogany blocks! This is not the case, as the same woods are being used there as in London—Jarrah, the produce of *Eucalyptus rostrata*; and Karri, another member of the great genus *Eucalyptus*. The Jarrah has been most used with us, probably, but the Red Gum is coming to the front. Western Australia is the source whence the supplies are drawn, and the area now being extensively tapped exceeds, or at any rate equals that of Great Britain. The forests are not far distant from seaports, and the trade is being largely developed by our merchants and contractors. The results obtained in Australian towns are very satisfactory—doubtless the same record will be given here of the Australian hard-wood pavements.

A NEW HORTICULTURAL SOCIETY.—The old Reigate Rose Association, Mr. R. E. WEST writes, having ceased to exist, it has been proposed to form a new one, to be called The Reigate and Redhill Horticultural Association, and that it may be established on a wide and popular basis, to unite it with the Reigate Cottage Gardeners' Society. At a meeting of the committee of the latter, held December 2, this project was agreed to, and I was then appointed their Joint Hon. Sec. (*pro tem.*), with Mr. W. WELLS, and requested to collect names of those who are willing to become members of the new association. It seems important that the Reigate district, so famous for Rose-growing, should not remain without a representative society of this kind, and already several promises of liberal support, both in annual subscriptions and special prizes, have been given. The Rose section of the united societies will be under the rules of the National Rose Society.

THE REIGATE AND REDHILL HORTICULTURAL ASSOCIATION.—This Society has, we learn from another source, started auspiciously with a fair amount of subscriptions promised from residents in the town and neighbourhood, and also from persons at a distance, besides six special prizes offered for the best six dishes of out-of-door fruit, for Roses, for table-decorations, for table-plants, &c. The date of the show next year is fixed for Wednesday, July 4; and an excellent schedule of prizes will be offered, the awards including the National Rose Society's Medals.

FLOWERS THAT LAST.—Among other flowers this Christmas time we have a few of *Ornithogalum lacteum*, that have been kept nearly three months. About the end of October last some scapes of this handsome plant were handed to us by Mr. CHARLES AYRES, of Cape Town, who had brought them to England, and which he had cut from the plants on October 10. Many of the flowers at the base of the raceme had already expanded when we put them into water. During the whole time since then until now, they have been very attractive, and fresh flowers have been constantly opening towards the apex of the scape, and as far as it is possible to see, they will remain so until beyond the 10th of January, or three months after the date on which they were cut. There are few flowers that will last so long as this, and it is certainly quite unusual to cut one's

flowers for Christmas decoration so early as the 10th of October. This plant, like several other of the greenhouse species of the genus, has been known in England a long time, though it is very generally neglected—indeed, it is rarely seen in our private gardens. *O. lacteum* was introduced from the Cape in 1796, and has been several times figured. A good one may be seen in the *Botanical Magazine*, t. 1134, where the handsome appearance of the scape is well represented. The scape is often 2½ feet high, and produces close upon a hundred flowers, placed closely together. The flowers are rather more than an inch broad, and the petals are quite white; the superior ovary is green, and there are six stamens, bearing pale yellow anthers. The culture the plant requires is of the very simplest, and treated with fair liberality in an ordinary greenhouse, it will prove of little trouble.

BIRMINGHAM BOTANICAL AND HORTICULTURAL SOCIETY.—We learn from a schedule recently issued, that it is intended to hold a Narcissus (*Daffodil*) Show in the Botanical Gardens, Edgbaston, on Wednesday and Thursday April 18 and 19 next, when prizes in accordance with the schedule will be awarded. The Edgbaston Gardens will be opened on the first day of the show at 2 P.M., on the second day at 9 A.M., and will be closed at half-past 7. W. HILLHOUSE, M.A., is Hon. Secretary; and F. W. BURBRIDGE, Esq., F.L.S., will act as Judge.

PEEBLESHIRE HORTICULTURAL ASSOCIATION.—The members of this body met at the Lesser Good Templars' Hall, at Peebles, on Wednesday, the 13th inst., Mr. SLATER presiding; and on this occasion Mr. FOREST read an excellent paper on the "Carnation." Mr. L. MACKINTOSH, gardener, of King's Meadows, exhibited some Carnation-stakes, which were stated to be more useful and lasting than Bamboo. After a discussion on the foregoing, Mr. MACKINTOSH read a paper on "Root-pruning."

TRINIDAD.—Our valued correspondent, Mr. J. H. HART, is delivering a course of six lectures on Botany at the Victoria Institute, Port of Spain, Trinidad. Incidentally, he gives an amusing illustration of the usual worthlessness of popular descriptions of plants as a means of identification, and of the occasional value of such descriptions. A lady, it appears, desirous of information wrote a long description of a plant, such as that the blossoms were "minute, powdery, like small feathers," which afforded no clue as to what was meant, till she added that the flowers were succeeded by a row of boot-buttons! when Mr. HART was enabled to identify the plant as a *Phytolacca*.

THE SURVEYORS' INSTITUTION.—At the ordinary general meeting, held on Monday, December 4, 1893, the President (Mr. CHARLES J. SHOPPEE), in the chair, a paper was read by Mr. R. GODFREY (Fellow), entitled "The Local Government Bill, 1893" (generally known as "The Parish Councils Bill"). A discussion followed and was concluded, and a vote of thanks was unanimously passed to Mr. GODFREY for his paper. The next ordinary general meeting was held on Monday, December 18, when a paper was read by Mr. E. J. CASTLE, Q.C. (Associate), entitled "The Valuation (Metropolis) Bill, 1893."

SNAKE BITE.—Mr. STOREY, Superintendent of the gardens of the Maharana of Oodeypore, in his annual report says: "I regret to record the death of one of the gate-keepers. The poor fellow, after taking his evening meal, laid out his bed in the lodge, and went outside to have a chat with some of his friends. During his absence, a large snake, a cobra, unobserved, entered his bed and coiled itself under the mattress, and lay there all night. The poor old man, knowing nothing about it till he went to roll up his bed in the morning, when the reptile bit him on the right hand. He ran to the nearest workmen, telling them what happened, and begged of them to cut off his hand with his sword; but none of them had courage to do so. I sent for

Dr. SHEPHERD of the Scotch Mission, but this gentleman was visiting a patient a long distance away. He very kindly came with all speed to the old man's assistance, and did all he could for the poor fellow, but he died at 10 A.M. the same morning."

"REVUE DE VITICULTURE."—A special journal devoted to the interest of wine-growers is about to be established by M. VIALA and M. RAYAZ. M. VIALA's splendid book on the diseases of the Vine, which we noted some time since, affords assurance that the new publication will be one of high tone and great utility. The *Revue de Viticulture* will take cognizance of all points connected with the Vine and its culture. No doubt the publication will be of great use in our wine-growing colonies, and will be of service even in countries where the Vine is grown though no wine is made. The publishing office is Rue de Mirbel, 4, Paris.

WINCHESTER GARDENERS' ASSOCIATION.—On Thursday, Dec. 14, a lecture on the "Chemistry of Soils" was given by Mr. C. W. HERBERT GREAVES, under the auspices of the Technical Instruction Committee of the Hants County Council. In a lecture on the same subject, delivered a fortnight previously, Mr. GREAVES had discussed the substances forming the bulk of soils, namely, sand, clay, humus, and limestone, giving the chemical and physical properties of each, describing its function in the soil, and showing how any excess of either of these components could be corrected. On the present occasion, the true plant-foods were considered in some detail, and the use of chemical analyses of plants and soils was explained. The lecturer recommended the establishment of experimental plots, with a view to ascertaining the requirements of any particular soil, remarking that the results obtained from these would generally be of greater service to practical gardeners than actual chemical analyses, although the latter were frequently invaluable. In conclusion, Mr. GREAVES strongly urged his hearers to seriously take up the study of elementary science, particularly chemistry. The lecture, which lasted for more than an hour and a half, was listened to attentively, and was followed by questions.

HORTICULTURAL EDUCATION.—We take the following from Prof. BAILEY's address to the Agricultural Association of Cornell University, Ithaca, New York:—"The fruit interests of New York are greater than those of any other State, save only those of California. The cultivation of the finer plant products is yearly becoming more attractive and profitable to those who understand it, and it is the chief encouragement to small holdings of land. One division of horticulture has been entirely overlooked in educational institutions. This is floriculture, which is probably expanding more rapidly as a business than any other agricultural occupation. Two years ago, nearly 20,000 people were engaged in commercial floriculture chiefly under glass, and the value of the product was over 26,000,000 dols. It is an industry to which women are specially adapted, and about 2000 women were engaged in it in the census year. Moreover, the amateur interest in flowers and ornamental gardening is enormous, probably even exceeding that of fruits in the eastern States. Yet there is no school in North America to which the florists can turn for professional instruction. The Society of American Florists, which is the strongest horticultural organization in America, has repeatedly urged the importance of floricultural education. There is probably no class of our population of equal extent which is entirely without the means of higher education. Here is an unexampled opportunity to make a signal departure in educational institutions. Shall Cornell first enter the field? For the equipment of a working plant in pomology, floriculture and kindred horticultural pursuits, a sum of at least 50,000 dols. is needed at once."

"MEEHANS' MONTHLY."—December closes the third volume of *Meehans' Monthly*, a magazine which is attempting the feat of combining what ordinarily would be the monthly parts of a work to be bound

into volumes for all time, with the general literature of transient magazines. In this issue we have the full history, with a living picture, of one of the beautiful prairie flowers, *Baptisia leucophæa*, one of the wild Indigos, with sixty-eight other chapters on wild flowers, popular natural history, fruits, vegetables, and garden history, and garden lovers. Among the latter are sketches of FRANCIS PARKMAN, the historian; ANNE PRATT, the painter of wild flowers; MENZIES, the explorer of the botany of the Pacific; Professor HAGAN, the entomologist; Professor PRINGSHEIM, the biologist; and last, but not least, the still living and widely-known Professor PEPPER of the Pennsylvania University, of whom a portrait is also given. The Roman Catholic Bishop, McQUAID, of Rochester, is described as a rare lover of gardening, and a sketch of his grounds given. Strawberries, which curiously sometimes have young plants growing from the berry in the place of seeds, are illustrated and explained. The publishers, THOMAS MEEHAN & SONS, Germantown, Philadelphia claim that no similar work gives as much instructive matter in so small a space, and of value for reference for all time, at so cheap a rate as this.

VITIS COIGNETIÆ.—No climbing plant, says *Garden and Forest*, except, perhaps, the *Ampelopsis tricuspidata* or *Veitchii*, of the same country, compares at this time in brilliancy of foliage with the Grape Vine of Northern Japan, *Vitis Coignetiae*, a species closely related botanically and of the same general appearance as the North American *V. Labrusca*. In the forests of Yezo, *V. Coignetiae* climbs into the tops of the tallest trees, filling them with its enormous leaves, which in autumn assume the most brilliant hues of scarlet. In the United States it appears to be perfectly hardy, and promises to present in autumn as brilliant a spectacle as it does in its native country. It is, both in the size of its foliage and autumn colouring, a much more desirable ornamental plant than any of the American Grape Vines; and it can be planted to advantage wherever sufficient space can be given it to climb among tall trees or to cover large arbors or other edifices. The fruit, late in the season, after it has been frozen, is eaten by the Japanese, who find it palatable; the flavour, however, is not much better than that of common wild Grapes, and it is only as an ornamental plant, or as a stock on which to graft less vigorous species or varieties, that *V. Coignetiae* will be found in our gardens, where it seems destined to play an important rôle.

MR. J. O. GRIFFITS, Q.C., is better known in legal than in gardening circles. But now that he is about to leave his native town (High Wycombe), his departure reminds us of the fact that he is one of the pioneers of public gardens and open spaces. Nearly twenty years since, when they were seldom heard of, Mr. GRIFFITS followed up his presentation of a free library to his birthplace by purchasing and presenting to Wycombe the "Frogmore" Gardens.

A WELL EARNED TESTIMONIAL.—The *Essex Telegraph* of the 9th contains this pleasant little item: "Mr. WALLIS P. BUTTRUM has been presented with a very handsome dinner cruet, subscribed for by the members of the St. Botolph's (Colchester) Chrysanthemum Society, as a slight recognition of his able and energetic services as Hon. Sec. to the Society."

SOLANUM GUATEMALENSE, MELON-PEAR.—"By this post we send you specimens of the new fruit, stock of which we have been distributing the last few years—*Solanum guatemalense*, or Melon-Pear; and we think when it becomes better known, it will be very popular, as it succeeds Melons, and will prove not only a valuable addition but a great ornament to the winter dessert table. It is easily cultivated, and the fruits sent have been ripened in a cool greenhouse. Like the Melon, we find the flavour improved by the addition of a little fine sugar. *R. H. Vortegans & Co.*"

AMERICAN MARKET GARDENS.—M. H. DE VILMORIN gives, in the last number of the *Journal*

de la *Société Nationale d'Horticulture de Paris*, some interesting statistics, which suffice to show the vast extent of the industry in the States. In 1891, 216,765 men, 9,254 women, 14,874 children, and more than 75,000 horses or mules were engaged in the work, over a total area of 534,440 acres, yielding a net revenue of over 397 millions of francs. Further details show that the area devoted to Asparagus was 37,000 acres; Cabbage, 77,000 acres; Celery, 15,000 acres; Spinach, 20,000; Pastèques (Water Melons), 114,000 acres; Peas, 56,000 acres; Sweet Potatoes (Patates), 28,000 acres; Tomatoes, 22,000 acres; and miscellaneous, 82,000 acres. M. DE VILMORIN comments on the fact that so large a proportion is devoted to watery vegetables, and so little relatively to farinaceous ones, and attributes it to the greater heat experienced; for even in the North-East Atlantic States the climate is very hot in the summer months.

"LE PETIT JARDIN."—Whilst in this country we boast at least nine weekly gardening papers, and whilst there is scarcely one of the local papers throughout the country which has not its gardening column, it appears that in France up to this moment there has not been a single weekly journal devoted to gardening! The present publication is intended to fill that void, and is addressed to the same class of gardeners as that to which the supporters of our penny papers belong—amateurs and others. We cordially wish our newest confrère all the success which we doubt not awaits him.

DIVIDING PLANTS AMONG SCHOOL CHILDREN FOR CULTIVATION.—We read in the *Gartenflora* for November, that in the neighbourhood of Steglitz the school children receive from the Steglitz Horticultural Society plants in variety for farther cultivation, and it is hoped that by so doing the children will have greater regard for trees, &c., and not be guilty of wilfully injuring them. It may be of interest to some of our readers to hear in what way the plants are given to the children, and that after the lapse of four or five months they are brought to the school again for exhibition, and prizes awarded to the most worthy. About the middle of May the children received each two plants gratis, boy and girl alike. In this school there were 170 scholars. This year the plants were *Pelargonium peltatum* and the perpetual-flowering *Carnation Grenadier*. Each plant has affixed to it the Society's leaden mark (Kreins plombe), together with a little sheet of printed directions with regard to the cultivation of the plants. Besides this the children are given by the society the necessary quantity of soil for repotting purposes, which is kept in stock in a stable. At the end of October the children bring their plants to the Society's rooms. The pots are stood in a row, each with its number, and four or five judges give their awards. This year the available funds were but 50s., and this sum was divided in this way. For *Pelargonium peltatum* one child received as first prize 3 mk., = 3s., and the Society's Certificate; five children got each 2 mk.; eight children, each 1½ mk.; and ten children each ½ mk. For *Carnations*, one child received 1½ mk.; five children each 1 mk.; and seven children ½ mk. each. We note this little bit of school horticulture because it seems to be just one of those things that our rural societies might well take in hand, costing but little, and yet effecting much good.

GROWTH v. REPRODUCTION.—Mr. J. C. ARTHUR contributes to *Agricultural Science*, vol. vii. (1893), a paper read by him before the Society for the Promotion of Agricultural Science, and entitled, "A New Factor in the Improvement of Crops," in which he draws especial attention as to a novel, or at least a too little understood fact, to the principle that a "decrease in nutrition during the period of growth of an organism favours the development of the reproductive parts at the expense of the vegetative parts." Or, in plain English, that a plant cannot be expected to increase in individual size and to bear seed at the same time; that development cannot be maintained in all the organs at once.

One of the chief applications of this principle to practice relates to the management of farm and other crops where "by manuring, high cultivation, or otherwise forcing a greater yield, we are increasing the total product of stem, leaves, and roots much more than of seed and fruit."

PUBLICATIONS RECEIVED.—*Bulletin of United States National Museum*, No. 44 — *Insect Life*, vol. vi, No. 2.—*Bush's Bromley Budget*.—*Bulletin de la Société Linnéenne de Paris*.—*Pharmaceutical Journal*.—*Handelsblatt für Deutschen Gartenbau*.—*Agricultural Science*.—*Museum d'Histoire Naturelle*.—*The Exchange Catalogue of Seeds from the Jardin des Plantes* has been published. Applications should be made to the Director, 57, Rue Cuvier, Paris, before the 31st inst.—*Dictionnaire Pratique d'Horticulture*, liv. 20. (O. DOIN, Paris).—*Chelsea, Illustrated*. (PIKE & Co., Brighton).—*Jardin des Plantes de Montpellier, Seed Catalogue*.

PLANT PORTRAITS.

ARENARIA MONTANA, *Garden*, December 2. A pretty little rock plant, with relatively large white flowers.

BERBERIS FREMONTI, *Neubert's Garten Magazin*, n. 23, p. 361 (1893). A pinnate-leaved species, with yellow flowers on long slender stalks, followed by small globose red berries. Colorado.

DIPLODENDRA ATRO-PURPUREA, *Garden*, November 25.

FRAXINUS RHYNOPHYLLA, *Garden and Forest*, November 22.

MAGNOLIA FRASERI, *Garden*, November 11.

MALLOTOPUS JAPONICUS, *Tokyo Botanical Magazine*, August 10.

PEAR DR. JULES GUYOT, *Bulletin d'Arboriculture*, &c. October.

PEENANTHES ALBA (Compositæ), *Meehan's Monthly*, November.

SALIX AMPLEXICAULIS, *Gartenflora*, November 15.

ASA GRAY.*

To those who had the pleasure and privilege of an acquaintance with Asa Gray, the perusal of these volumes will be delightful indeed. The great American botanist was so clear-headed and sagacious, yet so simple-minded, so modest, so free from jealousy and prejudice, that it is no wonder he was as much beloved for his personal qualities as respected for his erudition. The two volumes before us give an admirable presentment of the man as he was to his friends and colleagues. Seldom, indeed, have we read a biography so thoroughly well done. The whole story of Gray's life and work is told in the most complete and orderly fashion, and with such art that the work of the editor, great as it must have been, is nowhere obtruded. Its influence, however, is all the greater.

The volumes open with an autobiographical fragment which extends over the first thirty years of his life, and which is interesting, as giving details as to his early career which are not generally known. But the great charm of the book consists in the series of letters addressed to various friends and colleagues, and which are so complete and so well selected that, as we have already said, they give an excellent idea of the man as he was throughout his whole career.

We gather that the Grays emigrated to Massachusetts from the north of Ireland; whilst on the mother's side Gray traced his descent from one Thomas Howard, who came from Maidstone or its vicinity in 1634.

Of Gray's boyhood it is unnecessary to speak here. In 1826 he entered the Medical College at Fairfield in the State of New York, at that time the largest medical school in the country, except that at Philadelphia, but which was discontinued in 1840, passed the vacations in the surgery of a country doctor "office" it is called in these pages), and graduated from the college in 1831.

* *Letters of Asa Gray*, edited by Jane Loring Gray, in two volumes. (London, Macmillan & Co.)

During his career as a medical student, his botanical proclivities were aroused by the perusal in winter of the article on botany in Brewster's *Edinburgh Encyclopedia*. At that season he was out of reach, as he tells us, of a greenhouse or of a potted plant. But in the following spring he sallied forth into the woods and found an early specimen of a plant in flower peeping through the dead leaves. Taking it home he was enabled by the aid of *Eaton's Manual* to determine it as *Claytonia virginica*. This was the beginning. In 1830 he had occasion to go to New York, where he had an introduction to Dr. Torrey. Torrey was absent at the time, but responded to the young student's inquiries by letter, and thus began that intercourse which for many years rendered the names of Torrey and Gray as it were inseparable. In 1830 Gray gave his first course of botanical lectures at the college at which he had graduated, and gaining thereby an honorarium of forty dollars, devoted the sum to a tour in the western part of the State of New York, as far as Niagara, &c. This was the first of that long series of botanical excursions and travels which subsequently formed so important a feature in Gray's life. About this time we find him acting as a teacher in natural science in a school at Utica, teaching the boys chemistry, geology, mineralogy, and botany, and making with the boys very pleasant botanical excursions through the country round. In 1833 or 1834—for the date is not given with certainty—he met Dr. Torrey for the first time, and collected plants for him in the Pine barrens of New Jersey, subsequently availing himself of Torrey's invitation to act as his assistant during his course of chemical lectures. He still remained as teacher at the school at Utica, but made excursions during the vacations, excursions which enabled him to collect and distribute his first century of American grasses and sedges, and to accumulate materials for his first paper in the *American Journal of Science* (on "Mineralogy").

In 1836, after a short period of uncertainty, we find him appointed Curator of the Lyceum of Natural History in New York, in which capacity he found time to assist Torrey in his projected *Flora of North America*. About this time there was a chance of Gray's visiting the South Pacific regions as naturalist to an expedition, but this fell through, he having accepted the Professorship of Natural History in the University of Michigan. In 1838 were issued, at the joint expense of the authors, the first two parts of Torrey and Gray's *Flora of North America*.

It soon became apparent that the North-American flora could not be properly worked up without consulting the herbaria and libraries of the great botanical centres in Europe. Moreover, the newly-constituted University was deficient in books; Gray, therefore, was allowed a year's leave of absence, a year's pay, and, in addition, a sum of 5000 dol., to be expended in books for the library. The young Professor, thus equipped, sailed in November, 1838, for Liverpool, whence, after a passage of twenty-one days, he proceeded immediately to Glasgow, and became the guest of Dr., afterwards Sir William, Hooker, then Professor of Botany in that University. Dr. (now Sir Joseph) Hooker was at that time pursuing his medical studies in the University.

Dr. Hooker received the young American with great cordiality and kindness, and thus commenced that long acquaintance with the two Hookers, which was so pleasant to them all, and of so much moment as regards the progress of botanical science. Provided with ample and excellent introductions, Gray then visited Edinburgh and London, making acquaintance with Greville and Balfour, Boott, Robert Brown, Lambert, Bennett, Lindley, Bauer, and all the botanists of the time, not forgetting Bentham, who gave him a full supply of letters to botanists on the Continent.

Among the visits then (1839) made was one to N. B. Ward, whose cultivation of plants in close cases attracted much attention. With Ward he went one day to dine with Menzies, then over ninety. This first visit to England was of great importance, as he then made acquaintance with our leading botanists, and that acquaintance soon deepened into

a warm and affectionate friendship, which was of life-long duration. In March, 1839, Gray left London for Paris, and there was as soon at home among the French botanists as he had been in London among the English ones. Proceeding on his way, he visited, to mention only the botanical centres, Lyons, Montpellier, Florence, Pisa, Padua, Venice, Trieste, Vienna, Munich, through Switzerland, to Geneva, seeing the De Candolles and Boissier. Thence he passed through Germany to Halle, Berlin, and Hamburg, and from the latter place back to London, and thence to New York. Everywhere he seems to have been well received, to have made life-long friends, and to have accomplished no slight amount of botanical work. This, as we have said, was the first of a series of similar visits at intervals, visits which were so agreeable to his hosts that in a spirit of true scientific good fellowship, Gray was never looked on here as a foreigner, but always as an Englishman. That the feeling was reciprocated is shown in these volumes by the circumstance that in after years, when political craft or unfortunate blundering had well nigh produced an estrangement between the nations, Gray was considered by his own countrymen as too much of an Englishman!

In 1841, Gray was elected Professor of Natural History in Harvard University, Cambridge, undertaking the duties of Professor of Botany and the charge of the Botanic Garden. This was the beginning of his long connection with the famous American university—a connection that lasted till his death. We have not space even to summarise his proceedings, which are delightfully narrated in his letters; but we must pass on to his second visit to Europe in 1850. Arriving in London, he was the guest of N. B. Ward, who had by this time removed to Clapham. He saw the Hookers, and, as usual, made the most of his time, visiting and sight-seeing, inspecting, among other things, the pinetum at Bayfordbury, where, he says there were 600 (?) species of Conifers in cultivation. From London, Dr. and Mrs. Gray passed into Belgium, and thence into Germany, Switzerland, Holland, and back to England, repeating the proceedings of his first visit, and making new acquaintances. In England he stopped with Bentham in Herefordshire for two months, busily occupied with botanical work. From Herefordshire he went to Ireland, to visit Harvey, and returned to work hard all the winter at Sir W. Hooker's house at Mortlake, where the herbarium then was, and where Sir Wm. Hooker was resident as Director of the Royal Gardens, Kew.

A third visit to Europe in 1855 was necessitated by the illness of a relative. The visit was of short duration (six weeks); but, as usual, Gray managed to do a good deal of botanical work in it.

And now comes a most interesting portion of Gray's life, that is, to botanists; it is the period, speaking roughly, when De Candolle's *Géographie Botanique* was published, when Hooker and Thomson published the first volume of the *Flora Indica*—unhappily too good to be completed, when Bentham issued his *British Flora*, when Robert Brown died, and when Darwin's *Origin* first made its appearance. Every naturalist knows how greatly the acceptance of Darwin's views on evolution was facilitated by the writings and advocacy of Asa Gray. His great knowledge of plants and their variation, his clear logical mind, his fairness and candour, matched only by those of Darwin himself, caused his associates to attach great weight to Gray's opinions; whilst to the outside public his persuasiveness, his high character, deep religious feeling, and acceptance (against Darwin in this particular) of the idea of design in Nature, gained him the ear of people who were repelled by the pugnacity of some of the early adherents of Darwinism, and who were unable to appreciate the technical details upon which the theory of evolution was based. Naturally this is a most interesting part of the book, but the story has been told before at greater length in *Darwiniana*, and in the *Life and Letters of Darwin*. We now come to that terrible crisis in the affairs of the United States when the disruption of the Union was threatened. From the first Gray took a clear view of the nature

and the necessities of the case, and devoted himself heart and soul to the cause of the North, in the full conviction—right, as circumstances proved—that that was the best course for humanity at large, and for America in particular. Gray was too old for active service in the field, but not too old to serve as a Volunteer. In connection with this stirring time is one of the few notes of the Editor. "It is hard to realise," she says, "in these days how all the community worked together in all possible ways; it was the business of life."

Gray's opinions as detailed in his letters are singularly clear and forceful, and they give a better idea to the general reader not conversant with the causes of the struggle, or familiar with the details of the war, its nature and its significance, than could be obtained by wading through volumes of history. Happily his botanical labours were not entirely interrupted, nor did his friendships with his old associates suffer any diminution.

In 1868 Dr. Gray, again accompanied by his wife, made another journey to Europe, staying in England with Mr. (afterwards Dean) Church in Somersetshire, with Darwin and the Hookers in Kent, and Tyndal. After working at Kew they went to Paris, and thence to Egypt, returning through Italy, Switzerland, and Germany, following the same mixed course of work and social intercourse as on former visits.

In 1872 he gave up the superintendence of the botanic garden, and had a holiday with Mrs. Gray in California, high festival being amongst other things held on Gray's Peak, 14 400 feet. On the journey we are told he wrote his well-known address to the American Association on the big trees "Sequoia and its history."

In 1873 he resigned his professorship, retaining, however, the curatorship of the herbarium. In the following year Gray passed the winter in Florida on account of his health, and where as he says in one letter "the botanising was delicious," one of the delights consisting in seeing the Torreya in its native locality. In 1876 there was a visit to the herbarium from the then Emperor of Brazil, whose scientific tendencies are well known, and an amusing account of the interview is given. In 1876 came a holiday in the North Carolina Mountains [see p. 772 of our present issue]. In the following year occurred that memorable journey with Sir Joseph Hooker, Engelmann, Hayden, Sargent, and Parry, to Colorado and California.

In 1880, Dr. Gray again sailed for Europe with Mrs. Gray, with the object of studying the herbaria for the new volume of his *Synoptical Flora*, devoting special attention to the Asters, which, from its extent and complexity, he calls a "rascally genus." On this occasion Spain was visited. Returning to Kew, he worked all the winter, passing again to Italy and Switzerland, and France in the following spring.

In 1882, Darwin died, and Gray writes of him:—"We hardly should have thought, twenty-five years ago, that he would have made such an impression upon the great world, as well as the scientific world. In that year the botanist paid a visit to Montreal, on the occasion of the meeting of the American Association for the Advancement of Science in that city, and took part in the proceedings when the British Association met in the same city two years later. In the same year Bentham died in his eighty-fourth year, not before he had completed, with Sir Joseph Hooker, the *Genera Plantarum*."

In the spring of 1885 Dr. and Mrs. Gray proceeded to New Orleans, and thence to Mexico, seeing much of interest, and being made much of, as was meet. The same desire to do honour to the veteran showed itself in the presentation to Gray, on the occasion of his seventy-fifth birthday, of a tribute of love and respect from the botanists of America. Some 180 American botanists, from all quarters of the vast territory of the States, took part in this manifestation, which surprised the recipient almost as much as it gratified him.

The last visit of Dr. and Mrs. Gray to Europe took place in 1887, when the usual routine of mixed work, travel and pleasure, was followed. In June

of that year he received at Cambridge an honorary doctorate, and, as might have been expected, was greatly interested in the ceremony. Oxford and Edinburgh paid him similar compliments in the same summer; and the Queen's jubilee, which was then being celebrated all over the kingdom, furnished the republican with a good idea of the solidity of our own monarchical institutions. But the end was approaching; and on January 30, 1888, that busy, happy, well-filled, useful life was at an end.

We have alluded to some of the more important incidents of his career, but naturally we have not dwelt at length on the extent and importance of his scientific work, neither is that critically treated in the volumes before us; but the story of Gray's life is so thoroughly well told that the reader will have no difficulty in supplying for himself the details he may require. A good Index makes it certain that the book will be valued in the future by botanical

changing to dark green, with lighter ribs; and niger, foliage bronze coloured, changing to dark green, with reddish ribs.

THE LATE EARL OF WARWICK.

IN the death of the Earl of Warwick all interested in the cultivation and products of the land have lost a most considerate and faithful friend. Tenants, servants, and poorer neighbours had always his practical sympathy. The sylvan beauties of Warwick Castle are known throughout the world, and have been several times recorded in the *Gardeners' Chronicle*. But how much they were improved by the late Earl and his accomplished Countess is only known by those who have been acquainted with and taken an interest in this historical place during the last forty years. To all lovers and students of Nature, this demesne was

to him, as also were the many trees and shrubs brought by him or some member of the family from foreign countries. The Oak above-mentioned has a story belonging to it, which is, that the acorn from which it grew was brought from the famous Leamington Oak, germinating in a bottle of water. The late Earl was given to experimenting with tender plants, so as to prove their suitableness or adaptability to bear our climate; the grafting and inarching of fruit trees and Vines to improve the flavour of the fruit. Flowers of all species had a charm for him, but Daphnes, the Jasmine, and Roses were his favourite flowers, and among Roses, such old sorts as Lord Macartney's Banksian and Austrian Briars, which do so well on the Castle walls, were to him a source of pleasure. C.

HOME CORRESPONDENCE.

THE RED PYRACANTHA.—The evergreen Thorn may be said to be compensating us for the great lack of Holly berries this Christmas. In my own district all the plants I have seen, occupying open, sunny positions on walls are laden with an abundance of bright coral-red berries, and for ornamental appearance at the Christmas season there does not appear to be any other plant that can come near it. The walls against which the branches are trained are aglow with the ruddy fruit, the thick clusters of which display themselves for a considerable distance. To have this effective hardy plant in the best condition, it should be grown against a sunny wall on a south, south-east, or south-west position. I have seen trees on north and east aspects, or planted alternate with Ivy, or in positions where a good deal of shade fell; but no winter picture they could represent could compare for finish and expression with plants on a south wall, growing by themselves, in the full glare of the light and sun. The quantity and brilliancy of the fruit appear to challenge winter to do its worst, and yet have to admit here is at least one subject superior to its rage, bluster, and destructiveness. R. D.

EARLY SNOWDROPS.—A bunch of beautiful Snowdrops was gathered here to-day. This is the earliest date on which Snowdrops have been gathered at Ardgowan for the last forty years. *Thos. Lunt, Ardgowan Gardens, Greenock, December 18.*

ABUTILON VITIFOLIUM ALBUM.—I am sorry to see that the error as to the colour of this most beautiful and almost hardy shrub, into which the learned editor of the *Botanical Magazine* has unwittingly fallen, has been repeated and perpetuated in the last issue of the *Gardeners' Chronicle* on p. 751. The flowers of this beautiful shrub are there stated to be white, turning to a pale azure-blue as they fade; this they certainly never do, as the white form remains pure white to the last. There are, however, two distinct forms of this shrub, one of them with pale porcelain-blue flowers, which was well and accurately figured on the coloured plate of the *Garden* in its number for March 10, 1883, from a plant which bloomed here for several years in succession. The plant has since died, to my great regret, as this handsome shrub, unfortunately, frequently does without apparent cause soon after producing an abundant crop of its lovely flowers and ripening a quantity of seed. I am informed by my correspondent, Mr. Archer Hind (to whose kindness I owe the possession of the white variety), that the seedlings from it occasionally produce blue flowers; but all that I have raised have invariably, when they bloomed, produced only white ones like their parent. My experience satisfies me that the two forms are quite distinct the one from the other, and never change. *W. E. Gumbleton, Telgrove, Queenstown, Ireland.*

HYBRIDS "SPORTING."—Referring to the note of "P. W." (p. 753), it would certainly seem that the same individual hybrid sometimes varies, now towards one parent, now towards the other. I met with a case in point some years ago, not in an Orchid, but in a Thistle. Solitary plants of the hybrid, *Carduus pratensis* × *palustris*, occur occasionally in Surrey, and would doubtless be much more common were it not that *C. pratensis* is often beginning to fruit when *C. palustris* is only just coming into flower. This hybrid will flower twice in the season; at all events, if the first flower-



FIG. 120.—RICINUS COMMUNIS, VARIETY FROM ZANZIBAR.

students of succeeding generations, comprising as it always of easy access, and at all times, when the does, so much of the history of botany in the present century.

RICINUS, ZANZIBAR VARIETY.

IN this plant, of which, through the kindness of Messrs. Haage & Schmidt, seedsmen, of Erfurt, we are enabled to afford our readers an illustration (fig. 120), is a variety of the common Castor-oil plant, received by them from Eastern Africa. It is said to represent an entirely new and distinct form. The plant, which has enormous leaves, attains to a large size, and surpasses in beauty all hitherto known varieties. The leaves are of a light green colour, 2 to 2½ feet in width, with whitish ribs; it is admirable to plant for a single specimen or a group.

There are several varieties, viz., *maculatus*, with coppery-bronze leaves, which have reddish ribs when mature; *cinerascens*, brownish-purple leaves,

pleasure and advancement of the public could be furthered, the late Earl could be reckoned to afford hearty support. Last year, when the Royal Agricultural Society of England visited Warwick, the Park was placed at their disposal, and all connected therewith were unanimous in saying the site was the best fitted, and the most picturesque that could have been found. On that occasion the Prince of Wales and Duke of York stayed at the Castle. In the Park, or private grounds, the Warwick Cottagers' and Amateurs' Horticultural Society has always found a site for their annual show, and other societies in the neighbourhood have all benefited by his generosity. The giant ancestral trees, especially the majestic Cedars, with their legends and stories, the commemorative trees, of which there were two planted by the Prince Consort and the Queen in 1854, and the young trees raised from their seed from cones he had gathered, were subjects of interest

stems be cut down. The particular plant referred to produced stems, in early June, which bore flowers much resembling those of *C. pratensis*, while the stem-leaves were only slightly decurrent; when visited again in the autumn, the same plant had produced fresh stems, which bore flowers much more towards the other parent, while the stem-leaves were strongly decurrent. This hybrid so evenly divides the characters of its two parents, themselves so distinct from each other, that it may well be recommended to the attention of those who still believe that they have "never seen a natural hybrid." *W. H. Beeby*. [See *Gardeners' Chronicle* in January and February, 1891.]

MYRTLE BERRIES—*Myrtus communis* seems this year to have found its Italy in England (see p. 752), and on November 30 I saw a bush bearing many of its ripe purple berries, covered with a dense blue bloom on an open garden-wall at Straffan, co. Kildare. It is quite a common wall shrub in South Ireland, as also all round the coast, but its fruiting seems to be a far more uncommon occurrence than its flowering in Ireland. *F. W. Burbidge*.

PHYSALIS ALKEKENG FOR DECORATIONS—A useful fruit to use in winter decorations is the *Physalis Alkekengi*, the fruit being enclosed in a large bright, orange-scarlet inflated calyx. When the shoots are gathered before being damaged by wet, they last many months in condition, only losing colour in a small degree. It is very handsome when arranged in tall vases with dried grasses or winter berry-bearing plants. The *Physalis* is very easy to grow in a light warm soil, spreading about in a weedy way. In spite of this, one seldom sees a good vase of it, although it is remarkably bright on an autumn day. A small reserved-bed is worth growing in large gardens, simply to give handfuls of the bright shoots for winter decoration. *V.*

HEATHERBANK, WEYBRIDGE HEATH.—While about at Oakwood taking advantage of the good weather looking to the moving of plants and making alterations, I was struck by how much there is to be found in gardens pretty even in winter, and think that what I saw may perhaps be worth a note. The glories of the autumn tints of the *Liquidambar* tree have departed, some of the deep red leaves of *Vaccinium pennsylvanicum*, and of *Andromeda arborea* still hold on. There are not many flowers out, most are on mounds, for which I have a weakness, thinking that plants show themselves better on them than on level ground, and where precautions have been taken against soil washing down, thrive well. There are some Primroses of many colours, hardy Cyclamens with their prettily marked leaves, some with flowers; one of the prettiest is *Cyclamen cypricum*, which I had from Mr. Max Leichtlin, the flowers though small, are very pretty, it is a free flowerer, and the leaves have rich and distinct markings; *C. macrophyllum* has fine leaves, and stands the winter with us. One plant has held its flowers well in a sheltered situation, notwithstanding some sharp frosts, *Cheiranthus mutabilis*; it was a favourite of the late Rev. Harpur Crewe, who gave it to me—it is well to take cuttings of this, as hard winters kill it. A few *Gentianellas* are out, and one or two *Hepaticas*. *Helleborus maximus* is still very pretty. A fine large form of *Harebell* keeps throwing up flowers; this was given me by a gardening friend, who has made all forms of *Campanula rotundifolia* a study. The Cornish Heaths have a few flowers. *Andromeda floribunda* always well deserves its name, and is loaded with buds. What show well are the many shades of green on some plants, and dark and light brown of faded leaf-stalks and flowers on others. The large bunches of dead flowers of *Hydrangea paniculata grandiflora* look very well in the distance, and *Polygonum compactum* holds its leaves and seeds both of a very pale shade of brown. Many of the glaucous and pale grey-leaved plants are pretty; *Meconopsis nepalensis*, with its hairy leaves studded with rain or dewdrops, one of the prettiest. French Lavender (*Santolina incana*) and *Agrostemmas* are pretty greys. In one of the ponds, *Myriophyllum proserpinacoides*, given me by the late Sir William Bowman, is still green, with its prettily cut leaves. *Diplopappus chrysophyllum* is very cheerful-looking. *Arenaria tetraquetra* has pretty compact foliage. Mossy Saxifrages and Wild Thyme, rich green. The part of the garden where the view is the prettiest is in the middle of the wood looking west. In a recess under the trees, Oaks and Birches with their autumn tints come first; Camellias with rich, glossy green leaves, these are well set with buds; then *Retinospora squarrosa*, *Cryptomeria elegans*, blue

Spruce (small), *Retinospora pisifera aurea*, *Cupressus Lawsoniana lutea*, *C. L. viridis erecta*, blue Cedar, especially pretty; *Veronica Colensoi glauca*, *Hydrangea paniculata grandiflora*, with large bunches of faded flowers; *Andromeda japonica*, covered with red buds; *Polygonum compactum*, with pale brown leaves and seeds; *Kalmia angustifolia variegata*, *Berberis Fortunei*, with its small bright red leaves; *Eulalia gracillima*, still holding green (both this *Eulalia* and *E. zebrina* have flowered well this season); *Veronica verrucosa*, *Skimmia oblata*, a bank of *Rhododendrons*, *R. Wilsonianum*; *Ladums*, with their buds; *Sciadopitys verticillata*, New Zealand Flax, flourishing alongside a great plant of Bog Myrtle,—all these together make a pretty picture. I have no doubt that many other pretty plants might be found, but fear that the note is already too long. *George F. Wilson*. [Received in November.]

BELGIAN ORCHIDS.—In the month of October I had the pleasure of visiting a few places in Belgium, including Laeken, the royal gardens at Brussels. In the Orchids at this fine place were some very good *Cattleya labiata*, *Lælia purpurata*, *Cymbidium eburneum* and *C. Lowii* (with twenty-seven spikes) *Odontoglossum crispum*, *O. grande*, and *O. vexillarium*, all of them looking well. I noticed a new winter garden in course of erection, connected by corridors, which are planted with creepers, &c., and lighted with the electric light. At Mariemont, the residence of M. Waroqué, some very fine pieces of *Cattleya labiata* var. *Waroquana* were remarked with large sheaths, which will form a grand sight when they flower; a plant of *Lælia anceps* was noted which was 3 feet in diameter. *Cypripediums* were very well cultivated here, a plant of *C. Harrisianum* being 4 feet across, and there were many more fine specimens. The *Vandas* were of remarkable goodness, and healthy-looking, and the plants of *Lælia purpurata* were well grown. Of *Odontoglossum crispum* some very fine plants and varieties were noted, besides a number of excellent *Anthurium Scherzerianum*. At the establishment of L. Horticulture Internationale, many *Cattleya labiata* were in flower, and *Vandas*, which were remarkably fine, as were *Lælia purpurata*. The *Odontoglossums* surpassed all that I have previously seen. I remarked that more water, more ventilation was afforded, and not so much heat as is customary in England; but in my opinion the excellence of the Belgian Orchids is due in a great measure to the climate. *M. W.*

EARL'S COURT PRIZE MONEY (see *Gardeners' Chronicle* p. 754)—I should imagine "A Sufferer's" letter will be echoed by many fellow-sufferers. It is, however, rather surprising, and does not say much for the discernment of horticulturists, that so many good names were caught by such a bait, and induced to take part in exhibitions of such a character. After all, enlarge it as you will, call it by whatever name you choose, a tea garden remains a tea-garden, and cannot, by any process of horticultural alchemy, be transformed into anything higher. It will probably occur to the sufferers' minds that "the illness of one of the officials" is scarcely a sufficient reason for non-payment of debts, and that it might perhaps have been better to defer the complimentary dinners and congratulatory speeches until after the unfortunate exhibitors' just claims had been satisfied. We have changed many things in these latter days, and we often appear to forget in reversing the conclusions of our ancestors that a certain amount of wisdom still lingers in such ancient adages as the one about being just before you are generous. *Charles Noble*.

ALLOTMENTS.—Your excellent leader (p. 638) touches a question of the greatest interest to the working-man, who has the one great ambition to occupy and cultivate a bit of ground. Philanthropists may safely support and encourage such a commendable ambition, as the means of providing healthy, innocent, and profitable recreation, both for body and mind, of the indoor workers and others. In suburbs of towns and populous villages, allotments are the only means of enabling men to obtain the opportunity of holding a bit of land, which necessarily in such cases can only be obtained at a considerable distance from their houses. Moreover, these town workers have more time on hand, their hours of daily toil being shorter, and the Saturday half-holiday also; but for the rural districts, where nearly all the labourers are employed in agricultural pursuits, an enlargement of the cottage gardens to the orthodox quarter of an acre would be found far preferable, for the long hours of farm labour, with the distance allotments must be from so many of

their homes, would sorely handicap them. In scores of villages and rural districts, the land belongs to the same landlord as the cottages. Of course, there would be the expense of the fencing, but the rent and rates of the increased area should be added to that of the cottage, and would doubtless be cheerfully paid. If this was considered unfair, which may be so in some cases, a further charge of 5 per cent. or so should be included upon the first outlay. Such an arrangement would have permanent and desirable advantages as regards sanitary matters, for the pig-stye and other out-offices could be relegated further away from the dwelling. Manures, decaying vegetable matter, ashes, slops, &c., could be better dealt with. In more than one remote country district where the population was entirely agricultural, I have seen allotments go out of cultivation, and which, consequently, had to be restored to ordinary farm cultivation. On the other hand, I have seen results the very reverse of this; and at this moment I have in my mind's eye a notable example where a man grows Roses entirely on his allotment, with a very considerable financial success too, for he is increasing his area, and his Roses are of the very best, as demonstrated at local shows. This shrewd man will soon be a formidable rival to the trade. Being such an enthusiast, his plants are good and cheap, produced at the lowest cost, viz., by his own labour. It is to be expected that when the Parish Councils Bill becomes law, the members of the elected Council will consider this matter of amicably enlarging as many of the cottagers' gardens to one quarter of an acre where possible, instead of pushing on allotments *en bloc* wherever they can be got. Having been sometimes called upon to award prizes for the best cultivated allotments, it has been distressing to observe what difficulties have to be overcome by cultivators in situations remote from dwellings in the loss caused by small birds, rooks, and ground-game. A man with a good garden close at home can often spare a few moments to attend to some details which he could not do if the garden were situated half a mile away from his cottage; besides, in field allotments there is seldom any provision for storing water, a matter generally overlooked, until a season like the last makes it plainly necessary. *W. Crump, Madresfield Court*.

THE FOREIGN AND THE HOME GARDENER.—The British gardeners may learn a great deal from the Belgians; yet I think they could hold their own if they would pay a little more attention to the details of cultivation. Those correspondents who have discussed this subject have seemed to me to miss what I consider the most important feature in the Belgian system of Orchid growing, namely, the placing of stems of the tobacco plant under the stages and over the hot-water pipes, so that when damped and the house closed there is a strong smell of nicotine, which keeps their plants perfectly clear of insects without fumigation which, notwithstanding the greatest care, causes injury to the plants more or less; and I have tried nearly every invention under the sun to reduce the risk, and have at last settled down to steaming them with tobacco-juice till something better shall be found. If we could only get tobacco-stems at a reasonable price. The price in Belgium is about 2½d. per lb., and here it is 3s 6d. Is there not some means of inducing the excise to forego the duty on the stems of the plant for horticultural purposes? The lath-shading used in Belgium is likewise an advantage which the Belgian Orchid-grower possesses; still, they cannot grow *Cattleyas* better than we do—and I fancy it would puzzle any one of them to show an *Odontoglossum* that had been in his possession for twenty-five years, as I could do. *W. Stevens, Walton Grange, Stone*.

PRIMULA FORBESII.—I see it stated in a recent number of the *Gardeners' Chronicle*, that *Primula Forbesii* is an annual plant, and I should be glad to learn if this is an established fact, as the seed was sent out as that of a perennial species of somewhat doubtful hardiness. I raised a number of seedlings in March last, which came into flower very quickly, and these have continued in flower throughout the whole summer. Some weeks since the plants were repotted, and all flowering stems and buds removed, and they are still growing vigorously, and show no sign of having fulfilled their mission in life. Elsewhere I see *P. Forbesii* described as a biennial species, which usually flowers in November. Being a comparatively new introduction, probably its term of duration has not yet been accurately ascertained; but I shall be disappointed if this elegant little

Primrose proves to be only an annual, though from its great freedom in flowering it will probably be, in any case, but a short-lived perennial. It would be an advantage if it could be propagated by division, as I have found it impossible to save seed during the past season. *Primula Forbesii* is especially useful for a very shady position in a greenhouse, where little else will thrive, as it succeeds far better under than upon a stage in full exposure to light. *K. L. D.*

GRAPES AT ABBOTSWOOD, FURNESS ABBEY.—At this, the Lancashire seat of Sir James Ramsden, I noted when making a call this season some splendid examples of good culture. One house filled chiefly with the Black Hamburgh, was a fine sight, the crop a heavy one, such as would alarm many growers, the bunches large and the berries also, whilst in colour there was nothing lacking, maturity having been arrived at. In another house were to be seen three varieties which are not often to be met with in company. These were Mrs. Pince's Black Muscat, Muscat Hamburgh, and Madresfield Court, a triplet of black Grapes that cannot be surpassed for flavour and quality. Of the two first-named I have never seen a better crop, or bunches with finer finish, being at the same time weighty; Madresfield Court was also in good keeping with the other two. It is not often that Muscat Hamburgh is now seen so fine as at Furness Abbey. Good bunches are met with occasionally at exhibitions; some fine examples were staged at the International Show in Manchester in 1881, and occasionally since then, but none that I have seen either north or south have come up to those just alluded to. Had Mr. Chesher exhibited them at any of our chief shows this past autumn his position would have been practically ensured. In another house were to be seen excellent Muscats, also Lady Downes, which for late work is not yet beaten. Grapes with but little flavour as compared with the foregoing do not evidently find any favour here, hence it is no surprise that Gros Maroc and Gros Colmar are not grown. One particular point in cultivation should be noted in these vinerias, the borders are all inside ones, as in front of them the lawn comes up close. This is an indication that the requirements of the Vines are thoroughly understood and attended to by Mr. Chesher, who has had this charge for about twenty years or so, which nearly approaches to the age of the Vines. The crops he assured me were not anything beyond the usual average, but such an average can only be arrived at by skilful culture. Peach-houses in the same range were filled with fine-bearing trees, from which the fruit had been taken, but the growth was all that could be desired. This range it should be stated faces towards the west, hence it meets the full force of the westerly gales which are more dreaded here than are keen easterly winds, which to many of us are a time of anxiety, if nothing more. *H.*

BULB, SEED, AND PLANT TRADE.—Since my letter appeared in your issue of the 2nd inst., I have received from various parts of the country letters from those employed in the trade expressing their approval. From this great mass of correspondence, it is clear that the nearer we approach London the worse is the existing state of affairs, the climax being reached in some of the large concerns in the City, where the only inducement to accept the too often miserable conditions of employment seems to be the fact that situations in the provinces are more easily obtainable [?]. Provincial readers of this will get an idea of what to expect when applying for employment in or near London by the following extract from the letter of a correspondent in Hull referring to the case quoted in my letter. He says: "I had previously the intention to apply for the situation on condition that it included board and lodging," and then goes on to say: "About three years ago I applied to a firm near Bedford for a situation as Junior Assistant, after having served nearly six years to the trade. They consented to offer me as much salary as I could afford to accept under 18s. per week, meaning, I expect, about 15s. Now how was I to live on that and appear respectable, and pay 20s. in the bargain to the railway company to take me to the scene of action?" This is by no means an exceptional case, for if desired I will furnish any quantity of instances which will put this one entirely in the shade. It is impossible for me to reply to all the correspondence I have received since my letter appeared; but considering that a great many express their willingness to devote some of their time to help with the formation of an association for those employed in the seed and bulb trade, I may, in reply to those correspondents, say

that it will give me great pleasure to do my best to forward such a movement, which evidently has been for some time contemplated by those employed in the trade. I would suggest that an association be formed representing the whole of the Seed Trade of the United Kingdom; that an annual conference be held in different localities, and to which delegates would be sent from all the principal centres in order to bring forward and discuss any grievances relating either to the districts which they may represent, or throughout the trade in general, with a view to secure reasonable consideration of any matters connected with the trade, which might be submitted to them by a committee selected at the annual conference, and so bring about a better understanding all round. I would therefore suggest that all those desirous of forming an association to protect the interests of those employed in the seed and bulb trade, will send me their names and address, and at the same time state if they would be willing to take an active part in the formation of a local committee for their district. *Thos. D. Smith, 5, Dingle Road, Birkenhead.*

VERBASCUM WIEDEMANNIANUM.

THE above novelty is a fine flowering plant from Northern Kurdistan, growing to a height of 2½ feet, much branched, and furnished very abundantly with indigo-blue changing to purplish-lilac blossoms, of 1 to 1½ inches in diameter. Its specific name commemorates a botanical traveller long since dead. It



FIG. 121.—*VERBASCUM WIEDEMANNIANUM*: FLOWERS BLUE.

is another of Messrs. Haage & Schmidt's new plants for 1894, and is likely to be a valuable addition to hardy border perennials.

Obituary.

FRANCIS PARKMAN.—In the loss of this eminent historian perhaps it may not be generally known how largely horticulture also has been indebted to his enthusiastic, persevering, and intelligent investigations, which have left a marked impress on its progressive advancement.

His attention was first drawn to such pursuits by the hope of benefiting his health, and his active mind was not content to tread the beaten paths; he early began the extensive cultivation of herbaceous plants, mostly from seeds, and his success with *Delphiniums* and *Phlox* was very marked, especially with the first named, of which his collection of seedlings was perhaps the finest in this country.

Early in his work a friend placed in his charge a collection of Evergreens, Lilies, &c., sent over by Dr. Hall from Japan, and this was probably the foundation of his fine collection of Lilies, in the hybridisation of which he achieved such fine results. "*Lilium Parkmanii*" is a notable example, and was afterwards sold by Mr. Parkman to Anthony Waterer of England. His assortment of rare ornamental shrubs was unsurpassed; Roses were also one of his

special studies, his collection being one of the most noted in the vicinity of Boston. He published a treatise on the Rose which was for many years the best American work on the subject.

In 1862 he connected himself in commercial horticulture, and for many years his collection of shrubs and plants were in active demand by growers; in July, 1862, he made the first public exhibition of *Lilium auratum* before the Mass. Horticultural Society; Messrs. Veitch & Sons had made a similar exhibit in England only a week earlier.

Mr. Parkman was president of the Massachusetts Horticultural Society from 1875 to 1877, and during many years was one of the most prominent exhibitors at its weekly shows. *American Florist.*



[By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending December 16.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 1, 1893.	Below 42°, difference from Mean since January 1, 1893.					
0	2 +	6	29	+ 500	— 15	9 +	241	55.6	2	23
1	2 +	6	35	+ 297	+ 21	0 aver	191	26.4	13	31
2	3 +	13	31	+ 433	— 38	0 aver	166	20.4	17	36
3	4 +	20	35	+ 515	— 12	0 aver	165	20.4	16	42
4	4 +	18	36	+ 652	— 12	5 +	156	19.5	17	40
5	4 +	33	13	+ 565	— 35	5 +	155	22.6	11	43
6	1 +	10	23	+ 473	— 17	3 +	194	39.5	16	36
7	2 +	17	32	+ 752	— 83	4 +	181	29.8	13	35
8	3 +	26	13	+ 688	— 45	7 +	164	31.8	24	45
9	0 aver	9	29	+ 541	— 74	2 +	206	32.6	26	32
10	1 +	34	17	+ 579	— 68	3 +	178	29.9	27	35
*	3 +	41	0	+ 825	— 56	4 +	177	27.2	35	53

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather for the week ending December 16, is furnished from the Meteorological Office:—

"The weather was again very unsettled, squally, and rainy during the greater part of the week, but towards its close some improvement took place, especially in the south and east.

"The temperature just equalled the mean in 'Ireland, N.' but in all other parts of the United Kingdom it was above it, the excess over southern, central, and eastern England being 4°. The highest of the maxima were registered either on the 15th or 16th, and ranged from 58° in 'England, E.' 'England, N.W.' and the Channel Islands, to 54° in 'Scotland, N.' The lowest of the minima were recorded on the 12th, when they ranged from 25° in 'Scotland, N.' and 'Scotland, E.' to 29° in 'England, E.' and to 32° in the Channel Islands.

"The rainfall was considerably more than the mean over the country as a whole, but over the eastern and north-eastern parts of Great Britain there was no more than the normal amount.

"The Bright Sunshine was rather more prevalent

generally than it was during the preceding week, and exceeded the mean in all the 'grazing' districts, as well as in 'England, N.E.' and the Midland Counties. The percentage of the possible duration ranged from 35 in the Channel Islands, and from 27 in 'Ireland, S.' to 11 in 'England, S.' and to only 2 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, December 21.

We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day. ED.]

PRICES may vary much this week, on account of Christmas and Church decoration.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Arum, per doz. bl.	4 0-8 0	Narciss, French, white,	12 bunches ... 2 0-3 0
Bouvardias, per bun.	0 6-1 0	— yellow, 12 bun.	1 6-2 6
Camellias, doz. blms.	1 0-2 6	Orchids:—	
Carnations, 12 blms.	1 6-2 6	Cattleya, 12 blms.	6 0-12 0
Chrysanthemums, 12		Odontoglossum	
bunches ...	2 0-6 0	— orispum, 12 blms.	2 0-6 0
— doz. blooms ...	0 6-3 0	Pelargoniums, scar-	
Eucharis, per dozen	4 0-6 0	— let, p. 12 bun.	4 0-9 0
Gardenia, per dozen	3 0-6 0	— 12 sprays ...	0 6-1 0
Hyacinth, Roman,		Roses, French, p. doz.	0 9-1 6
12 sprays ...	0 9-1 0	— p. box of 100	2 0-3 0
Lilac (Fr.), per bun.	4 0-6 0	— Tea, per dozen	0 6-2 0
Lilium Harrisii, doz.	6 0-12 0	— coloured, dozen	2 0-4 0
Lily of the Valley,		— yellow (Maré-	
per dozen sprays...	1 6-3 0	chals), per doz.	3 0-6 0
Maiden Hair Fern,		— red, per dozen...	1 0-1 6
12 bunches ...	4 0-6 0	Tuberose, 12 blms.	0 4-0 6
Marguerite, 12 bun.	1 6-3 0	Violets, Parmé, p. bn.	3 0-5 0
Mignonette, 12 bun.	2 0-4 0	— Czar, per bun.	2 0-3 0
Primula, dble. p. bun.	0 6-1 0	— English, per doz.	1 6-2 0

ORCHID-BLOOM in variety.

CHRYSANTHEMUM-BLOOM very plentiful, price is low in consequence.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Adiantum, per doz.	6 0-12 0	Ficus elastica, each	1 6-7 6
Aspidistra, per doz.	15 0-20 0	Foliage plants, doz.	12 0-42 0
— specimen, each	7 6-30 0	Marguerites, per doz.	6 0-12 0
Chrysanthemums, doz.	6 0-9 0	Mignonette, doz. pots	6 0-9 0
— large plants, each	1 6-2 0	Palm, various, each	2 0-10 0
Cyperus, per dozen	4 0-10 0	— specimens, each	10 6-84 0
Dracæna, each ...	1 0-5 0	Pelargonium, scar-	
Erica, various, p. dz.	9 0-24 0	— let, per dozen ...	6 0-9 0
Evergreen Shrubs, in		Poinsettias, per doz.	12 0-15 0
var., per dozen ...	6 0-24 0	Primulas, per dozen	4 0-6 0
Ferns, various, doz.	4 0-9 0	Solanums, per doz...	9 0-12 0
— small, per 100	4 0-6 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d.	s. d.	s. d.	s. d.
Apples, per bush.	1 6-7 0	Pine-apples, St. Mi-	
Cobs, per 100 lb.	45 0-...	chael, each ...	2 6-7 6
Grapes, per lb.	1 0-3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

s. d.	s. d.	s. d.	s. d.
Beans, French, lb.	0 4-...	Lettuces, per doz.	1 3-2 0
Beet, red, per dozen	1 0-2 0	Mushrooms, punnet	1 3-2 0
Carrots, per bunch...	0 4-0 6	Mustard and Cress,	
Cauliflowers, each	0 2-0 4	— punnet ...	0 2-...
Celery, bundle ...	1 0-1 3	Parsley, per bunch...	0 2-0 3
Cucumbers, each ...	1 0-...	Shallots, per lb.	0 3-...
Endive, per dozen ...	1 3-1 6	Tomatoes, per lb.	1 0-...
Herbs, per bunch ...	0 3-1 0	Turnips, per bunch...	0 4-0 6
Leeks, per bunch ...	0 3-...		

POTATOS.

The mild open weather with abundance of good and cheap vegetables, has a very depressing influence on our Potato market. Stocks continue to increase, and prices for most samples continue to fall. J. B. Thomas.

FRUITS AND VEGETABLES.

SPITALFIELDS: December 19.—Quotations:—Savoy, 2s. 6d. to 4s. 6d.; Cauliflowers, 4s. to 6s. per tally; Turnips, 1s. to 1s. 6d.; Carrots, 2s. to 3s.; Parsley, 1s. to 1s. 9d. per dozen bunches; Onions, 5s. 6d. to 6s. 6d. per bag; English do., 6s. 6d. to 7s. per cwt.; Apples, 1s. 3d. to 8s. per bushel.

STRATFORD: Dec. 19.—The supply to this market during the past week has been excellent, and a good trade was done at the undermentioned quotations:—Cabbages, 1s. 6d. to 2s. 6d. per tally; Savoy, 1s. 9d. to 5s. do.; Greens, 1s. to 1s. 6d. per bag; do. 1s. 3d. to 2s. 6d. per dozen bunches; Cauliflowers, 9d. to 1s. 6d. per dozen; do., 3s. 6d. to 7s. per tally; Brussels Sprouts, 1s. 3d. to 1s. 9d. per half-sieve; do., 2s. 3d. to 2s. 9d. per bushel; Celery, 6d. to 1s. per roll; Horseradish, 1s. 6d. to 1s. 9d. per bundle; Turnips, 1s. 3d. to 1s. 6d.

per dozen bunches; do., 20s. to 40s. per ton; Carrots, household, 40s. to 50s. do.; do., cattle-feeding, 28s. to 36s. do.; Parsnips, 9d. to 1s. per score; Mangels, 22s. to 26s. per ton; Swedes, 18s. to 25s. do.; Onions, English, 150s. to 170s. do. do., Dutch, 6s. to 6s. 6d. per bag; Apples, English, 2s. to 8s. per bushel.

FARRINGTON: Dec. 21.—Quotations: Celery, 9s. to 10s. per dozen; Sprouts, 2s. 6d. per bushel; Carrots, 1s. 9d. to 2s. per dozen bunches; Turnips, 3s. to 3s. 6d. do.; Horseradish, 1s. 6d. per bundle; Onions, English, 8s. to 8s. 6d. per cwt.; Parsnips, 3s. per cwt.; Case Onions, 7s.; Walnuts, 9s. per bag; Tomatos, 8s. per case; English do., 7d. per lb.; Pears, 2s. 6d. per basket of 15; Apples, cooking, 4s. 6d. to 5s. 6d. per bushel; do., Blenheim, 7s. 6d. do.; Grapes, English, 1s. 3d. to 1s. 6d. per lb.; Almeida, 10s. 6d. to 12s. 6d. per barrel; Oranges, 11s. per case.

POTATOS.

BOROUGH AND SPITALFIELDS: December 19.—Quotations ranged between 35s. and 100s. per ton.

STRATFORD: Dec. 19.—Quotations:—Magnums, dark-land, 35s. to 45s.; do., light-land, 45s. to 65s.; Bruces, 45s. to 70s.; Scotch Magnums, 60s. to 80s. per ton.

FARRINGTON: Dec. 21.—Quotations:—Main Crop, 75s. to 80s.; Sutton's Abundance, 60s. to 70s.; Bruces, 55s. to 65s. Magnums, 45s. to 50s.; Imperators, 40s. to 50s. per ton.

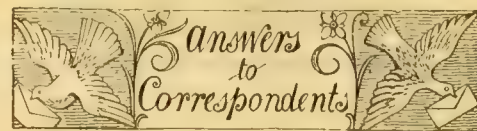
LONDON AVERAGES: Dec. 20.—Hebrons, 80s. to 100s.; Regents, 60s. to 80s.; Dunbars, 70s. to 90s.; Snowdrops, 70s. to 80s.; Blacklands, 45s. to 55s.; Magnums, 40s. to 55s.; Main Crop, 60s. to 80s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 16, and for the corresponding period in last year:—1893: Wheat, 28s. 9d.; Barley, 28s. 10d.; Oats, 18s. 5d. 1892: Wheat, 26s. 4d.; Barley, 24s. 6d.; Oats, 16s. 10d.

HAY.

Averages.—The following are the averages of the prices at the principal metropolitan markets during the past week:—Clover, prime, 140s. to 155s.; new, do., 125s. to 145s.; inferior, do., 100s. to 120s.; Hay, best, 145s. to 170s.; inferior, do., 90s. to 100s.; new Mixture, 115s. to 130s.; and Straw, 35s. to 55s. per load.



BOOKS: *A Young Gardener. The Tomato: its Culture and Uses.* By W. Iggliden. Published at the office of the *Journal of Horticulture*, 171, Fleet Street, London.—*A. L. M. The Gentlewoman's Book of Gardening*, published by Henry & Co., Bouverie Street, London.—*Rogator*. There is a *Manual of Botanic Terms*, by Dr. M. C. Cooke, which may be had for a small cost if it is still in print; or you may profitably consult Holmes' *Botanical Note book* (Christy & Co.).

CATS IN GARDENS: J. B. G. Nothing short of putting an unclimbable fence round the garden will keep them out.

CHRYSANTHEMUM, LATE WHITE-FLOWERED: J. B. Miss Marechaux, new; or Ethel, an old variety. The first is to be preferred.

DISEASED WHEAT FROM THE CAPE: *Triticum*. The fungus is *Urocystis occulta*, one of the *Ustilagineæ*, or smuts, which in Europe most commonly attacks Rye, but sometimes other Cereals and Grasses. M. C. C.

HEATING OF TOMATO-HOUSE 10 X 7 X 125 FEET: *A Young Gardener*. If the house be a lean-to, three rows of 4-inch hot-water pipes would suffice, and if it be a span-roofed structure, employ four rows, i.e., two on each side, with valves so placed that the pipes on one side may be used alone when it may seem desirable. If you are resident in a cold northern locality, rather more piping may be needed than we have stated.

INSECT ON PEAR-SHOOT: A. G. L. The insect is the Pear-tree scale, which, unless it be destroyed, will seriously affect the fruitfulness of the tree. It may be got rid of by washing or painting the branches with petroleum emulsion, which may be bought at the florist's; or it may be made in the following manner:—Soft-soap, 1 quart; or hard-soap, $\frac{1}{2}$ lb.; 2 quarts hot-water, and 1 pint petroleum. Stir till it is thoroughly mixed, then add hot-water till the petroleum forms but one-fifteenth of the whole. For safety's sake, it should be stirred while being used.

MYRTLE: F. S. See p. 752.

NAMES OF FRUITS: E. H. Apple Alfriston.—December, 1, King of the Pippins; 2, Fearn's Pippin; 3, 3, Sturmer Pippin.—F. R. Colonel Vaughan.—T. S. Not recognised.—M. Hartwell, Green Apple Grenadier, White Apple Lord Derby.

NAMES OF PLANTS: D. Wallace. *Jasminum Sambac*.—W. M. A species of *Diosma*; send when in flower.—Calla. 1, *Epidendrum cochleatum*; 2, *Celia bella*; 3, *Epidendrum ciliare*; 4, *Calanthe* X *Veitchii*: the other two are *Calanthe vestita*, yellow-eye, and *C. vestita*, red-eye.—J. & A. B. *Cymbidium giganteum*.—G. D. *Trichopilia tortilis*; 2, *Maxillaria picta*; 3, *Cypripedium insigne*. W. H. *Lastrea Sieboldi*, *Oncidium lanceans*: the other not *Cymbidium Lowianum*, but a good form of *C. giganteum*.—W. H. B. *Masdevallia caloptera*.

PASSIFLORA CÆRULEA VAR. CONSTANCE ELLIOTT. T. Y. D. We cannot account for your plant, which is on a south wall, not fruiting last season, and should have thought that the unusual warmth would have favoured fruiting. Was the soil destitute of moisture, and thus have caused the blooms to fall ere they were fertilised?

THE CULTIVATION OF HORSERADISH: *Radish*. We may refer you to our Calendar for the Kitchen Garden in our issue for the 2nd of the present month.

THE SO-CALLED YORK ROSE: S. Y. This is probably the double-flowered form of the white Rose of our hedgerows, *Rosa arvensis*. The white Rose made use of at the wedding of the Duke of York was not of that variety, but a white Provence with a calyx not much unlike that of a moss Rose.

COMMUNICATIONS RECEIVED.—M. T.—E. B.—R. W. N.—D. T. F.—L. L.—Mrs. E. Drummond—A. Comber.—E. B.—C. N.—Dr. Dammer, Berlin—E. R.—J. R.—T. B.—A. P.—J. A.—N. L.—Prof. O., Amsterdam.—F. S.—H. W.—C. W.—B.—R. W. N.—E. T. R., Chicago.—J. Halliday & Sons.—W. G. S.—J. Ritchie.—E. Webb & Sons.—T. M.—J. F.—S., The Woods.—J. C.—H. W. W.—R. D.—F. L.—A. P.—M. T.—J. D.—N. X. B.—J. L.—A. C.—A. P.—G. S.—G. G.—T. B.—Q. R.—J. P.—W. A. C.

PHOTOGRAPHS, DRAWINGS, &c. RECEIVED WITH THANKS.—M. T.—E. B.—E. S.—T. H., Japan.—W. R. G., Melbourne.

DIED.—At 24, Charles Street, Queen Square, W. C. DRUMMOND, in his 77th year. For fifty years proprietor of the Bath and Park Lane Nurseries, Weston Road, Bath.

CONTINUED INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

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As by us at Imperial Institute Gardens.

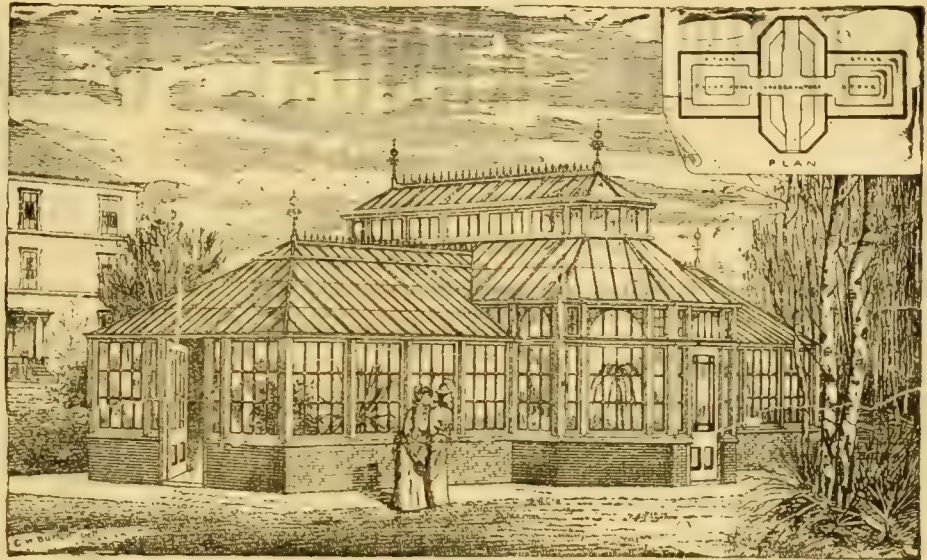
VASES,
FOUNTAINS,
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IN STONE-LIKE AND RED
TERRA COTTA.
Durability Guaranteed.

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Horticultural Work of all descriptions, Ironmongery, &c.
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4d. per bushel; 100 for 30s.; truck, loose (about 2 tons), 50s.
Bags, 4d. each.

SPECIALLY SELECTED ORCHID PEAT.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 5s. per sack; 5 sacks, 22s.; sacks, 4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

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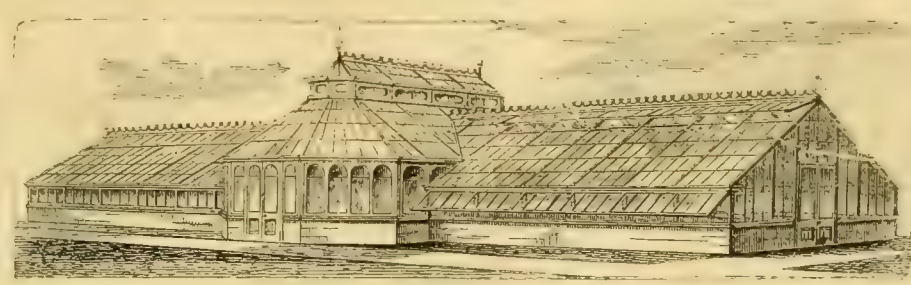
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Being the end of the Season, I am again induced to offer my Stock on hand at ridiculously Low Prices, to make room for my
SPRING STOCK, for SIX WEEKS ONLY, COMMENCING DEC. 4. LAST DAY of SALE, SATURDAY, JAN. 13, 1894.

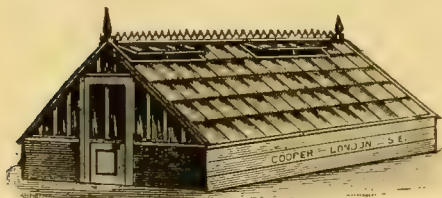
CONDITIONS OF SALE.

Goods are offered subject to being on hand on receipt of reply. Cash to accompany all orders, and prices to be strictly *nett*. All orders will be executed in rotation, and carefully packed and put on rail, except those otherwise stated.

P.O.O. payable at 794, Old Kent Road; Cheques crossed "L. and S. W. Bank."

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THE AMATEUR FORCING HOUSE. TENANT'S FIXTURE (Span-roof).



These houses are offered at an exceedingly low rate, and should be readily approved by both amateur and professional gardeners, as brickwork, which is very expensive to a small house, is entirely dispensed with.

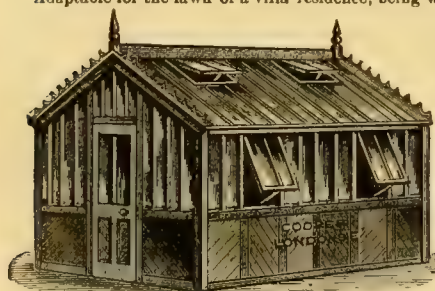
The utility of such a house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request but almost hitherto unknown.

Specification.—Framework substantially constructed of red deal; the whole of sides, and 2 ft. 6 in. of ends, boarded with well-seasoned tongued and grooved matchboards. Half-glass door, complete with rim lock and brass fittings, in one end; glass 16 oz. throughout, English cut. Ventilators supplied according to size of house, and stays necessary for opening same; stages for plants each side of house, all woodwork painted one coat of good oil paint, and the whole structure securely packed and placed on rail.

Lot.	Length.	Width.	Height.	Usual Price.	Sale Price.
				Packed on rail.	Packed on rail.
1 to 7	7 ft.	5 ft.	7 ft.	£2 10 0	£2 0 0
8 to 10	8 ft.	5 ft.	7 ft.	3 0 0	2 5 0
11 to 12	9 ft.	6 ft.	7 ft. 3 in.	3 10 0	2 10 0
13 to 22	10 ft.	7 ft.	7 ft. 6 in.	4 10 0	3 10 0
23 to 29	12 ft.	8 ft.	8 ft.	5 10 0	3 15 0
30 to 41	15 ft.	10 ft.	8 ft. 6 in.	7 15 0	5 10 0
42 to 48	20 ft.	10 ft.	9 ft.	10 15 0	7 10 0
49 to 51	25 ft.	10 ft.	9 ft.	15 5 0	10 0 0
52 to 54	50 ft.	10 ft.	9 ft.	27 0 0	20 0 0
55 to 56	100 ft.	10 ft.	9 ft.	45 0 0	25 0 0

SPAN-ROOF VILLA CONSERVATORIES.

Adaptable for the lawn of a villa residence, being well and substantially-built, constructed of the best materials, and artistically finished, with diagonal panels and barge-boards. The framework is composed of 2 in. by 3 1/2 in. red deal, the lower part doubly-lined with tongued and grooved matchboards, and the roof properly fitted with sashes, which facilitates fixing or removing of same without disturbing glass.



The houses are fitted with a half-glass door, complete with rim lock, brass fittings and key, and is supplied with lattice staging for each side, footpath the entire length; gutters, down pipes, suitable ventilators, and necessary ironwork for opening same.

All woodwork painted two coats of good oil paint, glass cut to sizes, and all parts securely packed on rail. Prices:—

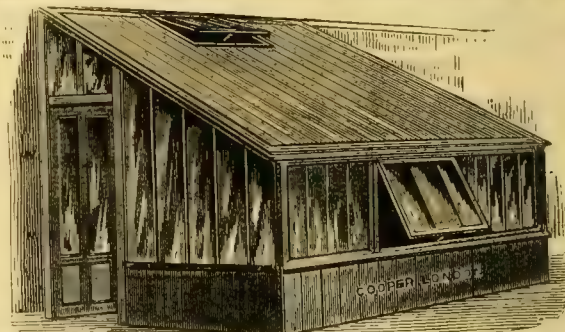
Lot.	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
					Packed on rail.	Packed on rail.
343 to 351	9 ft.	6 ft.	7 ft.	4 ft. 6 in.	£7 10 0	£5 10 0
352 to 358	12 ft.	8 ft.	8 ft.	5 ft. 6 in.	10 0 0	7 0 0
359 to 363	15 ft.	8 ft.	8 ft. 6 in.	5 ft. 6 in.	12 0 0	8 10 0
364 to 371	20 ft.	9 ft.	9 ft.	6 ft.	16 10 0	12 0 0
372 to 374	25 ft.	9 ft.	9 ft.	6 ft.	21 0 0	15 0 0

21 oz. for Roof 5 per cent. extra.

"AMATEUR" SPAN-ROOF AND LEAN-TO GREENHOUSES. Tenant's Fixtures.

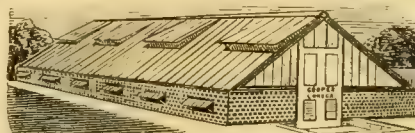
Made especially for Amateurs at a nominal figure, thereby coming within reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectable by any handy-man or gardener in a few hours. Framework is substantially constructed of red deal, the lower part being filled in with well-seasoned tongued and grooved matchboards. The house is fitted with door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and stages for each side, and good 16 oz. glass throughout. All parts securely packed, and put on rail.

SPAN-ROOF.



LEAN-TO.

Lot	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
					Packed on rail.	Packed on rail.
57 to 71	Span-roof	7 ft.	5 ft.	7 ft.	£2 10 0	£2 5 0
72 to 76	"	8 ft.	5 ft.	7 ft.	3 10 0	2 15 0
77 to 108	"	9 ft.	5 ft.	7 ft. 3 in.	4 0 0	3 0 0
109 to 121	"	10 ft.	5 ft.	7 ft. 6 in.	5 0 0	4 0 0
122 to 149	"	12 ft.	5 ft.	8 ft.	6 0 0	4 10 0
150 to 170	"	15 ft.	10 ft.	8 ft. 6 in.	8 10 0	6 10 0
171 to 176	"	20 ft.	10 ft.	9 ft.	12 0 0	9 0 0
177 to 184	"	25 ft.	10 ft.	9 ft.	17 0 0	12 0 0
185 to 189	"	50 ft.	10 ft.	9 ft.	30 0 0	23 0 0
190 to 197	"	100 ft.	10 ft.	9 ft.	50 0 0	33 0 0
198 to 201	"	30 ft.	10 ft.	8 ft. 6 in.	20 0 0	14 0 0
202 to 211	Lean-to	7 ft.	5 ft.	7 ft.	2 8 0	2 0 0
212 to 221	"	8 ft.	5 ft.	7 ft. 3 in.	3 10 0	2 15 0
222 to 225	"	12 ft.	8 ft.	8 ft.	5 10 0	4 0 0
226 to 228	"	15 ft.	10 ft.	8 ft. 6 in.	8 0 0	5 15 0



SPAN-ROOF FORCING HOUSE.

The illustration shown will convince all practical minds of the importance and utility of this class of house for Gentlemen, Nurserymen, Market Gardeners, and all those who require a cheap strong House for Forcing, or growing Cucumbers, Tomatoes, Melons, &c.

Specification.—Built for brickwork, 3 feet high, of thoroughly well-seasoned red deal; roof ventilation according to size; door at one end; all 21-oz. glass; painted one coat.

Carefully Packed on Rail.

Lot	Usual Price.	Sale Price.
	Packed on rail.	Packed on rail.
229 to 235	20 by 9	£9 0 0
236 to 242	20 by 12	11 0 0
243 to 246	20 by 14	14 10 0
247 to 250	40 by 9	17 0 0
251 to 255	40 by 12	21 0 0
256 to 257	40 by 14	25 0 0
258 to 260	100 by 9	40 0 0
261 to 267	100 by 12	48 0 0
268 to 281	100 by 14	55 0 0
282 to 342	Ventilating boxes for Side Walls	4 9

For full Specification of Sale, see three-page advertisement in the *Gardeners' Chronicle* of December 2.

SALE CATALOGUE POST-FREE.

WILLIAM COOPER, 747 TO 755, OLD KENT ROAD LONDON, S.E.

INCREASED CIRCULATION.

NOTICE TO ADVERTISERS.

THE
GARDENERS' CHRONICLE

FOR

JANUARY 6, 1894,

WILL

CONTAIN AS A SUPPLEMENT

A

SHEET ALMANAC.

*As a large Extra Circulation of this Number is guaranteed, it will be
a very valuable medium for Advertisements.*



ADVERTISERS DESIROUS OF SECURING SPACE IN THIS NUMBER



are requested to communicate with "The Publisher" not later than
WEDNESDAY, January 3, 1894.

THE PUBLISHER, 41, WELLINGTON ST., STRAND, LONDON, W.C.

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS.—The Registered Address for Foreign and Inland Telegrams is "Gardchron, London."

ADVERTISEMENTS.

SCALE OF CHARGES FOR ADVERTISING.

HEAD LINE CHARGED AS TWO.

4 Lines .. £0 3 0	15 Lines .. £0 8 6
5 " .. 0 3 6	16 " .. 0 9 0
6 " .. 0 4 0	17 " .. 0 9 6
7 " .. 0 4 6	18 " .. 0 10 0
8 " .. 0 5 0	19 " .. 0 10 6
9 " .. 0 5 6	20 " .. 0 11 0
10 " .. 0 6 0	21 " .. 0 11 6
11 " .. 0 6 6	22 " .. 0 12 0
12 " .. 0 7 0	23 " .. 0 12 6
13 " .. 0 7 6	24 " .. 0 13 0
14 " .. 0 8 0	25 " .. 0 13 6

AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20s.

If set across three Columns the lowest charge will be 30s.
Page, 28; Half Page, £1 10s.; Column, £3.

GARDENERS AND OTHERS WANTING SITUATIONS.

26 words, including name and address, 1s. 6d., and 6d. for every additional line (about nine words) or part of a line. These Advertisements must be prepaid. This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

Births, Deaths, and Marriages, 5s. each insertion.

NOTICE TO ADVERTISERS.—In many instances Remittances in Payment of Repeat Advertisements are received without name, address, or anything beyond the postmark on envelope by which to identify the sender; this in all cases causes a very great deal of trouble, and frequently the sender cannot be identified at all.

Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisements which they wish repeated.

POSITION.—Advertisers are specially requested to note, that under no circumstances whatever can any particular position be guaranteed for advertisements occupying less space than an entire column.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to A. G. MARTIN, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements,
41, WELLINGTON STREET, STRAND, W.C.

SUBSCRIPTIONS.

All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d.; 3 months, 3s. 9d. All Foreign Subscriptions, including Postage, 17s. 6d. for 12 months. Post-office Orders to be made payable at the Post-office, 42, Drury Lane, W.C., to A. G. MARTIN.

Subscribers who experience any difficulty in obtaining their copies regularly, are particularly requested to communicate with the Publisher (in cases of delay in the delivery by post, the cover should be forwarded with complaint).

ESTATE SALES.

The Best County Medium for Advertising Sales of Estates is

THE "WORCESTER HERALD,"

ESTABLISHED 1794,

The Leading County Paper. Extensive circulation among the upper and middle classes in Worcestershire and adjoining counties. Advertisers would do well to forward for reference and distribution plans and particulars of Estates, Catalogues of Machinery, Furniture, Books, and other property advertised in the columns of the "HERALD."

Sales of Stock and Agricultural Effects.

The "WORCESTER HERALD" is the most effective organ for giving publicity to announcements of this class. It is the leading Agricultural Paper in the County, and Circulates most extensively among Agriculturists in and around Worcestershire.

Farms to Let.

Land Agents, Estate Managers, and all having Farms to Let, would do well to advertise in the "WORCESTER HERALD," the leading County Paper. Specially adapted for bringing such notices before Tenant Farmers. Large circulation. Moderate charge.

Situations Vacant and Wanted.

For producing results the "WORCESTER HERALD" is recognised as a specially good medium. Cheap Rates.

Apply for Terms.

SPECIMEN FREE. Price 2d.

Published Friday for Saturday.

OFFICES:—72, HIGH STREET, WORCESTER.

BOILING WATER OR MILK.

E P P S ' S
GRATEFUL—COMFORTING.
C O C O A
BREAKFAST—SUPPER.

DROVER'S BOOK on the **CHRYSANTHEMUM** should now be read by intending Growers. Some of the Principal Prizes taken this Season from the Information given. Letters from Growers can be seen. Post-free, 1s. 2d. Catalogues, 3d. Nurseries, Fareham.

TECHNICAL HORTICULTURE.

COUNTY COUNCIL LECTURES.

PAXTON'S COTTAGERS' CALENDAR OF GARDEN OPERATIONS.

Will be useful to Lecturers and Students in the above subject.

Price 3d.; post-free, 3½d.

41, WELLINGTON STREET, STRAND, W.C.

WORKS OF AUTHORITY ON BOTANY.

LINDLEY'S DESCRIPTIVE BOTANY. For Self-Instruction and the Use of Schools. Price 1s., sewed.

LINDLEY'S MEDICAL AND ECONOMICAL BOTANY. With numerous Illustrations. 8vo, cloth, price 5s.

SIR JOSEPH PAXTON'S BOTANICAL DICTIONARY. Comprising the Names, History, and Culture of all Plants known in Britain, together with a full Explanation of Technical Terms. Medium 8vo, cloth, price 18s.

LINDLEY'S ELEMENTS OF BOTANY. With Illustrations. 8vo, cloth, price 9s.

BOTANY FOR BEGINNERS. An Introduction to the Study of Plants. By MAXWELL T. MASTERS, M.D., F.R.S., late Lecturer on Botany at St. George's Hospital. With upwards of 100 Illustrations. Price 3s. 6d.

London: BRADBURY, AGNEW, & CO. (Limited), Bouverie Street, E.C.

HORTICULTURAL BUILDER.

Every description of GREENHOUSES, LIGHTS, &c.

PIT LIGHTS.

Best quality and workmanship. 2 inches thick, 6 ft. by 4 ft., iron bar across, and very strong, 4s. 6d. each, 50s. doz., £10 for 50 lights, free on rail in London. Cash or reference with order.

CUCUMBER HOUSES.

Timber sufficient to build 100 feet by 12 feet house, Roof Ventilators, Door, &c. Put on rail in London. Price, £9 10s. Send for detailed specification, to—

W. DUNCAN TUCKER, HORTICULTURAL WORKS, TOTTENHAM.

 Send for Illustrated Catalogue, just issued.

THE GARDENERS' CHRONICLE FORM OF SUBSCRIPTION.

FROM


TO

THE PUBLISHER,

41, Wellington Street, Strand,
LONDON, W.C.

1893.

Please send me "THE GARDENERS' CHRONICLE" for _____ Months,
commencing _____, for which I enclose P.O.O. _____.

Please Note that all Copies sent Direct from this Office must be paid for in advance. 

THE UNITED KINGDOM:—12 Months, 15s.; 6 Months, 7s. 6d.; 3 Months, 3s. 9d.; Post-free.

ALL FOREIGN SUBSCRIPTIONS, including Postage, 17s. 6d. for 12 Months.

Receipts for less than six months' subscription will not be sent unless specially asked for.

P.O.O. to be made payable at the Post Office,
No. 42, DRURY LANE, London, to A. G. MARTIN.
Cheques should be crossed "DRUMMOND."

G. C.
Dec. 23, 1893.

RICHARDS' NOTED PEAT.

(Trade supplied on best terms).

Specialy selected and prepared for Orchids and all other plants. Also Loam, Sand, Artificial Manures, Insecticides, Best Russian Mats, Sphagnum Moss, and Garden Sundries of every description. Special quotations given for any goods sent carriage paid.

G. H. RICHARDS, Old Shot Tower Wharf, Lambeth, London, S.E.; Peat Grounds and Depôts, Ringwood and Wareham. Address all letters to London Wharf.

ORCHID PEAT.

PREPARED, ready for use, all fibre, 10s. persack; 5 for 47s. 6d. SELECTED, in blocks, very fibrous, 8s. per sack; 5 for 37s. 6d. SECOND QUALITY, 5s. per sack; 5 for 22s. 6d. BROWN FIBROUS PEAT, for Azaleas, Rhododendrons, and Ferns, 4s. per sack, 5 for 18s.; and 3s. per sack, 5 for 12s. 6d. PEAT-MOULD, LEAF-MOULD, and FIBROUS LOAM, each 2s. 6d. per sack; 5 for 10s. PREPARED POTTING COMPOST, 4s. per sack; 5 for 18s. All sacks included.

Send Postal Order for Sample Sack.

Special terms to the Trade. For Price List apply to THE FORESTER, Joyden Wood, near Bexley, Kent.

EPPS'S Selected PEAT,

For ORCHIDS, STOVE PLANTS,

Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. SPECIAL ORCHID PEAT, in sack only.

Rich fibrous LOAM, superior LEAF-MOULD, Coarse, Crystal, and Fine SILVER SAND, CHARCOAL, C. N. FIBRE REFUSE, fresh SPHAGNUM, Patent MANURES, FERTILISERS, INSECTICIDES, and all other Garden Requisites. Peat Moss Litter. The Original Peat Depot, RINGWOOD, HANTS.

THOS. W. ROBINSON.

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IRON WORKS STOURBRIDGE

THE FRUIT GARDEN of the UNIVERSE.

—THE AUSTRALIAN IRRIGATION COLONIES (Chaffey Brothers), established and regulated by Government, OFFER an enjoyable life and OCCUPATION, a sunny and salubrious Climate, and most highly remunerative returns to Cultivators with small or large Capital. Pamphlet free. CHAFFEY BROTHERS, Limited, 35, Queen Victoria Street, London, E.C. J. E. M. Vincent, Chief Commissioner.

CATALOGUES RECEIVED.

ERNST BENARY, Erfurt, Germany—Vegetable, Agricultural, Flower, Tree, and other Seeds.

WM. CUTBUSH & SON, Highgate—Plants for Early Forcing and Winter Decoration, New Chrysanthemums.

HOGG & WOOD, Coldstream and Duns, N.B.—Conifers, Forest and Ornamental Trees, Roses, Fruit Trees, &c.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), LIMITED, Garston, near Liverpool—The Wrigley Collection of Orchids.

A. LEITZE, P.O. Box 644, Rio de Janeiro—New Caladiums, Orchids, Bulbs, and Palm Seeds.

E. & W. HACKETT, 73, Rundle Street, Adelaide, South Australia—Manual for Garden and Farm, and General Catalogue.

JOHN LAING & SONS, Forest Hill Nurseries, London, S.E.—Vegetables and Flower Seeds, Begonias, Garden Sundries, Implements, and Manures.

JAMES CARTER & CO., 237, 238, and 97, High Holborn, London—Seeds.

B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London N.—Flower, Vegetable, and Agricultural Seeds, Sundries, &c.

ED. WEBB & SONS, Wordsley, Stourbridge—General Catalogues.

GARDENING APPOINTMENTS.

MR. S. A. TAYLOR, for the past five years Gardener at the Woodlands, West Hartlepool, as Gardener to GEO. RYMAN, Esq., Rosebank, West Hartlepool.

MR. GEO. J. SQUIBBES, late Nurseryman at Gresford, as Head Gardener to the Dowager Lady WILLIAMS WYNN, Llang-dwynn, Oswestry.

MR. F. FENNIMORE, formerly Gardener at the Villa Stewpie, Claydon, as Gardener to A. WILSON, Esq., Wildwood Farm, North End, Hampstead, N.

MR. G. J. CLOKE, of Moor Park, Farnham, as Head Gardener to H. R. FRESHFIELD, Esq., Kidbrook Park, Forest Row, Sussex.

MR. THOS. PATTISON, for upwards of twenty years Gardener at Rosebank, West Hartlepool, is appointed as Gardener to Major GRAY, Tunstall Estate, West Hartlepool.

MR. JOHN BYWATER, as Head Gardener to the Honourable Lady LYTTLETON, The Chantry, Ross, Herefordshire.

ESTABLISHED 1851.

BIRKBECK BANK,

SOUTHAMPTON BUILDINGS, CHANCERY LANE, W.C.

TWO-AND-A-HALF per Cent. INTEREST allowed on DEPOSITS, repayable on demand.

TWO per Cent. on CURRENT ACCOUNTS, on the minimum monthly balances, when not drawn below £100.

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For the encouragement of Thrift the Bank receives small sums on deposit, and allows interest, at the rate of TWO-AND-A-HALF PER CENT. per annum, on each completed £1.

BIRKBECK BUILDING SOCIETY.

HOW TO PURCHASE A HOUSE FOR TWO GUINEAS PER MONTH.

BIRKBECK FREEHOLD LAND SOCIETY.

HOW TO PURCHASE A PLOT OF GROUND FOR FIVE SHILLINGS PER MONTH.

The BIRKBECK ALMANACK, with full particulars, post-free. FRANCIS RAVENSCHOFF, Manager.

WANTED, a practical WORKING GARDENER, married, without incumbence preferred, age about 30, to take charge of a Nursery. Four assistants. Must be well up in Propagating, and a first-class Grower of Grapes, Tomatoes, Cucumbers, Mushrooms, &c. Must also understand Selling, and be able to Keep Accounts. Wages 25s. per week, with residence only.—Apply by letter, stating references as to character and ability, to "BENNETT," the Cemetery Works, Aldington, near Brighton.

WANTED, at once, a GARDENER, married. Must be able to do ordinary Flower and Vegetable Garden well. Lawns, &c. About 1 acre, and one conservatory, mostly Ferns. State wages required, and when disengaged. Single-handed place.—Apply to CHARLES PAGE, Rose Lodge, Winchmore Hill, N.

WANTED, a FOREMAN, to take full charge of the Glass in a Market Nursery in the North. —Must be a first-class Grower of late Grapes, Tomatoes, Cucumbers, Mushrooms, Chrysanthemums, Winter-flowering Carnations, and Scarlet Geraniums; Bulb Forcing, and general Pot Stuff. None but those whose character and ability will bear strict investigation need apply, applicants to state age, wages required, and where previously employed, to MACINTOSH, 8, Warwick Square, Carlisle.

WANTED, good SECOND-MAN, for Out-door Fruit for Market; must have knowledge of Tomatoes, Mushrooms, and Flowers.—H. SMART, 44, Tressilian Road, Brockley.

WANTED, TWO young MEN; quick at Boxing and Bunching Lily of Valley. Wages £1.—WOOLF, Shirley, Southampton.

WANTED, experienced FLORIST; must be clever and quick at making up, also good Salesman.—PARKER & SONS, Florists, Bristol.

WANTED, a first-class TRAVELLER, to represent an Old-established London Firm of Nurserymen and Seedsmen. Must have a good connection, and a thorough knowledge of the business, especially New and Rare Plants and Orchids.—Apply by letter only to R. X., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C., stating experience and remuneration required.

WANT PLACES.**TO GARDENERS AND OTHERS SEEKING SITUATIONS.**

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

F. SANDER AND CO. can recommend several highly qualified and energetic HEAD and UNDER GARDENERS, of excellent character, and proved ability; men thoroughly fitted for all the various duties of their profession. For all particulars, please apply to—F. SANDER AND CO., St. Albans.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

B. S. WILLIAMS AND SON beg to intimate that they have at present in their Nursery and upon their Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BALIIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Victoria and Paradise Nurseries, Upper Holloway, N.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application. Telegraphic and Postal Address—"DICKSONS, CHESTER."

GARDENER (HEAD), seeks re-engagement, where a reliable and trustworthy man is required.—Age 42, married, no family; life experience.—MORRIS, East Street, Kimbolton, St. Neot's.

GARDENER (HEAD, or SINGLE-HANDED).—Disengaged; skilful Grower of Orchids, Grapes, Pines, Peaches, Melons, &c. Highest references. Wages 21s., House and Firing.—J. COX, 4, Dennis Road, East Moseley, Surrey.

GARDENER (HEAD WORKING), where four or more are kept.—Age 40; twenty-six years' practical experience Inside and Out. Eighteen years in last situation.—G. BARILE, 18, Brown Lane South, Beeston, Notts.

GARDENER (HEAD WORKING).—Age 29; married, no family; thoroughly experienced in all branches of Gardening. Good testimonials and character.—G. G., Mr. Green, 47, Hartfield Crescent, Wimbledon.

GARDENER (HEAD WORKING), where two or more are kept.—Age 38, married, no children; nine and a half years in present situation. Thoroughly experienced Inside and Out. Good reference.—T. FOX, Scrivelsby Court, Horncastle, Lincolnshire.

GARDENER (HEAD WORKING).—Age 31; thoroughly experienced in Vines, Melons, Cucumbers, Tomatoes, &c.; Stove and Greenhouse Plants, and Flower and Kitchen Gardens. Character will bear strictest investigation.—Z., Willow Cottage, Wellington Heath, Ledbury.

GARDENER (HEAD WORKING).—Age 26; Thoroughly experienced in all branches of Gardening; nearly five years in present situation. Can be well recommended.—G., Gardener, Addington Manor Gardens, Winslow, Bucks.

GARDENER (good SINGLE-HANDED, or one or more under).—Age 28. Can be well recommended. Total abstainer.—D., Mr. C. Stott, Head Gardener, Caversham Park, Reading.

GARDENER (good SECOND), Inside and Out; age 25, married, no family.—Mr. CHAPPELL HODGE wishes to strongly recommend F. Head. He has been with him seven years, and is leaving for no fault.—Pounds, near Plymouth.

GARDENER (SECOND), or JOURNEYMAN, Inside.—Age 23; eight years' experience. Good references.—F. B., 2, Glenny Terrace, Wilton Road, Ilford.

IN LANDSCAPE GARDENING, Growing of Trees, Shrubs, or Hardy Perennials, a German Gardener wants situation Outside, or in Office. Age 21. Eight years' good experience. Nine months in England. Knowledge also in Landscape-photography.—H. A., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

FOREMAN (GENERAL); age 30.—WM. MEADS, Buscot Park Gardens, Faringdon, Berks, can strongly recommend Geo. Watson, who has lived with him four years, as Fruit Foreman to any Gardener requiring a trustworthy man.

FOREMAN, or good SECOND.—Age 26; twelve years' experience. Good Plant and Fruit Grower. Good character. Active, bold, industrious.—W. WATERS, Charlton Road, Keynsham, Bristol.

FOREMAN, Outside.—Age 38; fifteen years' thorough experience in all branches. Good character. Please state wages.—T. ODD, The Gardens, Stoughton Grange, Leicester.

FOREMAN, in a Small Establishment, or good FIRST JOURNEYMAN; age 23.—Mr. J. C. MUNDELL, Head Gardener to the late Lord Ebury, can with confidence recommend A. Cozens as above.—A. COZENS, Sigwell Cottage, Charlton Horethorne, Sherborne, Dorset.

JOURNEYMAN; age 19.—Mr. J. FRIEND, Rook's-nest Gardens, Godstone, can highly recommend C. Hartup as above. Three years here under Glass.

JOURNEYMAN, in a Florist's or Market Gardens. Six years' experience in London markets; good character and references.—H. HOWARD, 4, Sandcliff Road, Erith, Kent.

JOURNEYMAN, for Lawns and Kitchen Garden, or under Glass; age 24.—Mr. CLINGING, Head Gardener, Sanderstead Court, near Croydon, can with confidence recommend the above. Four years' excellent character.—Address as above.

APPRENTICE.—Wanted, to apprentice a youth (age 15), to learn Gardening in a good establishment. Moderate Premium.—STALLON, James Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W.

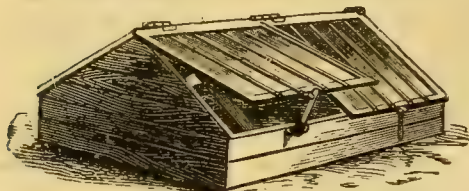
TO SALESMEN.—Advertiser (age 24), used to Clerking and Selling Fruit and Flowers in Covent Garden, requires situation.—J. ADCOCK, 7, Ruby Place, Wisbech, Cambs.

SHOPMAN (ASSISTANT).—Age 27, married; twelve years' first-class experience; good knowledge of nursery trade, also used to brisk Counter.—E. W., 50, Foregate Street, Chester.

THE ENGLISH LANGUAGE is spoken by over one hundred millions of persons, sixty-nine millions speak German, over forty-one millions French, and thirty millions Italian. Spanish is understood by forty-one millions, and thirteen millions speak Portuguese, whilst Russian is understood by sixty-seven millions; thus, at least, three hundred and sixty-one millions of people are acquainted with the wonderful curative powers of Holloway's Pills and Ointment, as instructions for their use have been translated into the various languages named; in fact, they are known everywhere as the best medicines for all diseases. During the present cold weather they will be found invaluable for the prevention or cure of influenza, rheumatism, and all diseases of the throat and lungs.

GREAT REDUCTION IN FRAMES

OUR WELL-KNOWN MAKE.



PORTABLE PLANT FRAMES.

These Frames are made of the Best Materials, and can be put together and taken apart in a few minutes by any one.

Sizes and Prices, Glazed and Painted.		£	s.	d.
6 feet long, 3 feet wide	CASH	2	0	0
6 feet " 4 feet "	PRICES,	2	5	0
12 feet " 4 feet "	CARRIAGE	4	0	0
6 feet " 5 feet "	PAID.	2	15	0
12 feet " 5 feet "		4	15	0
12 feet " 6 feet "		5	12	6

Larger sizes at proportionate prices.

R. HALLIDAY & CO.,

ROYAL HORTICULTURAL WORKS,

MIDDLETON, MANCHESTER.

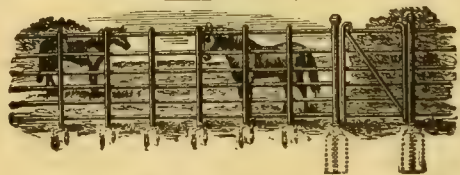
London Agent, Mr. H. SKELTON, Seedsman, &c., 2, Holloway Rd., N.

HILL & SMITH,

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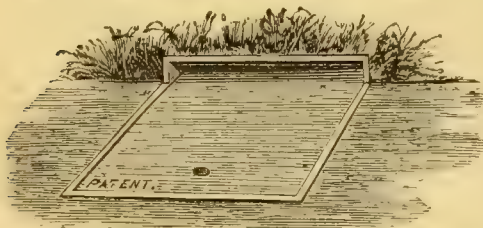
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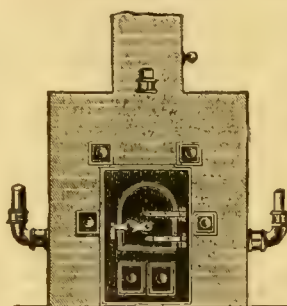
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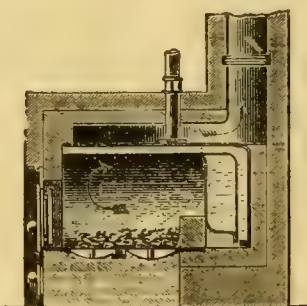
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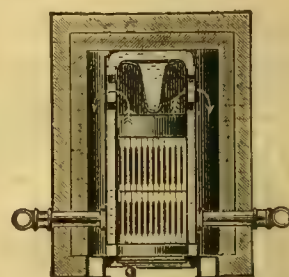
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ESTABLISHED 1841. No. 2766.

No. 366.—VOL. XIV. { THIRD SERIES. }

SATURDAY, DECEMBER 30, 1893.

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POST-FREE, 3½d.

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Continued Increase in the Circulation.

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THE

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SATURDAY, DECEMBER 30, 1893.

SOMETHING ABOUT NITROGEN.*

CHEMISTRY tells us that air is composed mainly of two gases, nitrogen and oxygen. Each of these, like the air which they together make, is colourless and invisible. We cannot see them, yet we feel them in every breeze, we breathe them in every breath, without them we should die. Air has weight. The atmosphere presses down upon the earth with a force of about 15 lb. per square inch, or nearly 5000 tons per acre. Four-fifths of this weight is nitrogen and one-fifth oxygen. Over every acre of land, then, there are nearly 4,000 tons of nitrogen and 1,000 tons of oxygen. The oxygen is the active, and the nitrogen the inactive element of the air. To make a fire burn, we provide a supply of air; it is the oxygen that supports the combustion. Close the draft, and as soon as the oxygen is used up, the fire goes out. Nitrogen remains, but it cannot sustain the flame. We breathe air to support life. In an atmosphere of pure oxygen respiration would be too active, but in one of pure nitrogen we should suffocate.

WHERE NITROGEN IS FOUND.

Everywhere, then, where air is, there is nitrogen. Not only in the atmosphere as it surrounds the whole earth, but in the waters of springs, rivers, and the ocean, also in the soil which the air permeates. But there is a great deal of nitrogen besides that in the air, for it forms a part of every plant, from the grass to the Oak, and is in every organ—in root, stem, leaf, flower, fruit, and seed. It occurs in the body of every animal, and in every part of the body. Neither plants nor animals could exist without it. It is an essential element of our food, and the costliest component of fertilizers for our crops. It is present in every fertile soil; indeed, no soil could be fertile without nitrogen.

FREE AND COMBINED NITROGEN.

The nitrogen that makes up the bulk of the air is in what chemists call the free state. The atoms, as they are called, are not united to those of any other element—they exist by themselves; but they are capable of combining with other elements to form compounds. Thus, an atom of nitrogen unites with three atoms of hydrogen to form a compound called ammonia; and two atoms of nitrogen combine with five atoms of oxygen to form a compound called nitric acid. So long as the nitrogen remains free, it can be used but very little, either by

* Abstract of a Lesson in Agricultural Chemistry, by Prof. W. O. Atwater, of Middletown, Conn., U.S.A.

plants or animals, but in its compounds it can be directly used as a food and fertilizer; and the compounds of nitrogen are employed in a great variety of ways to supply the wants of man.

COMPOUNDS OF NITROGEN.

The nitrogen compounds that are of most importance in daily life, may be divided into three classes—ammonia, nitrates, and organic nitrogen:—

Ammonia.—This substance, like nitrogen, is a colourless, invisible gas. It is composed of two gases—nitrogen is one, the other is hydrogen—the gas which, combined with oxygen, forms water. Ammonia is formed when nitrogenous matters decay. We often detect a strong smell of it in the stable, and around the out-houses. We have it in concentrated forms in smelling salts, and in sulphate of ammonia, which is so much used as a fertilizer.

Nitrates—Nitric Acid.—It has been mentioned that two atoms of nitrogen may unite with five atoms of oxygen, and that the compound is called nitric acid. But the latest chemical theory requires that some water should be added to this to make the true nitric acid. If we take nitric acid and put soda with it, we get nitrate of soda. The substance under that name that is so much used as a fertilizer for our crops, is an impure material brought by thousands of tons from Peru and Chili. Ordinary saltpetre is a nitrate of potash, that is, it consists of nitric acid and potash. Nitric acid in the soil combines with lime, making nitrate of lime. In this form, nitrogen is very liable to be washed out of the soil by rain-water, and carried beyond the reach of the roots of the plants into drains and ditches. The loss of fertility which soils suffer by washing away of nitrates is incalculable.

Organic Nitrogen Compounds.—Nitrogen in ammonia, nitrates, and other forms, is gathered by plants from soil and air, and used by them as food. When it gets into the plants it undergoes wonderful changes. It combines with other elements, carbon, oxygen, hydrogen, and so on, and these compounds are stored away in the different parts of the plant.

Nitrogen of the Atmosphere.—We have already learned that four-fifths of the air is nitrogen in the free state. The atmosphere also contains combined nitrogen, ammonia, nitrates, &c., but the quantities are very small. Rain, snow, and dew, bring nitrogen compounds to the soil, but in quantities so minute as to do but little toward enriching it. That is to say, the amount of ammonia and nitrates brought to the soil in this way in a year would be about 7 lb. per acre. Some chemists hold that the free nitrogen of the air is assimilated by the soil, but this is doubtful.

The Nitrogen of the Soil.—The nitrogen of the soil comes partly from the atmosphere and partly from vegetation—that is, from plants which have grown and been left to decay in it. The soil contains very little ammonia or nitrates. Nearly all its nitrogen is in the more complex form of organic nitrogen. But the nitrogen in the soil is undergoing continual change. The organic nitrogen is altered, by "nitrification," to nitric acid, and this nitric acid, unless seized upon by plants, is sooner or later carried away by water, and lost to vegetation.

Nitrogen in Fertilizers.—Natural manures, dung, urine, &c., contain scarcely any nitric acid, and but very little ammonia. Nearly all the nitrogen is in the form of organic nitrogen. It occurs as organic nitrogen, likewise in most of the artificial manures, as bone, dried blood, fish-manure, leather-waste, and in the "ammoniated" phosphates, in which these are used to supply the nitrogen.

Peruvian guano contains considerable ammonia, but the larger part of the nitrogen is in organic compounds.

Indeed in all ordinary nitrogenous manures, except nitrate of soda and sulphate of ammonia, the bulk of the nitrogen is organic nitrogen.

WHAT FORMS OF NITROGEN DO PLANTS USE FOR FOOD.

Plants can take their nitrogen as ammonia, as nitric acid, and as organic nitrogen. They seem to

prefer nitrates and ammonia. The number of organic nitrogen compounds which they are able to digest, so to speak, is limited. Practically the larger part of the nitrogenous food of plants seems to consist of the nitric acid which their roots gather from the soil. This nitric acid is derived mostly from the decay of vegetable and animal remains in the soil, though part comes from the atmosphere in the forms of ammonia and nitric acid.

The inert nitrogen compounds, which, until changed, are useless to the plant, are gradually altered by the process of nitrification previously referred to, and finally reach the condition of nitric-nitrogen, which is the form most preferred by plants. And not only is the vegetable matter of the soil thus worked over for the use of plants, but animal refuse, dung, guano, and the various materials used for fertilisers, including even ammonia, are transformed by Nature in that wonderful laboratory which we call the soil, and converted into the compounds best fitted for the nourishment of the plant. *J. J. Willis, Harpenden.*

NEW OR NOTEWORTHY PLANTS.

GRADERIA SUBINTEGRA, Mast. sp. nov.*

For dried specimens of this very beautiful Scrophulariaceous perennial we are indebted to Mr. W. Nelson, the Nurseries, Booyens, Johannesburg. It is, says Mr. Nelson, "a very handsome and uncommon-looking plant—a trailer, herbaceous, three inches high, with Gloxinia-like pink flowers, with lighter shade in the interior of the flower."

The branches radiate from a woody stock, and trail on the ground; they are slender, coarsely hairy, somewhat woody. The alternate subsessile leaves are elliptic, acute, rather thick, about half inch long, a quarter of an inch broad, rounded at the base, with a prominent midrib and recurved margins, both midrib and margin covered with coarse, whitish hairs. The secondary nerves are obscure and pinnately disposed. The flowers are borne in erect leafy racemes, and are in shape something like those of a Gloxinia, but smaller, rosy lilac, with a lighter shade in the interior, and the veins netted and depressed. The illustration, fig. 122, and the details given in the footnote, obviate the necessity for any further technical description here.

For garden purposes this is likely to be a very desirable acquisition. It will probably require warm greenhouse treatment, but in the Riviera, as in many of our colonies, it would probably thrive well in the open. Seed may be had from Mr. Nelson.

* *Graderia subintegra*, Mast., sp. n. — Scrophulariaceae perennis herbacea piloso-scabrida, caule florifero 3–5 pollic. erecto ramoso, ramis sterilibus pluribus e rhizomate lignoso procumbentibus seu erecto-patentibus; foliis subsessilibus alternis seu suboppositis subcoriaceis 1–2 cent. long. 7–8 mill. lat., oblongis acutis basi rotundatis, integris raro parum pinnatifidis, nervo medio subtus prominente aequo ac marginibus revolutis piloso-scabridis, nervis secundariis obscuris; racemis erectis multifloris, pedunculis brevissimis alternis in axillis bractearum foliacearum solitariis; bracteolis 2 lateralibus lineari-oblongis calycis tubo campanulato aequalato approximatis eoque dimidio brevioribus; sepalis oblongis acutis 1-nerviis, nervis piloso-scabridis, tubum subaequantibus; corollae roseae circa 3 cent. long. calyceque duplo longioris tubo oblique ventricoso infundibulari, limbo subaequaliter 5-lobis, lobis rotundatis reticulatis nervosis nervis depressis; filamentis 4 longe pilosis tubo infra medium anascentibus inclusis, antheris biocularibus, loculis subaequalibus apiculatis basi divergentibus; ovario gibbo glabro stylo filiformi exserto; fructu haud viso. *Graderia scabra* var. *subintegra*, Bolus and MacOwen MSS., in *Herb. Aust. Afric.*, n. 3090!

Hab. Transvaal in planitie prope Pretorium alt. 4000 ped. Flor. Sept. Bolus; Rehmann, 4284; Nelson; Macalisberg, Burke; Barberton, Galpin, n. 444! (var. foliis linearibus praedita).

Graderia species sequente modo dignosci possunt.
G. SCABRA, Benth. in *D. C. Prod.*, x., 521. C. B. Sp. Uit-nidge, Griqualand East, Kaffraria, Natal.
G. SUBINTEGRA, Mast., supra descript. Transvaal.
G. FRUTICOSA, Balf. in *Bot. Socotra*, p. 205, t. 62. Socotra.
Folia manifeste pinnatinervia integra raro lobata.
fruticosa, erecta ... G. FRUTICOSA.
perennis, rami patuli prostrati ... G. SUBINTEGRA.
Folia subpalmatinervia plerumque lobata, rami erecti ... G. SCABRA.
M. T. M.

The plant is nearly allied to *G. scabra*, of the Cape Colony and Natal, and indeed dried specimens were distributed as a variety of that species by Messrs. Bolus & MacOwen; but the geographical distribution, the entirely different habit, the usually quite entire one-nerved leaves, the linear-oblong acute calyx-lobes, equal and glabrous anther lobes, serve to distinguish it. In drying, moreover, it turns of a black or very dark brown colour, which *G. scabra* does not do. A variety with narrow linear leaves also occurs near Barberton.

A third species, distinctly shrubby, with oblong-obtusate leaves which turn black in drying, was discovered in Socotra by Prof. Bayley Balfour. *M. T. M.*

CYPRIPEDIUM × MRS. TAUTZ, gard. hybr.

This is one of the most beautiful and striking-looking hybrids ever raised. Unfortunately, there is no record of its parentage, and although the flower embodies several good features of some favourite species, it is difficult to suggest its origin. I have showed the flower to several persons who make of the hybrid *Cypripedium* a special study, but beyond the confirmation of my statement that it is quite new and the best of its class, I have got no further help. To describe it, we must take the best form of *C. insigne* Chantini, usually called *C. i. violaceopunctatum*, which is much superior to the original *C. i. Chantini*. Imagine it increased in size, and of a thicker substance; let the broad white upper half of the dorsal sepal be decorated with many instead of few violet-purple blotches, and the surface of the lip and the broad villosum-like petals have a bright dark red-brown colouring, and the whole surface of the flower be very glossy, and an approximate idea of its beauty is obtained. The plant has broad green leaves, like those of *C. × Sallierii*; the stout scape is covered with purple hairs; the bract green, spotted with purple at the base; ovary green-coloured, sparsely covered with hairs of a purple colour; the upper sepal, which is over 2½ inches wide, is of an emerald-green tint at the base and spotted with purple; the upper half pure white, spotted, all but the broad margin, with violet-purple; the lower sepals are as long as the lip, greenish-white, with a few lines of purple dots; petals 1 inch broad, formed like those of *C. villosum*, yellow, tinged with dark red-brown; lip similarly coloured, and with a clear yellow margin; staminode large, light-yellow with a dark yellow boss in the centre. Some extraordinary forms of *C. insigne*, *C. villosum*, and *C. Boxalli*, are in the Tautz collection, and on one side or the other one of these may have been used, the other agent perhaps being a hybrid. The result is highly satisfactory. It is a pretty plant, and may well bear the name of the wife of the raiser, Fred. G. Tautz, Esq., Dibdin House, Ealing. *James O'Brien.*

LAVENDER CULTURE.

IN our issue of October 28, "H. C. P." asks if *Lavandula spica* is grown in large quantities in England for the manufacture of lavender-water? If so, where, and what are the conditions under which it is so cultivated?

There are two species of Lavender grown for commercial purposes, viz., the common Lavender (*Lavandula vera*), and the French Lavender (*L. spica*). The former yields the fragrant oil of lavender, used in perfumery (its solution in spirits of wine forming what is called lavender-water), and the latter, oil of spike, used by painters on porcelain, and in the preparation of varnish for artists.

Oil of spike is chiefly imported from the South of Europe, so we presume that "H. C. P." wishes for information respecting *L. vera* and not *L. spica*.

Lavandula vera is much cultivated at Mitcham, Surrey. The number of acres under the crop is said to be about 200. The soil most suitable for its growth is light and sandy, although it will flourish on a loamy clay. The plant is very subject to disease, and requires frequent renewing.

Rich dung or strong forcing manures are con-

sidered very injurious to Lavender, but we think a dressing of kainit-salt, sulphate of potash, or basic-slag, about 2 cwts. to the acre would prove beneficial, and assist in warding off disease. When a new plantation of Lavender is about to be made, a liberal application of dung is given to the land, and Potatoes are planted; the next autumn the Lavender

When the ground is ready, the new sets are prepared in the following manner:—The ground, being all lined out, the old plants are lifted up, and men are ready to pull or slip them, making as many plants out of the plantation that is being destroyed as they can; and the longer they are split down, with, if possible, roots to them, so much the better,

the best always. A plantation will last four or five years, much depending upon the general health of the plants. Nothing is done to the land after planting beyond an occasional hoeing to keep down the weeds.

An acre the second year is said to bring in £20 worth of Lavender. The expenses per acre are



FIG. 122.—*GRADERIA SUBINTEGRA*, GREENHOUSE PERENNIAL: FLOWERS ROSE-COLOURED. (SEE P. 798.)

A, section through flower; B, floral leaf, bract, and calyx; C, ovary; D, cross-section of ovary; E, seed; F, stamen.

is put in. As soon as the crop of Potatoes is off, the whole of the ground is either dug or ploughed, and the deeper the better.

November is the proper time to plant the new crop. Sometimes the planting is performed in February or March, but it never does so well. Slips planted in November will make fresh shoots before Christmas. Diseased slips obviously should be avoided.

and this is mostly the case from the very nature of the original planting. When mere slips are employed, single ones are never put in, but generally three or four slips in each hole, the better to ensure success. They are set 6 inches deep, leaving about 3 inches above ground; the plants are set 2 feet apart each way.

The first year the new plantation will yield a few branches of blossoms. The second year is considered

estimated as follows:—Planting and cultivating, £3 10s.; cutting the blossoms, 7s.; distilling, about £1 10s.

The proper time to cut the Lavender for distillation is just when the lower blossoms are beginning to change colour to a darkish brown, and the sooner that, within a few days after cutting, it is distilled the better, as if left too long, the flowers would lose much of their odour by evaporation.

The blooming-spikes being cut down to the main plant, the blossoms and stems are all distilled together, and for the first run there is not allowed more than two hours; this is to get all the clearest and best oil, which should be nearly colourless. The second run is allowed four hours on account of the stalks, but this last distillation is generally of a pale amber tint, and is rather stronger and more coarse in its odour. *J. J. Willis, Harpenden.*

FOREIGN CORRESPONDENCE.

BERLIN LETTER.

THE late summer was an exceptional one, and it had an unusual influence upon vegetation. This was shown at one of the meetings of our Horticultural Society; specimens of Brussels Sprouts, densely set with sprouts, and also in full flower, were exhibited. This year has been one of the best fruit years for a long time; but the fruits are not keeping well, especially Peas. A good idea of the fruits of this year was given by the large fruit exhibition at Breslau. Seldom have there been so many well-grown fruits to be seen at once. Highly interesting was the exhibition arranged by the *Praktische Rathgeber*, a widely-distributed journal; each reader was allowed to send three specimens of three sorts of fruit which he thought to be the best in his county. About 250 readers sent fruits, which were arranged geographically, so that it could be easily seen which sorts are most grown in the different parts of Germany. The fruit exhibition at Berlin, some days afterwards, was also an interesting one, and included a collection from Russia. An exhibition of flowers has also been held at Berlin, where Chrysanthemums took the largest space. It is curious, though, that German gardeners cannot grow these anything like so well as in England. The cut flowers of Messrs. Reid & Bornemann, of London, which were the only ones sent from England, were far before all the others. Amongst our German collections, those of Mr. Spindler (head gardener, Weber) were the best; they contained some varieties of high value, directly imported from Japan. German gardeners take more interest in growing the plants into set forms; so the collection of Messrs. Fehmer & Sons, at Berlin, was much talked about. They exhibited, amongst other specimens, a fan of more than 2 metres high and broad, formed by one plant only, and carrying hundreds of pale rose-coloured large flowers. Another specimen was formed like a round table, of 1 metre high and 2 metres in diameter; the table-top was formed by thousands of white flowers.

Better than the Chrysanthemums were the other flowering plants, especially the Carnations, Picotees, and Cyclamens. There were good collections of zonal Pelargoniums to be seen. Of Orchids there were some large collections, especially one of *Cypripedium* from Mr. Larkner, Steglitz, who exhibited specimens of more than a metre in diameter with a great many flowers. A very fine plant is the *Fuchsia triphylla*, of which we saw a nice specimen with a stem of about 1 metre high, and a crown of the same diameter full of flowers. *Cuphea platycentra* was exhibited, grown in the same manner. *Medeola asparagoides* is much liked here, and fine specimens are often seen in the florists' shops. This plant, so much grown in the United States of North America, is especially adapted for sprays, button-holes, &c. The imports of cut flowers from Italy this year is enormous, and, of course, the prices are very low. One hundred Safrano Roser, for instance, are sold for 2*sd*. Notwithstanding, our gardeners force Roses, and get good prices. It may interest you to know that we had this year forced Roses blooming on November 10, whilst in other years the first appeared about Christmas. At that same time Roses were still in flower here in the open air, and the best Roses we have had this year was in October. The disease, has destroyed large quantities. It is a bacterium which attacks the twigs and leaves, and kills the plants in a short time. Another disease which destroys a great many plants

is the *Diplosis oculiperda*, the larva of a little fly which kills the buds. Your Berlin cotemporary, the *Gartenflora* will be changed in character in the next year. The *Verein zur Beförderung des Gartenbaues in den Kgl. Preussischen Staaten* will publish this famous old journal at its own expense. The coloured plates will cease to appear, the number of sheets will be reduced, and the proceedings of the Society will be published in the *Gartenflora*. So only the title of the old journal will remain.

EARLY AND MAIN CROP PEAS.

THE past season will long be remembered for its bright sunshine, and as regards mid-season Peas, as a very trying one; particularly was such the case in gardens where the soil is light and sandy, or where the supply of water was not sufficient. I think it may be of use, therefore, if gardeners will state in the *Gard. Chron.* the nature of the soil they have, and also the sorts of Peas that have given the best returns from the end of May to October. For my part, I do not grow Peas of the round or smooth type, as such sorts do not find favour, although where the soil is heavy, and the locality late, such sorts stand rough weather better than the Marrows.

I am much pleased with Veitch's Chelsea Gem for first early. This is a very early hardy Pea, as well as being a very heavy cropper. I gathered this variety in May last from seed sown in small pots in December, and planted out January 2, when only 2 inches high, as I believe Peas do not like to be checked in any way. These Peas grew 2 feet high, and the crop they yielded was excellent. I know that usually Chelsea Gem only grows 1 foot high, but if it have good ground, it will grow 2 feet and more in height, and be all the better. Duke of Albany, one of the grandest Peas ever sent out, was my second early, and treated in the same way as to sowing and planting as the Gem, it was ready at the end of May, and was truly a grand Pea, the crop being very heavy, and of the best quality when cooked. Some gardeners object to this Pea because it grows too high; but where sticks can be had, I very much prefer main-crop Peas from 4 to 5 feet high, and during the wet seasons of 1891 and 1892 Duke of Albany was over 6 feet high. On our sandy soil many good dwarf Peas, such as Veitch's Perfection and Sturdy, in hot dry seasons, do not pay for growing, becoming a prey to mildew, and the pods not coming to perfection. In many places sticks cannot be had for tall Peas, and as no kind of Pea will bear topping, the dwarf kinds of Peas are of great service; but for hot dry weather, select a Pea of not less than 4 feet. In regard to topping Peas, I would mention that eight years ago, during my first season here, the pheasants picked all the tops off my early Peas much nearer than I or any man could have done it, and the Peas were ruined. The Peas were just over a foot in height when the pheasants topped them; since that time I have always had to protect by wire all my Peas and other vegetables except Celery.

Ne Plus Ultra was always a great favourite of mine, but in dry weather on our sand it soon gets blighted, and I only sowed two rows this season alongside Autocrat, a Pea that like Duke of Albany, is all that can be desired. The Ne Plus Ultra was soon blighted and very badly mildewed, but Autocrat was as green as Leeks, and was splendid right up to October, withstanding the drought even better than Duke of Albany. I must here state that Autocrat is a very strong grower, and sown in company with Duke of Albany was two weeks later, but as a main crop Pea it is a fine sort, and in future I shall sow it largely. Many gardeners prefer to sow their first early Peas in pots, and afterwards place them in cold pits or frames. This plan saves much trouble, but in any case I have no room to spare for pot Peas, and unless they are planted-out after they are some 2 inches high, they receive a check and never attain to perfection, for to have good heavy crops of Peas the bine should never feel a check. This season my Duke of Albany never showed a flower until they

were over 3 feet high; I have now 154 yards of Peas just showing through the ground, they were sown on November 15 on a south border, and which will get no protection in any way, except guards and wire-netting to keep off pheasants and water-hens, and all being well, these Peas will be in pod early in May next. The sorts sown are Chelsea Gem, Exonian, and Duke of Albany. *W. C. Leach, Albury Park Gardens.*

ORCHID NOTES AND GLEANINGS.

MASDEVALLIA TOVARENSIS.

AMONGST the many fine things to be seen, at various times of the year, in the gardens of Woodhatch Lodge, Reigate, mention should be made of the plants of *Masdevallia towarensis*, which at the present time form a remarkable display; and this is possibly the more striking as these plants are arranged in a double line, running the full length of the house, and it is the first house of the Orchid-range which is entered. The plants, about twenty in number, are grown in 7-inch pots, and possess on an average twenty-five spikes on a plant, and from four to five flowers on a spike. Mr. C. J. Salter, the gardener at Woodhatch, is to be congratulated upon his great success with this species. *H. B.*

THE TREATMENT OF SOUVENIR DE LA MALMAISON CARNATION.

THE fine blooms of the above variety are much appreciated at any time, but most in the winter season. As a button-hole flower with garnishing of their own leaves, or the Old Clove Carnation, nothing can be nicer. The flowers are equally fitting for furnishing small vases, one or more flowers being placed in each vase.

In the middle of the month of August, 1892, a friend who grew this Carnation extensively in his then place, kindly sent me a few old plants, which, together with a few plants which I already possessed, I at once planted in a west border, and then layered every available shoot into prepared soil. The layers rooted uniformly well, and towards the end of September 350 of them were potted into 3-inch and 4½-inch well-drained pots, sound fibrous loam being used as potting soil, which was made firm about the roots.

The plants, after being watered, were stood near to the glass on a bed of coal-ashes in a cold pit. Here they were slightly shaded when necessary for a few days, i.e., until the new roots were made, when the pit was freely ventilated on all favourable opportunities, and the ashes drawn off for a few hours on most fine days. About the middle of the month of November the plants were shifted into 5½-inch and 7-inch pots, employing the same kind of loam as before, only this time it was in a rougher state, and placing the plants as they were potted into our first house, at a fair distance apart, on a stage that runs along the middle of the house. Here the plants had full light, and air in abundance; they were not too far from the roof. The soil having sufficient moisture, water was not afforded the plants for three or four days after the potting, and great care was afterwards taken in the watering. The ventilation at the top of this house was seldom stopped during the winter, and the pipes were made warm to prevent the temperature at any time falling below 32°. The plants made a sturdy growth, and required to be repotted in February. A month or six weeks later, the Figs requiring a higher temperature than I considered would be good for the Carnations, the latter were transferred to some new cool pits facing south, and the pots stood on sifted coal-ashes, over which some soot was strewed to deter worms. Waterings of diluted liquid-manure and weak soot-water were afforded the plants as soon as the soil became partly filled with the roots, the plants being syringed overhead on the afternoons of warm days, the ashes made damp between the pots. The plants produced one large flower each on the

central stem during the months of May, June, and July, and these same plants have been yielding a number of large blooms during the last two or three months, and seem likely to flower till spring. As soon as the weather this last autumn became too cold for the development of the flowers in the Fig-house above-mentioned, the most forward plants were put into an intermediate-house, in which a minimum temperature of 55° to 63° is kept up for Tuberoses, so treated the plants are opening their flowers in a most satisfactory manner. I need hardly say that the flower-buds have been kept well thinned, one only being left on the top of each shoot, and as fresh flower-buds form very quickly on strong plants, the superfluous buds should be taken off every week. The young plants of this year's layering are now at the cool end of the Fig-house, and the successional flowering ones at the warmer end. I contemplate planting these early in summer, and layering the shoots at that time. In this way I think good plants for flowering the following winter might be obtained. Over care of the plants, and not treating them as hardy plants should be treated, cause more failures to grow and flower this variety satisfactorily than all other causes put together. I have frequently syringed the plants overhead with soot-water after the sun has gone off them in the afternoon during the summer months, with a view to keeping the plants free from insect attacks as much as applying it as a fertilising agent, with satisfactory results. *H. W. Ward, Longford Castle Gardens.*

SCOTLAND.

PERTHSHIRE NOTES.

WHEN one is travelling in counties which are proverbial for a cold climate, and where the conditions are not conducive to high-class gardening, it is always a matter worthy of notice, when things generally found in the garden are fine in quality and abundantly produced. Sometimes it will occur that these productions can hold their own with the best in the sunny South. It is not merely to culture under glass that I make reference, as that is as well done in many of the coldest districts of Scotland as anywhere else; but to hardy fruits and vegetables, which are cultivated in the open, with the best results. It might be imagined that the past season has had all to do with it, but where success has been visible year by year for a good part of a lifetime, surely the skill of the cultivator has had much to do with such uniform success, although climate and soil do often get the credit which is due to the gardener. It is well known that in some districts of Scotland, which are now among the healthiest in the country for man, at one time little in the way of animal life was to be seen except wild fowl; draining and deep tillage have worked wonders in rendering them fit for human occupation. Rainfall, when in superabundance, has often the blame of much that is untoward in agriculture and horticulture. It is known that some of the best fruits and vegetables seen in the North, are produced where the greatest amount of rain falls. It is evident when cultivators have a fair opportunity of turning their knowledge and experience to good account, that in the course of time they are able to overcome many difficulties. In Perthshire many examples of high-class culture may be found, which are simply due to the gardener's labours during many years, and where the gardeners have been encouraged by their employers to devote their energies to the work. In Perthshire, for example, where the majority of the gardeners spend the greater part of their lives in one situation, they accomplish much which would not be the case were they under employers whose caprice is always prompting them to find the men they are never likely to get. It is well known that many of the finest places in the kingdom are suffering by the continual changes which proprietors so injudiciously make. In Scottish establishments generally this is uncommon. In Perthshire the gardeners in the leading places at present are old in service, hale and hearty, and they have served their employers well for many years. Among a number of places, I called at Abercainey, near Crieff, where the veteran Brown is as full of energy and enthusiasm as he ever was; after managing his place well for more than

forty years. He keeps himself well up to date by competing, by reading (he told me that he had read the *Gardeners' Chronicle*, for forty-four years), and visiting exhibitions worthy of notice. Hence it is not to be wondered at that we see in the Valley of Strathearn, at a place without climatic advantages, produce equal to any in the country, and which has so often carried off highest honours in hard contests at exhibitions many miles distance from each other. Apples, Pears, Plums, Apricots, Cherries, Peaches, and Strawberries may be seen in these gardens in large quantity, and of the finest quality. The past season having been one of the best for outdoor crops, those at Abercainey could not well have been much finer. Fruit trees are neither too large nor too dwarf; Magnum Bonum, Victoria, Coe's Golden Drop, and Kirke's, among Plums, were first-rate. Pyramid trees, and those trained on the walls are kept thin, so as to get the wood and fruit well exposed to the sun and air, which has much to do with success in fruit-growing. Among examples of good culture in Apples, Lord Burleigh, Emperor Alexander, Stirling Castle, D. T. Fish, James Greive, New Hawthornden, Beauty of Bath, and White Worcestershire Pearmain were equal to the best which I have seen in the county from which the last-named variety takes its name.

Strawberry culture has for many years been a specialty at Abercainey. The ground is prepared for these fruits by deep trenching, manuring, and by being made firm before planting. The rows are 3 feet apart each way, and the plants remain for three years in bearing; but long before that time the stools have met, and although each stool retains its individuality, the space is fully occupied, and yet there is no crowding.

Turning from fruits to vegetables, we find the latter receive the highest cultural attention, and well they repay the skill and labour expended on them. Whilst every part is closely cropped, the object is to obtain fine quality and sturdy growth rather than mere size, although there is also size where it is profitable to have it, as instanced by the Onion crop. Cranston's Excelsior, a variety much grown for general use and competition in the North, yielded a handsome lot, and finely prepared for keeping, many weighed 1½ lb., while none was under 1½ lb.

Carrots at one time almost defied cultivation at Abercainey, but for many years the crops have been all that could be wished. The vexatious Carrot-grub is now not found, although the crops are grown on the same ground year by year. In the spacious range of glass, Peaches, Nectarines, and Grapes have long been well managed. The Peach and Nectarine trees are trained crosswise from back to front of the houses, which is certainly a method which gives quantity and good quality at Abercainey. Lady Downes' Seedling is the favourite late-keeping Grape. Still, others are well represented. Abercainey Seedling, *syn.* West's St. Peters, is quite different at the place at which it originated than anywhere else. This (now old) Grape was raised by Mr. James Arnot, the predecessor of Mr. Brown, who for thirty-five years managed the gardens with much skill. This place was also the home of the Messrs. McIntosh, Mr. James McIntosh (the father of Charles and James, jun.), who was widely known in his time. His son Charles was the author of the *Book of the Garden*, and gardener at Dalkeith Palace for many years, while James was gardener at Drumlanrig Castle for a long period, and these were names which were long familiar in Scotland. Mr. Brown occupies the picturesque cottage where these worthies were reared. This interesting structure has a beauty of its own, standing in pleasant surroundings of trees, shrubs, and lawns, a picture which would be interesting to many were it figured in the *Gardeners' Chronicle*. [We hope to insert it in our pages shortly. Ed.]

There is a great deal to interest a gardener at this splendid seat, and it teems with objects of beauty, such as the spacious park, with its numerous gigantic trees, many of which were blown down last November; the fine lake, long drive, beautiful lawns, the Conifers, and the flower-gardens—managed by the son of Mr. Brown, whose taste for high keeping of the ornamental department is very marked. The flower-garden, enclosed by a fence, is of French design, and is kept very gay with the usual flowering plants which are well suited to the district. Begonias are high in favour. There are besides these, terraces, a bowling-green, and long lines of choice shrubs, in which sculpture is suitably placed. Borders of herbaceous perennials are among

the more striking features of the garden. The fine mansion stands in a commanding position, and has few equals in Perthshire. All the buildings on the place are built with great good taste; the stables, at a distance, resemble a spacious castle. The plant-houses are placed near to the flower-garden, and they are kept well furnished with stove plants in variety suitable for house decoration. Greenhouse plants, such as Camellias, Azaleas, &c., are grown largely to meet the requirements of the family. Captain Murray, like numbers of his ancestors, is held in much esteem in the county, and his urbanity and kindness of heart are likely to keep up the good name of the family. *M. Temple.*

WEST INDIES.

ROSES IN THE TROPICS.

(Concluded from p. 778.)

Two excellent Roses, but not vigorous flowers, although not delicate in constitution, are:—

Souv. de la Malmaison and Souv. de Paul Nees. I have before me as I write a Malmaison bloom, which would not discredit a stand in the Crystal Palace, and a host of buds of Paul Nees, with which the most fastidious could find no fault; both of these are most profuse flowerers all the year round. Two lovely but delicate-constitutioned Roses are Marie and Pierre Guillot. Maréchal Niel and Gloire de Dijon, do fairly well here, but do not produce such flowers as we see in Europe.

The following list of Tea-roses are all profuse flowerers, the first twelve particularly so, flowering year in and year out, are all good vigorous growers, easy to manage, and easy to propagate. They are placed in their order according to merit.

Profuse-flowering Roses:—

1. Étoile de Lyon, fine saffron-yellow; producing large quantities of splendid buds, most of which develop into large full Roses of perfect form, but at times from some cause as yet unexplained, the buds instead of developing turn black and fall off.
2. Madame Jos. Swartz, white, exquisitely tinted with rose, good buds which always develop into fairly good blooms.
3. Perfection de Monplaisir, beautiful canary-yellow, of medium size, full good form.
4. Mdlle. Cecile Berthod, deep sulphur-yellow, the backs of the petals almost white.
5. Caroline Kuster, changing from yellow to salmon-pink, a real gem.
6. Madame Camille.
7. Coquette des Blanches, one of the best whites, although occasionally the tips of the petals are tinted with pink.
8. Solfaterre, great for buds.
9. Madame Bravy.
10. Siffrano.
11. Madame De Natus.
12. Bongère.
13. Jules Finger.
14. Count Lavertrie.
15. Devoniensis.
16. Celine Forestier.
17. Doucher.
18. Jean Pernet.
19. Camille Koch, pure white, very fine.
20. Dr. Berthet.
21. Lamarque.
22. Cheshunt hybrid.

The following Roses are vigorous growers, and flower freely about March or April, according to the advent of the spring rains:—

1. Earl of Pembroke.
2. John Hopper.
3. Souvenir de Madame Hélicart, a lovely Rose.
4. Jean Cherpin.
5. Queen of Queens.
6. Rosy Morn.
7. Countess of Oxford.
8. Duke of Edinburgh.
9. General Jacqueminot.

I have seen glorious plants of Cloth of Gold and Perle des Jardins at an elevation of 5000 feet, but have never seen good plants on the plains, so cannot say if they are suited to truly tropical situations.

I am now carrying out experiments in budding different Roses, which are hard to propagate by cuttings, on to various other easily-grown Roses, also on a wild Rose found on the hills (*Rosa lavigata*), and shall be pleased to inform you as to results for the benefit of your readers in other parts of the much-abused tropics. *Wm. Cradwick, Superintendent, Hope Botanic Gardens, Kingston, Jamaica.*

CHISWICK NOTES.

VARIEGATED IVIES.—The large collection of Ivies in the Chiswick gardens is interesting for the number of good variegated varieties it contains. I carefully went through the collection recently, and noted a few of the finest variegated kinds. Usually the one selected for planting in gardens is *Hedera Helix madeirensis variegata* [?], but this is too tender, except for warm positions, and the leafage gets burnt in hot summers. The best use to which I have seen this put is as an edging in Messrs. C. Lee & Son's nursery at Isleworth. *H. H. algeriensis variegata* is a good kind, the leaves of distinct shape and glaucous in colour, margined with creamy-white. *H. H. marginata purpurea* is robust and handsome, the leaves of various shades of green in the centre and creamy-white at the margin; the growth is dense and even, and the variegation decided. A very bright kind is *H. H. aurea elegantissima*, in which the broad margin of the leaf is creamy-yellow; this is one of the finest of all variegated Ivies, strong in growth, and no bare patches are left. *H. H. marginata elegantissima* is a very close-growing Ivy, the leaves with a creamy-white margin, and produce a dense covering to the wall. Another good form is *H. H. elegantissima marginata grandis*, a name that requires considerable simplification; the leaves are broad and distinctly variegated, green with a margin of white.

A very beautiful Ivy in winter is *H. H. atropurpurea*, also in the Chiswick collection; the plant makes a quick, dense, and even growth, the leaves rich chocolate-purple in colour, varying little in shade. I do not often see this variety in gardens, but it is well worth growing for the rich colour of the leaves in winter; throughout the year they preserve this distinct character. *V.*

BRICKLEHAMPTON HALL.

BRICKLEHAMPTON HALL, the country residence of R. Hinchaw, Esq., is situate about 4 miles from Evesham, and the same distance from Pershore. I had the privilege of going through these well-kept gardens a short time ago, when I was much struck with the fine condition of the plants of *Bouvardia*, *Solanum*, and *Begonia*. The *Bouvardias*, which were chiefly the single white-flowered variety, were grown in pots from 10 to 12 inches in diameter, were 2 feet high, and as much in diameter, and so full of their heads of flower that I could not put my finger between them without touching. Mr. Lott, the gardener, cuts his plants well in when they have done blooming, and places them in such a position that they will break freely, a free growth is encouraged, at all times keeping them near the glass, and giving them plenty of air. As growth advances the points of the shoots are pinched out, in order to prevent the plants from growing too tall and straggling, and to encourage bushiness. By the beginning of the month of May the plants are placed in cold frames, and as the days get warmer, more and more air is afforded them, until by the third week of the month they are thoroughly inured to the external conditions, when they are taken out of the pots, some of the soil removed from the balls, and planted out in an open position in the garden. Here they make a firm

robust growth, with short-jointed wood, and a profusion of shoots capable of carrying thousands of flowers. All the care necessary during their probation in the kitchen garden, is to keep the ground clean, and afford the plants water occasionally in dry weather. By the first week in September they are taken up, and potted in 10 and 12-inch pots, a good compost of turfy loam, with the addition of a little leaf-mould, some very rotten manure and sand being made use of. The plants are then placed in a shady situation in the open air, syringed overhead occasionally to prevent the leaves from flagging, and by the end of the month removed to the conservatory. At the time of my visit (October) the plants were smothered with thousands of their pure white, fragrant flowers.

The *Solanums* were equally well done, only they were crowded with bright red berries instead of flowers. These go through a similar course of treatment to that pursued with the *Bouvardias*. When the plants begin to decline in beauty towards spring, they are well cut in and afterwards kept in a rather close position to encourage them to break freely. They are afterwards kept in a cool temperature and gradually hardened until they can be safely turned out of their pots and planted in the open ground in the kitchen garden.

About the first week in September they are taken up and potted in 8 or 10-inch pots, and kept in the shade for a few days, when they are ready to do duty in the conservatory. Here they make grand ornaments, for they were in the highest state of health and luxuriance, about 20 inches high and as much through, and covered with hundreds of their bright red berries. The *Solanums* were a sight to see, not merely one or two solitary plants, but a large batch, and every plant perfect.

The *Begonia* plants were very good ones, and as I enquired of Mr. Lott what kind of treatment they received, I could not discover any special system of culture that had been adopted, except unremitted attention to matters of detail, and well-directed skill brought to bear on their culture. The plants were full of vigour, loaded with gorgeous flowers, while the seedlings of the present year were grown into handsome specimens. *Quintin Read.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By BAILEY WADDS, Gardener, Birdsall Gardens, York.

EXOTIC FERNERY.—Some care will now be required to make this department attractive, and a change should frequently be made in the arrangement of the plants so as to give freshness. *Adiantum Farleyense*, *A. Williamsi*, *A. gracillima*, *Davallia elegans*, *D. Mooreana*, *Gymnogramma chrysophylla*, *G. peruviana*, *Platynerium alcorni majus*, *P. grande*, *Pteris argyrea*, *P. cretica alba lineata*, *P. tricolor*, *P. serrulata cristata*, *Woodwardia radicans*, and other good winter decorative Ferns should be placed where their beauty may be seen. Remove decayed fronds and give careful attention to watering; syringing may be dispensed with unless in the case of rustic walls, pillars, or arbours, in which Ferns and Lycopodiums are planted which will require a thorough watering about once a week—this and other watering should now be done early in the day. Where much cutting of *Adiantum cuneatum* is required, the plants are better when grown in 6 or 8-inch pots, cutting the whole of the fronds of a pot or pots as wanted, old and young fronds together, the cut-over plants being then placed out of the way, and kept rather dry until required for starting in the spring. This plan keeps the specimens in better condition. A temperature of about 55° by night, 55° to 65° by day, will be sufficient at this season, a strong heat in the hotwater-pipes being avoided, and the floors should be covered with coarse sand or fine gravel, and should not be swept with a brush. Air should be afforded when possible. Baskets of Ferns will need carefully watering before they get dry; and hardy Ferns be kept as cool as possible, but frost excluded, and not much water afforded them. Deciduous Ferns stowed away under staging will keep in good condition if laid on their sides till starting time in the spring if the house is a cool one.

LILIU AURATUM, L. HARRISI, L. CANDIDUM.—Batches of these Lilies that were potted early may be pushed on in the forcing-house, encouraging them with waterings of liquid-manure, and keeping them clean from green-fly. A succession of crowns of Lily of the Valley should be introduced every ten days. The principal stock of named Hyacinths, Tulips, Narcissus, Jonquils, and other bulbs for early spring display should now be occupying a good position where their wants can be attended to at all times, and where they can obtain light and air to keep them strong and healthy; they must not be allowed to get dry at any time, and manure-watering will do them good.

LACHENALIA TRICOLOR AND ANEMONE JAPONICA should be elevated on pots to keep them from being drawn, and great care must be taken with the watering. *Hellebores* and Christmas Roses, potted and placed in a warm house at the beginning of the month, are now a mass of flowers, which will last a long time if taken to a cool house. *Cyclamen* will require careful watering now, but do not water over the crowns, and they will be benefited by some good hand-manure being afforded. When gathering the flower pull them out—do not cut them; the plants like a little shade when the sun is bright, and a free circulation of air during mild weather; a temperature of about 50° by night and 55° to 60° by day is suitable to those that are in flower.

CINERARIAS will now be coming into bloom, and may be afforded weekly waterings of clear root-water, and abundance of air when mild. They also like a little shade from bright sunshine, and a span-roofed house suits them best at this season. Keep them clean from aphids, and free from mildew.

BOUVDIAS are flowering strongly, and for a long time this season; large plants that were grown outside and potted up in September have given abundance of good flowers, and have been standing in a temperature of about 45° by night and 50° to 55° by day; they keep clean and give better flowers in colour and texture when not given much fire-heat. They require a little more care in watering when standing in a cool-house.

ZONAL PELARGONIUMS.—To keep up a succession of flowers these require moving on in batches, and they require a temperature of 55° to 60° by night, 65° to 70° by day, with a good circulation of air to keep the blooms dry. Remove decayed leaves and flowers, and watersparingly. For winter-flowering scarlet varieties grow John Gibbons, E. V. Raspail, and Henri Jacoby.

CHRYSANTHEMUMS.—Two very pretty useful varieties, that keep their foliage well, and are useful for flowering in masses on untrained plants late in the season, are *Roseum superbum*, Japanese, and the single beautifully sweet-scented variety, *Mrs. Langtry*, silvery-rose colour; both of them are very beautiful at the present time.

THE HARDY FRUIT GARDEN.

By T. TURTON, Gardener, Maiden Erlegh, Reading.

ORCHARD TREES.—The cold weather usually experienced at this season, which makes the operations among the fruit trees in the kitchen-garden unpleasant, may be taken advantage of to examine and carry out what is necessary among orchard trees. Any old trees which may have been neglected as regards the thinning of the branches and the preserving of an open crown, may first be taken in hand, thinning-out branches where they are crowded, but preserving the symmetry of the trees. Young trees which may have fruited well should also have their branches thinned out a little, and in such a way that sunlight is freely admitted to all parts. Trees of a pendulous habit should be encouraged to ascend by pruning back growths intended for the leading branches, at the point where they begin to bend over. That fine orchard variety *B. abant Bellefleur*, requires special attention in this respect whilst it is young; the long and slender branches being more disposed to spread out horizontally, or bend downwards than ascend. Thin out any branches which chafe others, and trees of a straggling habit like *Peasgood's Nonsuch* should have the longest, or all the branches, if necessary shortened back a good distance, thus encouraging a compact head, which will prevent the fruit from being whipped and damaged by wind. Worthless sorts of Apples or Pears, if the trees are aged, I prefer sawing the heads off now, the trees being allowed to break into growth; and this is thinned in the summer to the proper number to form a head,

and these branches are whip-grafted the following spring. In the case of younger trees, the sawing-off of the head should be left till grafting-time.

CANKER.—In Apple trees that are old, not much can be done to arrest canker beyond the top-dressing the roots as recommended in a recent Calendar; and the trees cleared of branches that have died from this malady. Where the disease has started in orchards of younger trees, the cankered parts should be scraped clean and cut down to the sound healthy wood, and dressed with Gishurst compound-soap at the rate of 4 oz. to one gallon of water, and clay to bring it to the consistency of paint, and sufficient soot to darken the colour, using a stubby painter's brush. The Gishurst will kill the insects which may have escaped the scraping out, and deter others from harbouring in the damaged parts.

AMERICAN BLIGHT.—Where trees are infested with this pest, no pains should be spared in trying to exterminate it, or they will soon be ruined in health. The past summer seemed specially favourable to its spreading. The best means to employ against the blight are those that contain petroleum or Gishurst compound-soap at the rate of 4 oz. to the gallon of water, to which half a wineglass of petroleum is added, the whole to be kept well mixed together.

THE KITCHEN GARDEN.

By H. O. PRINSEP, Gardener, Buxted Park, Uckfield.

POTATOS.—It will soon be advisable to plant these more extensively where heated pits are available, so that they may be ready for table early, in order that the pits may be planted with Melons and Cucumbers. If the beds are made up of fermenting material, avoid too high a temperature to begin with, as it has a tendency to cause weakly growth. Batches of sets should be placed in a warm house to encourage them to sprout, which will save a week or more. Earth-up any that are sufficiently advanced, choosing fine days for the work if the lights have to be removed during the process. If this be previously warmed at the time of planting to the same temperature which the Potato sets have been growing, it will prevent any check in growth.

CAULIFLOWERS.—A pinch of seed of Early Forcing may now be sown, to produce plants for growing in frames. When the seedlings appear above the soil, keep them exposed to light as much as possible, to prevent them damping. Any in the open ground ready for use should be lifted and taken to the vegetable-house, and those not so advanced should be stored in a cold pit, if there be any signs of severe weather. Such varieties as Snow's Vanguard and Autumn Mammoth should receive special care.

CARROTS.—During the late mild weather Carrots on hot-beds made good progress; another sowing should now be made, to keep up a succession. Any that were sown in the open borders in the autumn should have a little litter thrown over them, should the frost be severe; and any Turnips that are in the open ground will be the better for a little protection during severe weather.

SEAKALE roots must be placed in heat to keep up a supply, but do not make too large batches, as this is a vegetable that must be used as soon as ready.

SALADS.—Mustard and Cress will now be in great demand, so that frequent sowing should be made. A few days will suffice to bring it forward if placed in heat. The soil should be changed for each sowing, however, otherwise it will not grow satisfactorily. Continue to blanch Endive, Dandelion, Chicory, and Lettuce. The latter has been exceptionally good lately from the open ground.

GENERAL WORK.—All that can be done outside to keep the place tidy, such as removing decaying vegetable, &c., should be done. Keep all small growing crops free from any accumulation of leaves brought there by rough winds, and if there be any need for protection, see that it is given in the most efficient manner. The receipt of the seedsman's catalogues reminds us that it is time to prepare for the ensuing season, and that those who have time should prepare their orders, and send them in early.

FRUITS UNDER GLASS.

By M. TEMPLE, Gardener, Carron House, Falkirk, N.B.

PINES.—Where adequate means exist to supply Pines in succession for the table all the year, the present is a suitable season to re-arrange the plants

which are to fruit during May and June; and if tanner's bark or the leaves of Oak and Beech are to be used for bottom-heat, these materials should be placed in a fermenting heap, and be kept in a dry state ready for use. The old fermenting material should be removed well from the sides, in order to admit of a good addition of new material, which should be thoroughly mixed with such of the old as is retained. New tan will often heat very intensely, so that it is a matter of necessity to lift the pots on to the surface of the bed to prevent burning the roots; and as all sudden extremes of temperature are harmful, this is a matter of great importance. Plants showing fruit should be placed by themselves, and those which are to start during the present month should be arranged by themselves apart from the rest. The temperature of this division may range by artificial heat from 65° to 75°, with a fall of 5° during very severe weather, and a rise of 10° with sunheat. The atmosphere of the house should be kept in a moist state by sprinkling walls, floors, and the plunging material, but never applying so much moisture as to cause drip from the roof. Succession plants may remain at a temperature of 55° to 60°, giving air always at the apex of the lights whenever it may be safely admitted.

VINES.—All Vines should now be cleared of their crop of fruit, which should be bottled and stored in the grape-room. Keep this room dry, and avoid cold draughts, as these cause shrivelling, and light removes the colour from black Grapes, so the room should be darkened. The pruning should be finished as soon as possible after cutting the crop, the woodwork and glass washed, and the surfaces of the borders renewed as formerly advised, maintaining the vineries cool and dry. Where two or three vineries exist, the present time is generally preferred for starting the earliest one, and the outside border should be protected, for which there is nothing better than glass placed over dry litter. House-tiles are sometimes used as protection with good results. If the Vines are young, and they have not been previously forced, forcing ought to be slow at the first; whereas Vines which have been often forced early may be started at 50° at night, with a rise to 60° with sunheat. Let the water which is used for syringing the Vines always be warmer than the air of theinery. Vines started in the month of November, if showing the bunches, should be examined, the best-placed bunches being retained, that is, those that are near to the rods, as these are the more compact and best formed. Disbudding should have early attention, and in doing this, one shoot should be left on each spur, unless the latter be long, and then one close to the rod may be left, which will form the new spur another year. The strength of the Vines should always be considered when deciding on the weight of the crop to be taken, the weight of the bunches, as well as their number, being taken into account. The stopping of the shoots need not be done hurriedly or severely, and two or three leaves beyond the bunch is close enough at the first operation, and afterwards the shoots may be stopped at one leaf, but carefully avoiding all crowding of foliage. The temperature may rise from 60° to 65° with fire-heat, sun-heat being utilised by closing theinery early in the afternoon. Syringing may cease, or at least it should not be done too often, a moist but not stagnant atmosphere being maintained.

POT VINES.—These will require special care in the matter of affording water at the roots, the avoidance of crowding of the shoots and leaves, and ventilation when the Vines are flowering. The use of a camel's-hair pencil about mid-day will be useful.

PEACHES.—Just before the blossoms begin to open let the house be fumigated two nights in succession, and do not use the syringe while the fruit is setting. Afford air early in the day.

THE FLOWER GARDEN.

By T. H. CRASP.

HELLEBORUS NIGER (THE CHRISTMAS ROSE).—The flowers of this plant will now be emerging from the soil, and a handglass or a cloche may be placed over them. It is well to make preparations soon for the potting-up of Pelargoniums and other bedding plants, first forming a list of those which are needed, and the number; and if the stock of them is insufficient to meet requirements, propagation may commence at the turn of the year. The Pelargonium cuttings are usually the first that are taken, after the plants have been long enough in gentle warmth to induce growth in small degree. The cuttings

may be dibbled into well-drained pots, pans, or shallow boxes of light sandy soil, and after affording them a watering with a fine rose water-pot, they may be placed in a forcing-house or propagating-pit. The cuttings of *Lobelia erinus* varieties, *Ageratum*, *Heliotrope*, *Iresine*, &c., may be struck in a similar manner, only with the addition of a half-inch layer of sharp sand on the surface of the soil; but there is plenty of time yet for these easily-rooted plants.

FUCHSIAS, which are coming largely into use as summer bedders, may have, if a further stock of plants be required, a few of the plants kept over from the autumn placed in heat after slightly pruning them by cutting off the extreme tips of shoots, and thinning out the weakest wood, picking up the crust of soil and thoroughly watering them. Syringe them every day—twice or thrice if the day is sunny, and when new shoots two or three joints long are made, cuttings may be taken. Insert these after proper trimming, in boxes or pans, and place in bottom heat of 80° in a dung-bed frame, or a bed of leaves in a forcing-house or other place sufficiently warm and moist. When placed in any place other than a close frame, a glass covering is needed. Flower seeds of last season may now be cleaned, and many articles needed in the flower garden got in readiness, such as sticks and stakes, labels, layering pegs, &c.

THE ORCHID HOUSES.

By W. HOLMES, Gardener, Pickering Lodge, Timperley.

THE year 1893 has been remarkable, and one which will not be readily forgotten by Orchid growers, as we have been favoured with much better weather than we are accustomed to. From the commencement of February we had an abnormal amount of sunshine, greatly favourable to Orchid cultivation, and very little fire-heat was needed until a few weeks since, besides which we have been able to admit abundance of fresh air in all the divisions. The coming season should be attended with an abundance of flowers, especially on such as *Cattleyas* and *Dendrobiums*, the pseudobulbs of these being so well-matured. During the last two months we have had very little frost here, and I may say no fogs at all such as we usually have often had to contend with during November. The *Laelias*, *Calanthes*, and *Phalænopsis* are all looking well, and the collections of *Odontoglossum crispum* are looking better than they have done at any time during my charge here, and they will flower much earlier, the spikes are stronger and have more substance in the flowers. This I account for by the extra early ripening of the new pseudobulbs. I may say, our *Odontoglossum*-houses are due south, so they have had the full benefit of all the sunshine, and to my mind they like this, providing that damping and shading be carried out thoughtfully. *Phalænopsis amabilis*, *P. grandiflora*, *P. Schilleriana*, and others grown in the same house, have also done remarkably well, and could we only have the summers or seasons such as this has been, no doubt we might run our Belgian friends a very close race. The early-flowering *Cattleya Trianae*, should have the benefit of the lightest part of the *Cattleya*-house, and, along with *C. Percivalliana*, be placed in the warmer end, kept a little warmer than the rest, the flowers come much freer, and open with more substance. *Laelia purpurata* will be finishing up their new pseudobulbs, but must not be dried too suddenly; some may be later in finishing, and must have attention paid to them to induce them to finish up as early as possible so as to give them a good rest. *Cattleya Warneri*, if placed at the cooler part of the house, as advised in a previous Calendar, and water withheld, will now be starting into new growth, and may be given 5° more warmth, so as to encourage the new breaks to come away freely. This plant does best in a teakwood basket hung close up to the roof-glass, and as they are taken down to start, should be well soaked with water; being a mass of roots and dry peat—an ordinary watering will not penetrate it. *C. maxima* will also be on the move, and may be placed alongside the *C. Warneri*. *C. Mossiae* and *C. Mendeli* should by this be fully made up and at rest; very little water will be needed for these at present. *Phalænopsis amabilis*, *P. grandiflora*, *P. Schilleriana* should now be kept very quiet, and only sufficient water and heat to keep the sphagnum green, with as much bottom ventilation as is safe to give. The temperature should be at the lowest at the present time. The earliest started *Dendrobiums* will now require more water, as the flower-buds will soon expand, and the new growths are growing freely.

EDITORIAL NOTICES.

Local News.—Correspondents will greatly oblige by sending *be* the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should to careful to mark the paragraphs they wish the Editor to see.

Advertisements should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES

MONDAY,	JAN. 1	Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	JAN. 2	Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	JAN. 3	Great Sale of Japanese Lilies, &c., at Protheroe & Morris' Rooms.
THURSDAY,	JAN. 4	Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	JAN. 5	Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—36°.7.

NOT many years can show so well-filled a record in matters horticultural as that which is now at its very last ebb. It has been more than usually a busy one. "Events" have not only been numerous—they have been important, and the net result is decidedly to be summed up in the word "progress." In so saying we are alluding to horticulture generally, not to the commercial side of it in particular, as that, important as it is, is after all, only an "incident!" First of all—English fashion—we must speak of the weather. Let the scoffers laugh, what topic interests the gardener more than the weather? And, again, we may ask, how many of the present race of gardeners can recall such a season as that which we have passed through in 1893, and how many are likely to do so again? February was a wet month, but from March till July sunlight and temperature were vouchsafed to us to an extent beyond the experience of the present generation, and with scarcely a drop of rain; and the meteorological conditions went on in this fashion, only slightly modified, throughout August, September, and part of October. Stimulated by the unaccustomed warmth, excited by the unwonted light, plants rushed into bloom prematurely. May was as July. Two crops of Apples were not uncommon on certain trees, and one instance, at least, came under our notice where a third generation of Apple blossom appeared. A second flower of a Narcissus was sent us from a bulb which had flowered in the ordinary course, and several similar cases were recorded. Two crops of Strawberries were common, and a similar redundancy was observed in places in Peas and in Potatoes. The season was eminently favourable to the fruit crops, at least so far as quality is concerned, Apples and Pears being unusually fine, though many, especially Pears, ripened out of their normal season. Some things that rarely flowered at all luxuriated in this season; but for others the conditions were as decidedly unfavourable. It was a valuable lesson as to the effects of climate on vegetation. Some one will, we hope, gather the scattered records together and publish them for the benefit of posterity. Perhaps the Roses showed the effect of the season as much as any one class of plants. At any rate, the Rose shows were much below the average. Apprehension was felt as to the result on the Chrysanthemums; but singularly to relate, the Queen of Autumn held her court at the usual time and with more than usual brilliancy. The disbudding may have accounted for this preservation of the usual rhythm.

As to the other principal shows of the season,

the Temple Show and the great Orchid show at Manchester were highly successful, though we greatly missed the elegant grouping of continental displays, and which seems to be unattainable here. As for new plants, in one sense the most interesting of all, we look for them more particularly at the fortnightly meetings of the Royal Horticultural Society. There would be little means of examining them if they were exhibited amid the crush and turmoil of a "big show." Unfortunately, little encouragement is given to "New Plants" now-a-days, and a "Botanical Certificate," which should be the highest award, is looked on as of very low estate. That is taking a merely mercantile view of the case, a view appropriate in a sale-room or a business establishment, but out of place when, as at the Royal Horticultural Society's exhibitions, they should be judged on their intrinsic merits not on their conventional value.

The fortnightly shows at the Drill Hall retain their popularity with exhibitors to such an extent that on some occasions the space, considerable as it is, is insufficient. The show of the Society at the Agricultural Hall was an interesting experiment, but the results, we fear, were not encouraging. As a show it was excellent and varied. Moreover, some attempts were made at more artistic arrangements, sufficient to show that the repulsive formality of the average Rose show, for instance, is by no means an absolute necessity. There was ample evidence at the shows this season that exhibitors of Carnations, Dahlias, Pansies, and Chrysanthemums, are at last beginning to find out that if they want to show their flowers to the best advantage, they must not throttle them with card-board collars, nor flatten them down on boards till they look like paving-stones in a side-walk.

The opposite extreme was exemplified in the donkey-decorating, car-adorned procedures of a society which in this particular does not act up to its lofty title. Were such things practised as part of the show at Earl's Court or the Crystal Palace, they would be not inappropriate. It is alleged by some that pure horticulture does not pay, so that some adventitious excrescence of this kind is supposed to be necessary to fill the coffers. This may be the case in some village festival; but on the other hand, the experience at Earl's Court this year and last, as at South Kensington in years happily past, show that horticulture is squeezed out, and goes to the wall when allied to other more highly spiced forms of entertainment. Indeed, horticulture at such places is tolerated only as a "side show," and looked on by exhibitors as chiefly a means of getting money.

Before leaving the subject of shows, we must make passing allusion to the great World's Fair at Chicago. We believe we are not overstating the case when we say that so far as the horticultural department was concerned this was, barring a few exceptional exhibits, such as the Cannas, a failure. There were abundant reasons for this, some of which were foreseen, and, in any case, it adds another illustration to our contention that horticulture, as such, stands a bad chance as one element in a variety show.

As a striking instance to the contrary, and as an illustration of how proudly horticulture can hold its own when not weighted down by other things, we may allude to the Quinquennial celebration at Ghent which was held in the spring. This show was larger than ever, the grouping admirable, the interest more varied, and the attendance of notabilities from all parts of the world larger than usual. Unfortunately,

the political unrest of Belgium at the time interfered somewhat with the success of the Exhibition, and added a terrible weight of care, and an irksome amount of labour to the already overtaxed officials. It is hard enough work to organise and manage a great exhibition of this kind, but when military duties and night patrols were superadded, it may readily be conceived how great the strain was—and yet from the officials themselves not a murmur was heard; their work was done as thoroughly as if it had been effected under ordinary conditions, and the genial hospitality and courtesy to strangers were as remarkable as ever. One public reception, however, at the Town Hall had to be abandoned, because the Municipal buildings were, for the time, devoted to less peaceful ceremonies.

A large contingent of English horticulturists, headed by the President of the Royal Horticultural Society, visited Ghent on this occasion, and for their benefit we organised a series of articles on some of the principal of the 200 nurseries round Ghent as well as on some of those in Brussels and Bruges. This originated a discussion which is even now not terminated, as to the relative merits of British and Belgian cultivation especially of Orchids. As to general principles, there is, of course, no difference; in the matter of details there are differences attributable, as we believe, mainly to diversities of climate.

Early in the year an agitation was instituted against the excessive and disproportionate charges made by the Railway Companies for the conveyance of goods, especially of farm and garden produce. The case was proved up to the hilt, the charges made by the Railway Companies were shown to be arbitrary, capricious, and well calculated to destroy the only branch of agriculture which has been conducted to a prosperous issue in this country of late years. It was shown that the cost of conveying goods of this character from Kentish orchards to London and Manchester, and other towns, was more—not in proportion, but absolutely greater than the charges made for conveying the same class of goods from Boulogne to Folkestone, and then to London, over the same line of railway! Nay, even agricultural seeds from Chicago could be sent over here, a distance of 4000 miles, cheaper than they could be sent from Liverpool to London. All this, and much more to the same effect, was told to the President of the Board of Trade by a joint deputation of the Covent Garden salesmen and the growers for market. As the facts are of the greatest importance, we may refer the reader to our issue of March 4 for a plain statement of the facts of the case.

The extraordinary character of these statements elicited on this occasion came as a surprise even to some who fancied themselves generally familiar with the extent to which market gardening had developed of late years. The figures made public were so large that we were convinced that the horticultural fraternity, to say nothing of the general public, had no adequate idea of the commercial importance of this great industry, nor of its rapid development during the last few years, precisely at the time when the agricultural industry of the country has been at its lowest. For these reasons we despatched a representative to visit several of the leading market gardens in the vicinity of London, as illustrations of the whole. His reports were published in our columns in the spring, and constitute a body of evidence plainly confirmatory of what was said at the Board of Trade, and strikingly illustrative of the immense



FIG. 123.—*LÆLIA FINCKENIANA*: FLOWERS WHITE, LIP MARKED WITH ROSEY-PURPLE. SEE P. {06.}

importance to the country of this branch of commercial enterprise. When, in addition, we take note of the capital involved in the ordinary business of the nursery and seedsmen of the kingdom, we shall have an aggregate to show that horticulture takes, not as most people fancy, a relatively unimportant position among the commercial enterprises of the kingdom, but a very high one.

The extension of horticulture affords one powerful reason for the development of what is called technical education. The County Councils have recognised this, and practical lectures and demonstrations are now, for the second season, in progress in the rural districts. No practical art can be effectively taught save in a practical manner. Lectures and demonstrations, nevertheless, may be very serviceable in diffusing knowledge, exciting attention, and enabling the hearers to teach themselves by practice and observation. They are a means of affording information to a class of persons who would otherwise be unable to obtain it, a class to whom books and papers are relatively useless. But it is not to such lectures and demonstrations that we must look for progress. That can only be expected as the result of a thorough grounding in the principles combined with adequate training in the practice.

If we are to confine ourselves simply to teaching handicraft, we shall merely increase the number of average practitioners, of whom there are too many already; there will be a larger number of workmen but no increase of knowledge, and consequently no increase of work. The present race of practitioners cannot, so far as mere handicraft goes, hope to do more than equal their forefathers; any progress that may be made must depend upon the better appliances at their disposal, and upon increased knowledge. Hence, whilst the County Council lectures are doing good service in their way, something more is required, which is only to be got at in well-organised schools and colleges, where knowledge is imparted as well as manual dexterity acquired. In the meantime, who is to teach the teachers? It is certain that not everyone is a born-teacher; the best practical gardener may be very inefficient as an instructor of others. To meet this difficulty, the Essex County Council have instituted classes for teachers, classes in which the general principles underlying successful cultivation are thoroughly instilled to begin with. Even if nothing else be done, this may be expected to obviate many a mistake, prevent much loss of time, and much needless expenditure of money. Edinburgh, too, is turning her splendid opportunities to account in educational directions. In this connection the visit of the Scottish Arboricultural Society to Windsor and the New Forest may be noted as one of the prominent events of the year.

A sense of the necessity for a knowledge of general principles is, indeed, gaining ground, and it affords proof of the statement with which we set out that we are progressing. Compare the books and journals of to-day with their predecessors even ten years ago, and it will be at once obvious how much more attention is given to the diffusion of knowledge of principles. People are beginning to find out that "Science" and "Theory" are not necessarily or entirely abstract ideas, but that they are to a large extent synonymous with knowledge that may be turned to practical ends. Tell a would-be gardener he requires to know something of science, and that theory may be of service to him, in spite of the old adage about the ounce of practice outweighing the ton of theory, and he will not appreciate

what you say. Tell him it is desirable he should acquire knowledge, and he will at once assent to the proposition!

Of books and memoirs marking progress in horticulture we may mention as having been published within the year, the first volume of the *Kew Index*, to which we have alluded so recently, that we need not here occupy space with further reference to it. Another book of reference for all time is *Sargent's Silva of North America*, of which a fifth volume has lately been published. Of memoirs we may make passing allusion to the excellent piece of work on Town Fog effected by Professor F. Oliver under the auspices of the Scientific Committee, and published in the *Journal of the Royal Horticultural Society*. In France, M. Georges Truffaut has added much to our knowledge of the chemical nature of the soils in which plants are generally cultivated, and as his researches are founded on practical experiment in the plant-houses as well as in the laboratory, it is certain that much benefit will accrue therefrom to practical horticulture.

On the other side of the Atlantic, Dr. MACFARLANE is prosecuting his researches on the minute anatomy of hybrids. These were begun in Edinburgh, and the results have been published in the *Transactions of the Royal Society* of that city. Dr. MACFARLANE's researches (see our issue for January 7, p. 16) have been made on garden plants of much interest, so that their practical value is also beyond dispute.

The Rothamsted papers on Wheat culture and those connected with the Jubilee of that Institution, though not horticultural, are, nevertheless, full of instruction for the thoughtful cultivator. In connection with the Jubilee, a knighthood was conferred on Dr. GILBERT. His claims to honour are acknowledged on every hand and in every country; but there is grotesque inappropriateness in the fact that the same award is made to a man like Sir JOSEPH GILBERT, and to a man whose only claim to distinction is his wealth, to a city magnate, or to a party politician whose title to recognition is the amount of money spent in the service of his party. Party gratitude is one thing. National recognition is, or should be, quite another. We do not wish to disparage either, but the distinction between the two should be drawn.

The gardening charities, it is said, are doing fairly well, but when approved candidates very largely outnumber those who can be elected, we cannot but feel that the gardeners of the country do not support the committees of the several institutions as energetically as they might do, that they trust too much to the liberality of outsiders, and do not take a fair share of the work and responsibilities which now devolve on a few.

The death-roll has this year been large, and its importance to horticulture is not to be measured in numbers only. Among our own contributors we have lost the great botanist, ALPHONSE DE CANDOLLE; and WESTWOOD, the celebrated entomologist, one of our very early contributors. The death of Professor BENTLEY, so long known in connection with the "Botanic," is announced as this sheet is passing through the press. LAXTON, DODWELL, C. VERDIER, and GUILLOT represent a class of raisers to whom horticultural progress owes not a little. ERNST BENARY is a name known and respected throughout the commercial world. CHANTIN, of Paris, JOHN WATERER, and HUGH LOW were hardly less widely known. SAMUEL BARLOW

was an enthusiastic gardener and one beloved of many. But we need not prolong the list. Whilst we mourn, we rejoice that they were privileged to do so much; whilst we remember them with gratitude, may we look forward hopefully to the future. Incited by their example, may we each in our way "Follow Light, and do the Right."

OUR ALMANACK.—Secretaries of Societies and others, are earnestly requested to forward immediately, the dates of Show Fixtures and Meetings of Botanical and Horticultural Societies of any kind for 1894, for insertion in the Almanack, to be published in our issue for January 6.

LÆLIA × FINCKENIANA.—Our illustration (fig. 123, p. 805), gives a representation of the beautiful natural hybrid *Lælia*, first flowered by C. W. FINCKEN, Esq., of Hoyland Hall, Barnsley (gardener, Mr. J. MILBURN), and described in the *Gardeners' Chronicle*, February 18, 1893, p. 194. It was again exhibited at the Royal Horticultural Society before the Orchid Committee on December 12 last, when it was awarded a First-class Certificate. The flowers have some resemblance to those of *Lælia anceps* Dawsoni, but are smaller, and it will be seen that the form of the labellum is quite different from that of the same organ in any variety of *Lælia* anceps. The plant itself would easily pass, when not in flower, for *Lælia autumnalis* alba, or a strong form of *Lælia alba*; and one or other of those species, with a white form of *L. anceps*, it is suggested, has taken part in its production. The flowers are pure white, the base of the lip having some purple lines extending half-way up the side-lobes, with three yellow ridges extending towards the front, and a crescent-shaped rosy-purple colouring on the front lobe, which has a broad white margin.

THE CLIMATE OF THE NORTH COAST OF WALES.—Mr. A. O. WALKER in an address to the Chester Natural History Society, in which he compares the climate of the Welsh coast near Llandudno with that of Greenwich, sums up by saying that it is hotter in summer and colder in winter near London, whilst the rainfall is greater on the Welsh coast. Near London the average rainfall is 23.3 inches whilst at Llandudno it is 30.7 inches. At Colwyn Bay the rainfall is given as 31.10 inches on an average, whilst in the neighbouring mountains 124 and 138 inches have been measured. As to the economical effects of the difference between the south-east of England and North Wales and Cheshire districts, Mr. WALKER says:—

"Agriculturally, this difference means that the former is a Wheat country and the latter a dairy and stock-breeding country. And this again means that in the former the competition of the cheap land of America, and the cheap labour of India, has ruined farmers, impoverished landlords and clergymen, and thrown thousands of acres of land (temporarily at least) out of cultivation, with all the concomitant distress to other classes implied by these conditions. In the latter, the distress has been comparatively trifling, and that, I think I may venture to say, in direct proportion to the amount of atmospheric humidity. Here, too, the insect pests that cause serious injury to farmers and gardeners, and to the south-east, are comparatively innocuous. Again, the same comparative immunity (compared with our southern neighbours) extends to gardeners. In Cheshire, certainly, the Gooseberry sawfly is often a pest, but I have never seen it at Colwyn Bay. In the south the havoc wrought among fruit trees by the larva of the November moth was very serious in 1890—has any gardener here ever suffered seriously from it? In short, I cannot name a single insect that does serious damage to farm or garden crop on our North Wales coast! But, on the other hand, we miss those additional degrees of solar heat to ripen both the wood and the fruit of our Pears and Apples, and it is vain to expect either the quantity or quality of fruit that the Kentish gardener grows. But much may be done by the choice of sunny sites and by modes of training trees, so as to give wood and fruit the greatest possible exposure to the sun; and the greater freedom from severe spring frosts is in our favour. On the whole, we of the north-west have reason to be thankful for our moist atmosphere."

M. BURVENICH.—For thirty-five years this gentleman has been employed in doing work in Belgium of a character analogous to that inaugurated

here only last year under the auspices of the County Councils! The Belgian Government has awarded to M. BURVENICH the civil cross of the first class in acknowledgment of his labours, and some of his old pupils and friends propose to offer him some testimony of the value they put upon his services, and of their respect for his character. The subscription is limited to 50 centimes, so that there should be a large response.

"THE JOURNAL DES ORCHIDÉES," whose approaching suspension was announced some time since, will, we learn, not suffer that fate, but will continue to appear regularly.

MAPLES.—FRITZ GRAF VON SCHWERIN has published separately his essay on the "Species and Varieties of the genus *Acer*," which originally appeared in the *Gartenflora*. The Count describes no fewer than 105 species, many of them with numerous varieties. Outline figures of the leaves are given.

FLOWERS FOR SENATORS.—The practice of sending flowers to the Senate on the opening-day is increasing each year. On Monday last there were few desks which were not covered with some kind of floral remembrance. Senator VOORHEES was the recipient of a mammoth horseshoe of Meteor Roses; Senator TURPIE came in for an open book of the same flowers; Senators HANSBROUGH, DOLPH, HARRIS, and VANCE were to be seen carrying out large handsome baskets of La France and Kaiserin. Senator STEWART's desk was covered with a piece which caused some merriment among the senators—it was in the shape of an obelisk made of red and white Roses; on one side were three large white Chrysanthemums, and on the other were three equally large yellow ones; this reference to the monetary situation brought smiles to the faces of Senator STEWART's neighbours, who, in turn, went over to get a sniff at what they termed his "bimetallic bouquet." *Florists' Exchange, Washington.*

ARSENITES AS INSECTICIDES.—"The value to this country of arsenical poisons for the protection of crops against insect injuries can hardly be over-estimated. Arsenic in its various combinations is the great panacea for all the evils inflicted on man by leaf-eating vermin. Through its use the value of our annual food supply is increased by many millions of dollars," so says Mr. GILLETTE in the current number of *Insect Life*. In this country we are extremely chary of trying experiments or even of adopting processes when their value has been proved. In this case the reluctance to adopt the method is naturally enhanced by the risk of accidental poisoning. It will not do to entrust such dangerous substances to an ordinary labourer.

BISULPHIDE OF CARBON.—We used to hear much of this as a cure for Phylloxera, and it is certainly an excellent insecticide. For destroying insects which attack herbaria, furs, or woollen garments, it is well suited. The articles are placed in a chest lined with zinc and the lid of which fits into a groove filled with water, so that the chest shall be as nearly air-tight as possible. The packets of plants or other articles to be rid of insects are merely placed in the chest together with the bisulphide, the latter fluid being contained in zinc vessels 10 cent. long, 6 cm. wide, and 9 cm. deep, and the plants are allowed to remain four or five days, by which time the fluid will have evaporated, and killed every insect; even the eggs are not safe against the destroyer. No injury is done to the plants or furs, and the disagreeable odour soon passes off. One caution must be given—to keep the bisulphide out of reach of fire or candle, as the vapour is very inflammable. The operations should, therefore, be carried out in a room or shed to which neither light nor fire has access. M. ALPHONSE DE CANDOLLE first called our attention to the matter, which is the subject of a note in the current number of *Insect Life*.

RAINFALL AND LEAF-FORM.—Some interesting observations, which have been carried on at the

mountain station of the botanic garden at Buitenzorg, Batavia, by Professor STAHL of Java, are published in the *Botanische Zeitung* for May 10. The station is about 4,500 feet above sea-level on a part of the volcanic gerdch in Java. No one who has seen the suddenness with which rain falls in the tropics, and is disposed of by the luxuriant foliage of a hillside, can fail to be interested in this investigation. Some of the adaptations are among the most curious in the whole range of vegetable forms, especially those which are connected with the rapid drying of the leaf itself in a comparatively moist atmosphere. "Ingenious devices appear to be adapted" by tropical plants to protect themselves from the very heavy blows from raindrops in the tropics. This observation opens out an endless vista for speculation, and perhaps for research.

HOLLYHOCK FUNGUS.—Hollyhock growers will remember the disastrous effects of this fungus a few years since. After decimating the Hollyhock it disappeared, or, at any rate, ceased to inflict much damage. It must not, however, be thought that the enemy is annihilated. Lately, at Folkestone, where *Malva sylvestris* is common in the greensand undercliff, about one plant in every twenty was infested with the fungus, and perishing in consequence. It was curious to see how individual plants in a patch were affected, leaving the neighbouring plants apparently and perhaps only temporarily intact. At any rate, this attack on isolated specimens at once suggested that if they were taken up and burnt immediately the mischief was observed, that the disease would not spread. *Lavatera arborea*, the Tree Mallow, which also flourishes in the locality, probably as an escape from cultivation, does not appear to be affected with the fungus. Sulphide of potassium in solution would probably be effectual in checking the progress of the fungus.

INFLUENCE OF EXTERNAL CONDITIONS ON THE FLOWERING OF PLANTS.—The conditions which promote flowering are not necessarily dependent upon light; this is not essential to the development of the blossom, though it is so to the capacity of the plant to produce flowers, as it has a tendency to promote the formation of reproductive rather than of vegetative shoots. As a rule, the brighter the light the deeper the colour of the bloom; the ultra-violet rays are the most efficient for this purpose. With many plants, an alternation of high and low temperatures, involving a period of rest in winter, is favourable to flowering. Dryness, both in the air and in the soil, is, as a rule, favourable to the production of flowers, for when a plant has an abundant supply of nutriment, this goes to the formation of vegetative organs. Dr. F. BENECKE is responsible for these conclusions, and he gives some interesting illustrations in the *Biol. Centralblatt*, xii., pp. 609 and 673.

NOTABLE GARDENS.—Earl COWPER's Derbyshire seat, Melbourne House, famous by reason of its Dutch gardens, is, it is stated, to be let for a term of years. The gardens of OCKWELL's Manor House, near Bray, are not likely to lose in repute under their new owner, Mr. E. W. BARRY, a son of Mr. F. T. BARRY, M.P. for Windsor. Mr. BARRY, Jun., is a gentleman of refined tastes, and will doubtless see that the grounds of the historic seat he has just purchased are all that the grounds of such a place should be. A mansion in the grounds, of which the horticulturist will have scope, is that now being built on an extensive scale for Mr. GURNEY at Chalfont St. Giles.

LECTURES ON HORTICULTURE IN NORTHUMBERLAND.—A successful course of lectures, under the auspices of the County Council, has lately been concluded. The places chosen for the purpose, six in number, were at widely separate places in the county, e.g., Bamburgh, Horsley-on-Tyne, Blanchland, &c. The instruction afforded was thoroughly practical in its bearing, and framed with a view of deepening the interest of the people in gardening, and providing information on such subjects as the pruning, grafting, and general management of fruit

trees and bushes, treatment of the soil, and destruction of insect pests. These subjects were admirably illustrated by means of diagrams, the magic-lantern, chemical apparatus, and specimens of plants. Advice was also given out-of-doors where practicable. Much interest was manifested in these lectures, and the average attendance very good. *The Newcastle Daily Journal* makes the following comment:—"In the lecturer, Mr. JAMES WILSON, jun., F.R.H.S., St. Andrews, the committee has chosen a man who combines theory and practice in such a way as to be able to overcome the prejudice which exists in many against the introduction of science into such a subject."

"THE VINE AND ITS CULTURE."—M. ED. PYNAERT has published a French translation of Mr. BARRON's much-appreciated volume on *Vines and Vine Culture*. Belgium is not a wine-producing country, and its climate presents little advantage over our own, unless it may be in some parts a higher summer temperature and a clearer atmosphere. The cultural methods, therefore, suitable for the one country are for the most part equally applicable to the other. Large vinerias have been erected near Brussels, and elsewhere, for the supply of the Belgian towns, whilst the needs of Paris and the omnivorous maw of monster London have offered temptations to the grower to compete on the one hand with his French neighbours, on the other with those who supply our own market. The French, with their dislike of free-trade, have placed great obstacles in the way in the shape of heavy duties, whilst we fear the very low price obtained for Grapes in this country can hardly have proved very remunerative to the grower. This season good Grapes have been quoted, exceptionally no doubt, at as low a price as 4d. and 6d. a pound. Those, too, who see the enormous quantities put upon the London market from the Channel Islands may feel some doubt as to whether Belgium can advantageously enter our markets. But Belgium is enterprising and persevering, she is thrifty and intelligent, and these qualities will undoubtedly prove valuable aids to her in her endeavour to get a share in the supply of Grapes and other fruits to London. A translation of Mr. BARRON's book by so competent a hand as M. PYNAERT is likely to prove very serviceable. Here, we know the merit of the book, and we venture to think it will not be long before our Belgian neighbours appreciate it also. M. HOSTE, Rue des Champs, Ghent, is the publisher.

DEDICATIONS.—Some idea of the progress of garden botany and of the work of its promoters, may be gleaned from the dedications of the annual volumes of the *Botanical Magazine*. This year the volume is dedicated to Mr. HANBURY of La Mortola, as a tribute to the value of his services to scientific horticulture in creating a garden of exotic plants at [near] Mentone, which in point of richness and interest has no rival amongst the private collections of living plants in the world; and in munificently founding the Istituto Hanbury in the Botanic Gardens of the University of Genoa, the early years of which are already so full of promise for the future of scientific botany in Europe.

A GOOD EXAMPLE.—The travelling public has often had to thank the Midland Railway Company for leading the way in matters affecting our comforts and purses. It has lately reminded horticulturists of its desire to encourage their art, and that by awarding £150 in prizes to its station-masters for the best-kept platform, flower-garden, and borders. Its custom in this direction is an annual one. The highest prize has this year been secured by the stationmaster at Matlock Bath, Derbyshire.

THE PACKING OF FRUIT.—On the 2nd inst., Mr. T. H. RIDING, F.R.H.S., delivered a lecture on "Small Bush and Berry Fruits." Very properly, as we think, he directed considerable attention to the packing of fruits for market. We were recently talking to a buttermilk man. "My Irish butter," quoth he, "is better and cheaper than that I get from

Normandy; but the ladies say the Irish is dirty and slovenly packed, and will insist on having the daintily-packed produce of the French dairies." Our children could surely be taught to pack the choice sorts of fruit in a manner that would charm the eye of the fastidious, and so give to English goods the same fascination as the more artistically packed, but not better fruits of other countries exercise over the minds of people.

THE "JOURNAL OF UNIVERSAL INFORMATION," edited by M. EDWARD CURTICE, and published by ROMEIKE & CURTICE, is a novelty in the journalistic world, since it is type-written instead of printed. The result is a few (six) loose pages in a green cover. The contents include general news, chit-chat, and notices of current magazines. The fact that it is type-written may interest those specially interested in that process, and bring it more into use and favour for some purposes; but from the standpoint of the general reader this journal is neither so legible nor so sightly as a printed paper.

RECREATION-GROUND AT FULHAM.—The new grounds abutting on the Embankment, recently completed at Fulham, together with a meadow on the west side of the Bishop's residence, called the Bishop's Meadow, were on Friday, the 22nd inst., opened to the public by Mr. HUTTON, Vice-chairman of the London County Council. The meadow will remain simply as a playground, but the land lying between the moat and the river-wall is laid out in an ornate manner with broad expanses of turf (not yet laid), beds and borders of evergreen trees and shrubs, and as a means of masking the stagnant water of the moat, a raised bank of soil skirts its margin, and this, although rather narrow and steep, will, when the deciduous and flowering shrubs and half-trees with which it is planted have grown up, effectually serve its purpose, whilst preserving the charming prospect of the Palace grounds. There is one feature of the planting which will, we hope, be condemned, that of a narrow border skirting the river promenade. This border, only about 15 inches wide, is planted with dwarf evergreen shrubs in some variety, but owing to its proximity to the path, and its accessibility, the shrubs cannot possibly succeed unless secured by means of wire netting. Taken as a whole, it is one of the prettiest gardens which has yet been laid by the London County Council.

PUBLICATIONS RECEIVED.—*The Uchuba, or Vegetable Tallow* (produced in the State of Pará, from a variety of *Myristica sebifera*)—*List of Seeds of Hardy Herbaceous Plants, and of Trees and Shrubs*, Royal Gardens, Kew.—*Les Orchidées*, de M. Georges Martin.—*The Flora of Somerset*, by the Rev. R. P. Murray, Part I., with map of county.—*North Carolina State Horticultural Society*. It seems familiar to read of President van Lindley in connection with a Horticultural Society! The Report is one of unusual value.—*The State of Ceara*, by Dr. José Freire Bezeril Fontenelle.—*Enumeratio Plantarum in horto Botanico Fluminensi cultarum*.—*Dictionnaire Pratique d'Horticulture*, Nicholson & Mollet, liv. 20 (Paris, O. Doin).—*Insect Life*, vol. vi., n. 2; Riley & Howard.

PLANT PORTRAITS.

BAPTISIA LEUCOPHŒA, *Meehan's Monthly*, Dec.
IPOMŒA PANDURATA, *Revue Horticole*, December 16.
PLUM REINE CLAUDE DIAPHANE = our transparent Gage, *Bulletin d'Arboriculture*, etc., 321.
RHODODENDRON ROYLEI, *Garden*, December 16.

HOME CORRESPONDENCE.

WOOD-MANAGEMENT.—In your number for December 16 are two articles on the management of trees, from neither of which can anything of real practical value be gained. In the one upon the damage done by storm in Scotland, the chief question seems to be, how to manage plantations so that they shall not be liable to be blown down. In

the other, the writer advocates leaving the plantation so thick that it will produce bare poles, because they sell better than those which have been thinned. Neither pays any regard to the fact that different kinds of trees are different in their modes of growth, whether in plantations or as single trees, and require different kinds of management; and that plantations of two or more different kinds of trees require quite different management from plantations of one kind only. It is no doubt easy enough to grow trees so close together that they become bare poles. There was a wood here of between 20 and 30 acres of Spruce Firs which had never been thinned, clean poles, such as "S." describes the German Spruce woods to be. The January storm in 1839 blew the whole down together, a large part of them being snapped off at various heights like so many Carrots. The very few that were left standing died of starvation within the next five years. No doubt, if lucky, you may get a crop of Spruce poles a few inches in diameter that will pay well if cut down together; but if the object be to grow trees 1 foot or more in diameter that will cut into boards, it can only be done by careful thinning. And what would he say of the Scotch Fir? The young sap wood is good for nothing. On most soils it would produce no heart-wood at all if left unthinned. Larch is very generally useful at all ages both for timber and also as a nurse for other kinds of trees. I usually plant it a yard or 4 feet apart; if left unthinned for twenty years, the greater part of them would be dead and rotten, and of those left, there would be none big enough to make anything more than a rail. Of hard-wooded trees, Ash and Beech, and Sycamore and Elm, each requires a totally different management in a plantation, whether for timber or for shelter; and mixed woods very different management again. Ash runs up into poles very readily, and is valuable as such at a small size; but if required to grow into large timber, it requires most careful thinning, or it will surely be blown down. Oak is of no value whatever as a small tree; moreover, it dies if over-crowded. I need not go on; every different kind of tree requires a separate chapter, in which its peculiarities of growth must be considered, whether it be grown for profit, or for shelter, or for ornament. It is not universally true that plantation-grown Ash and Oak are of more value or pay better than hedgerow Oak and Ash. The quality of the timber of these latter is often the best, and for some purposes is the more valuable; and it may often be grown very profitably, if so planted that it does no injury to the adjoining land. C. W. Strickland, Hildenley.

ABUTILON VITIFOLIUM ALBUM (p. 783).—My experience of this beautiful shrub entirely agrees with Mr. Gumbleton's. I never knew the white flowers become blue, or the blue white; but I have known both cuttings and seeds from the blue one to produce white flowers, and vice versa. I have grown it since 1877, and have never been without it; but it is necessary constantly to get young plants by cuttings or seeds, as, like many others of the shrubby Malvaceæ, it is a short-lived species. Henry L. Ellacombe, Bilton Vicarage.

VITIS COIGNETIÆ.—It would be very interesting to know whence plants or eyes of this splendid Japanese Vine (see p. 781) could be obtained, and perhaps some reader in this country, or in America, or in Japan, will kindly supply the desirable information. The kinds of Grape-vine having highly coloured foliage are most valuable for walls, arbours, and pergolas, and are strangely neglected in modern gardens. F. W. Burbidge.

GALANTHUS ELWESI.—The first blooms of this species of Snowdrop opened on December 22, which is earlier by four days than I remember seeing them before. Last year the first blooms opened on Dec. 26. Between this variety and *G. Coreyanensis* there is just one month difference. I saw this latter in flower in the Trinity College Garden, Dublin, November 23 last. A collection of these early-flowering Snowdrops is not only interesting, but useful. How well *G. Elwesi* seems to be adapted for growing in strong soil! With me it not only increases rapidly both from offsets and seedlings, the foliage attains huge dimensions, accompanied with that deep glaucous tint so pleasing. E. Molyneux, South Hants.

MYRTLE BERRIES.—A bush of Myrtle communis has stood at the foot of a south wall in Swanmore Garden for the last twelve years, flowering profusely every year; but I never remember seeing it with a crop of berries before this year. One branch espe-

cially being smothered with them, much more so than any other part of the tree. Why this should be so is somewhat mysterious. The winters of 1890 and 1891 gave the plant a severe shock, however it has fully recovered with the above results. E. Molyneux, South Hants.

THE SEED, BULB, AND PLANT TRADE.—The correspondence under the above heading, so far as I have followed it, has all been on the side of the man with a grievance, and it seems to me to have reached a stage when the points at issue should have consideration from some one who, although an assistant, has some sympathy with the employer. The supply of young men in our trade, as well as in others nowadays, appears to be greatly in excess of the demand, and as a consequence only those who exhibit ability are likely to hold the few plums that are available in every establishment. I have had a good deal of experience with the average assistant through close association, extending over many years, and without taking any responsibility on my own account for this expression of opinion, I am constrained to state plainly that I fear there is little chance for the ordinary hand as I have found him, to expect to receive more than his market value, which I put down at £1 per week, or less. In special reference to the bulb and seed trade, where, I should like to know, are the most lucrative appointments to be found outside large centres? Again, ask anyone holding a leading position with a reliable firm, what is the percentage of the young men who are of any use? and the answer will be given on the fingers of one hand. To the man, however, who will take the trouble to gain some knowledge of his business and keep his head, my opinion is, that both the seed and its affiliated trades offer a very fair opening, and I am sure many will agree with me on this point. I take it that a "Union" amongst workers in our trade is an utter impossibility, and those who are urging its creation will find what I say to be true when their ideas are formulated and put into actual practice. Agri Horti.

PINUS INSIGNIS.—I read with interest the note from Mr. Ward in respect to a tree of the above-named species, and I recently measured one which stands in our well-known arboretum, the height of which is 70 feet; circumference of trunk 1 foot from ground, 16 feet; at 9 feet from ground, 14 feet; at 7 feet from ground, 17 feet 7 inches. This last takes in the base of large branches. The circumference of six of the branches under 7 feet from ground are respectively, 4 feet 6 inches; 5 feet 6 inches; 6 feet 7 inches; 4 feet 1 inch; 5 feet 3½ inches; and 5 feet 2 inches. The tree carries fifteen branches within 7 feet of the ground. Diameter of head, 60 feet. James Mayne, Bickon.

CHRYSANTHEMUMS FOR CUTTING.—One often sees Chrysanthemums used for cutting, especially for table decoration, that are quite unsuitable, but this is not from any want of varieties for the purpose. I have noticed recently fine kinds that may be grown alone for cuttings, as they are very free-blooming, not troublesome to grow, and produce graceful sprays, if not too much disbudded. These are the little Pompons named Snowdrop, which has neat, small, pure white flowers, and fit for tables of all sizes. But better than this is Jane, or Snowflake as it is also called, the flowers of the purest white, and the narrow florets are charmingly twisted. It should be grown largely, and by striking the cuttings late may be got even in January. The yellow counterpart to this, named Yellow Jane, is just as beautiful, but the flowers are richest yellow, and like those of the type, perfectly single. Orange Gem is a beautiful late variety of the colour orange, suffused more or less with a bronzy shade; it is a very free and useful kind. For table decoration the curious variety, Mrs. James Carter, is of great value. The flowers are not large, roundish, the florets short, and delicate primrose. They were much used in the various table arrangements at the recent Aquarium show. U.

POTTING SOILS.—The present is a good time for getting in stores of turf and peat: the loam taken from an old pasture with plenty of fibre in it, cut the turves about 2 inches thick, and make them into a stack about 2 yards wide, with the grass-side downwards; ridge the top to throw off rains. Different varieties of peat should be secured to be ready when required; it is best placed under a shed or in a stack, and kept dry. Leaf-soil that was got last winter, and

thrown into a stack or heap, should be turned over, and a good quantity placed under cover, to be kept in a good condition. For potting purposes it is useless when wet, and rotten. Soil heaps should never be allowed to be overgrown with reeds and grasses, but should have their exterior shaved off with a sharp-edged spade occasionally during the summer. *B. Wadds.*

ALLOTMENTS.—When the Secretary of the 'Rural Labourers' League' asserts that since 1887 allotments have increased by 150,000, he should have facts to substantiate his assertion, and not mere suppositions. Hearsay, as everyone knows, is such a mendacious fellow. The assertion was made on myriads of election platforms in the summer of 1892, and it still remains the same figure, although eighteen months have elapsed. It was then met by the further assertion that actually more allotments had been furnished in Scotland during the same time, 1887 to 1892, where the Allotments Act quoted did not operate. I have had enough experience of election canards not to believe any when put forward to secure some party end, and it seems obvious that in the present instance an effort was being made to snatch credit for an Act to which it was never entitled. Repeated condemnation of the convertableness of the Act is found in the fact that other legislation, such as is furnished in the Parish Councils Bill is imperatively needed to satisfy the demands for allotments. I append a cutting from a recent *Southampton Times*, a report of a conversation at the South Stoneham Board of Guardians, which sheds a lurid light on the value and usefulness of the Allotments Act of 1887:—

"THE ALLOTMENTS QUESTION.—The Deputy-Clerk reported that he had received a communication from Messrs. Gale and Newton relative to the Wimpson allotments, stating that they regretted that matters could not be arranged, and they presumed from the Authority's letter that their offer had been declined *in toto*.—The Clerk also remarked that he had written to Mr. Webb (clerk to the County Council) explaining the whole position, and he had received a reply stating that the subject would be referred to at the next meeting of the Council.—Mr. Payne said if the Council could obtain land at from £1 10s. to £3 an acre, then they were in measureable distance of obtaining allotments for the men at 6d. a rod. Certainly the men at Wimpson ought not to pay more than that.—Mr. Soave said they had received four applications for allotments, and they had not succeeded in securing land in either case. It seemed that the Act was entirely unworkable.—The Clerk said in two or three cases land was secured privately.—Mr. Richards said the Local Board at Shirley obtained land, but it cost them so much that they had to charge 1s. per rod, and they could not get half the land taken up.—The Chairman said they could do no more in the matter." *X. F. Z.*

SHANKING OF GRAPES.—It is a little disappointing to find in the discussion of this subject that none of the great market growers of Grapes have anything to say on the matter. If any class of growers of Grapes should have experience of this affection, surely it should be those whose vineries cover acres of ground, and who produce Grapes by tons. And yet it seems very doubtful whether in these huge market establishments shanking gives much trouble. Then it is disappointing to find these practical gardeners like "J. S. W." and "Shirburn," so practically differing as to the cause of shanking. The first, however, writes from a theoretical aspect—it may be a correct one, it may be otherwise. Still, all his belief that shanking is disease seems based upon theoretical grounds, because he does not find the trouble in outdoor Vines, no matter how heavily cropped. On the other hand, "Shirburn," evidently of a more practical mind, says at once he has cured the complaint by simply lifting Vines that were very subject to it, re-making and greatly shallowing the border, then re-planting. There has been no shanking since. Does it not present itself to the mind of most readers that an ounce of such practical result is worth a pound of theory? and does not this result also accord with what has been previously recognised as the chief cause of the trouble the Vine roots getting into grass, sour, or otherwise unsuitable soils? Vines that thrive outdoors do so only in soil that materially suits them, hence they are saved from these bad border troubles. Canker in Apples and Pears has been attributed to a fungoid disease. It may be so, but ample practical evidence has been furnished that by lifting trees and re-planting them more shallow, also by feeding the roots with the needful fertilisers, that canker has been cured. If we regard shanking pretty much as canker, both preventable affections, and both arising from imperfect root-action through soil-poverty, grossness, sourness, or similar cause, then it is evident that the treatment which cures one cures the other. There are plenty of vineries in which the crop of Grapes seems excessive, and yet there is no shanking. *A. D.*

GRAPE SHANKING.—With all our new modes of research, shanking seems to prevail as much as it did twenty or thirty years ago. Some say that this, and that, and the other is the cause, and still it seems that it is no better combated or the causes understood to-day than then. I believe that we make our borders too deep, and the editor's instructive paper on p. 624 helps to prove my theory; as will some experience I had in connection with shanking Grapes. I took the management of a place in the south of Scotland fourteen years ago, where Grapes were expected to be one of the principal objects of the place; at least, in a commercial point of view, I thought that they would have to be better grown than those that were hanging on the Vines at that time, or the returns would be very poor indeed, scarcely a berry on any of the bunches that was not shanked. However, in the following spring I collected as much fresh soil as I could obtain, not so turfy perhaps as many would have liked, still it was fresh soil; the border was turned over from end to end, the roots raised to within a few inches of the surface, and all poor stuff removed, and new soil substituted for it. The inside border was renovated in one year, and the outside the following year. Although the Vines did not bear a very heavy crop the first and second years, they eventually did so well, that it more than repaid us for all the labour and expense. So long as I stayed at that place the Vines were annually top-dressed, and by this means I was enabled to keep the roots close to the surface of the border. Badness of the drainage could not have contributed to the shanking of these Grapes, which, owing to the nature of the situation, could not have been anything but favourable for the passage of the water. The borders were at the highest point more than 6 feet higher than the surrounding ground, and at the lowest 3 feet. The drains emptied themselves through orifices in the retaining wall, and whenever the border was heavily watered, there was a run of water from these outlets after an interval of three-quarters of an hour. I visited that garden this season, and was told that shanking was again troublesome, and could not be accounted for, as the Vines had been well attended to. I at once came to the conclusion that the roots had again got too far from the surface. Be it understood, that these borders were well made as regards the drainage, the soil, lime-rubble, and bones employed; but they were, to my thinking, too deep, the depth being more than 3 feet. If all should go well, I intend shortly to replant two or three vineries at Harewood, and at no part will the borders be deeper than 20 inches. I could cite another instance where the roots were lifted nearer to the surface, but the borders were level with the surrounding ground, all the same, after the roots were brought up to more congenial quarters at the surface, the Grapes were excellent. Where a good supply of water is obtainable, and but few places fail in this respect, of what use is a deep border except to allure the roots away from the genial influence of the sun and air? *J. Jeffrey, Harewood.*

SPORTING OF CYPRIPEDIUMS.

In the issue of the *Gardeners' Chronicle* for the 16th inst., at p. 753, a correspondent, "P. W.," under the head of "Do Cypripediums Sport?" invites communications. My experience has been that of Mr. Measures, but only with the same variety, *C. Dauthieri*, although I have large specimens of several other hybrids. In May, 1884, I obtained from M. Godefroy-Lebeuf, of Paris, a plant of *C. Dauthieri*. It grew quickly into a strong plant, until, in 1888, it produced a highly-coloured flower, which I sent to Professor H. G. Reichenbach, who described it in your columns, April 7, 1888, p. 255, as *C. Dauthieri* var. *Rossianum*. This is the form which appeared later in other collections, and is known in gardens as *C. D. marmoratum*. I separated the new variety from the original clump, and grew it on until it also became a fine plant, when another variety appeared, of almost one hue of lemon greenish-yellow, very slightly tinged with pale chestnut on the upper halves of the petals. This was described by Mr. N. E. Brown in the *Gardeners' Chronicle*, April 4, 1891, p. 426, as "*C. Dauthieri* var. *Poggio-Gherardo*." I took that also away from the parent-plant of *C. D. Rossianum*, and grew it by itself, and it is now becoming a nice plant. It flowered true last year, and I showed it at the last meeting of the

Royal Tuscan Horticultural Society for the third time last Sunday (December 17), and then sent the bloom to the editor of the *Orchid Review*. Two years ago, out of the same clump of *C. D. Rossianum* appeared a fresh variety—a modification of *C. D. Pog. Gher.*, inasmuch as it differed from it in having the left longitudinal half of the upper sepal, and also the whole of the left petal dark, as in *C. D. Rossianum*, the remainder being as in *C. D. Pog. Gher.* It flowered true last year, and I called it after my wife's name, "Janet," although a more appropriate one would have been "Harlequin," from its singular parti-coloration. I left it alone, but carefully marked it—as the mother-plant had not long before had a larger shift, and I did not like to disturb it—the more so that other two *Poggio-Gherardos* had appeared—which have been marked to be removed in due time. The flower of one was fertilised with *P. G.*, to see what may be the result of growing this curious variety from its own seed. *H. J. Ross, Poggio, Gherardo, Florence.*

Obituary.

THE REV. DR. GORDON, formerly parish minister of Birnie, Morayshire, died recently at the advanced age of 93 years. Dr. Gordon had the degree of LL.D. conferred upon him by the University of Aberdeen in 1859, and would have come little into public view in the remote and retired parish in which he ministered had it not been for his botanical, geological, and antiquarian researches. The late Cosmo Innes, while delivering a lecture in the North, went out of his way to say, that "there was nothing in the earth or the air or the sea that escaped the notice of Dr. Gordon, of Birnie." This, in many respects, summed up some of the leading traits in Dr. Gordon's character. He published, in 1839, *Collectanea for a Flora of Moray*. Since that time he published a number of papers on natural science in several Scottish magazines. He added the plant *Pinguicula alpina* to the British flora; and between 1844 and 1860 he contributed to the *Zoologist* a series of papers on the fauna of Moray; and to the *Edinburgh New Philosophical Journal*, in 1859, a series of papers on the geology of Moray. He was the first to discover shell-mounds on the shores of the Moray Frith, and Sir John Lubbock, who visited them in company with him, devotes several pages to the discovery in his *Pre-historic Times*. About sixty years ago he, along with a few more gentlemen, founded the Elgin Museum and Institute—one of the finest scientific collections in the North. He was in no sense of the word a popularity-hunting clergyman, but was content to go quietly in and out amongst his people, by whom, as the years rolled on, he came to be not only respected but revered.

PROFESSOR BENTLEY.—On the 24th inst., at 91, Warwick Road, Earl's Court, ROBERT BENTLEY, formerly Professor of Botany, and Dean of the Medical Faculty, King's College, London, and Professor of Materia Medica and Botany, Pharmaceutical Society, aged 72. Funeral service in St. Matthias', Earl's Court, at 1.45 P.M., and interment at Kensal Green Cemetery, at 3 P.M., on Saturday next, the 30th inst. Friends will kindly accept this intimation.

WHICH TREE BEARS THE LARGEST LEAVES?

—The Palm family bears larger leaves than any other tree. The Inaja Palm, growing on the banks of the Amazon, has leaves which reach from 30 feet to 50 feet in length and 10 feet to 12 feet in breadth. Specimens of the leaves of the talepot Palm, a native of Ceylon, have been met with 20 feet long and 18 feet broad. These leaves are used by the natives to make tents, and thus employed they make very efficient shelters from rain. The leaves of the double Coconut Palm are often 30 feet long and several feet wide. The leaves of the Cannibal-tree of Australia resemble board planks, and are frequently 15 feet long, 20 inches broad, and 1½ feet thick at the base. These board-like leaves all shoot out at the top, and hang down so as to form a sort of umbrella around the stem. The Umbrella-tree of Ceylon has leaves of such enormous size that a single one will cover from fifteen to twenty men,

and often serves as a canopy to a boat, or a tent or soldiers. A specimen-leaf brought to England measured 36 feet round. The largest-leaved plant in this country is the Victoria Regia. One of the specimens of this magnificent water-lily in the gardens of the Royal Botanic Society had a leaf 7 feet in diameter, and capable of supporting a weight of 400 lb. *T. B.*



(By the term "accumulated temperature" is meant the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.)

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (-) the Mean for the week ending December 23.	ACCUMULATED.				More (+) or less (-) than Mean for the Week.	No. of Rainy Days since Jan. 1, 1893.	Total Fall since Jan. 1, 1893.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 1, 1893.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 1, 1893.	Below 42° difference from Mean since January 1, 1893.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	3 +	9	22	+ 502	- 27	6 +	247	57.5	3	23
1	4 +	8	26	+ 298	+ 8	2 -	195	26.8	15	31
2	3 +	8	23	+ 435	- 49	2 -	170	20.8	14	36
3	3 +	11	30	+ 518	- 22	1 +	169	21.0	27	42
4	4 +	13	26	+ 655	- 24	4 +	181	21.5	16	39
5	3 +	25	15	+ 577	- 41	3 +	160	23.5	21	43
6	5 +	23	7	+ 485	- 37	5 +	200	41.3	14	35
7	4 +	21	8	+ 761	- 104	4 +	187	31.0	13	34
8	4 +	28	5	+ 700	- 59	7 +	170	33.5	17	45
9	3 +	11	22	+ 539	- 76	4 +	213	33.1	29	32
10	3 +	28	8	+ 588	- 81	10 +	185	31.8	33	35
11	2 +	32	0	+ 832	- 62	5 +	181	28.6	17	52

The districts indicated by number in the first column are the following:—

- 0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending December 23, is furnished from the Meteorological Office:—

"The weather during this period was again very mild and unsettled. Rain fell frequently in all parts of the kingdom, especially in the west and north, and the atmosphere was humid.

"The temperature continued much above the mean, the excess ranging from 2° in the 'Channel Islands,' to as much as 5° in 'Scotland, W.' The highest of maxima were experienced on somewhat irregular dates, and ranged from 51° in some of the more northern and eastern districts, to 54° in 'Scotland, E.,' and 'Ireland, S.,' to 59° in 'Scotland, W.' The lowest of the minima were recorded during the middle part of the week when they ranged from 28° in 'Scotland, N.,' and 29° in 'Scotland, W.,' and 'England, S.,' to 34° in 'England, N.W.,' to 36° in the 'Channel Islands.'

"The rainfall was rather less than the mean in Scotland, E., and 'England, N.E.,' but more in all other districts; at most of the western and north-western stations the excess was considerable.

"The bright sunshine exceeded the mean value at some of the eastern and southern stations and over Ireland, but was about the normal elsewhere. The percentage of the possible duration ranged from 33 in 'Ireland, S.,' 29 in 'Ireland, N.,' and 27 in 'England, S.,' to 13 in 'England, N.W.,' and to only 3 in 'Scotland, N.,'

MARKETS.

COVENT GARDEN, December 28.

We cannot accept any editorial responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they fluctuate, not only from day to day, but often several times in one day, &c.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Arum, per doz. bl.	3	0-6	Narciss, French, white,	2	0-3
Azalea, p. 12 sprays	0	9-1	12 bunches	2	0-3
Bouvardias, per bun.	0	6-1	— yellow, 12 bun.	1	6-2
Camellias, doz. blms.	1	0-2	Orchids:—		
Carnations, 12 blms.	1	6-2	Cattleya, 12 blms.	6	0-12
Chrysanthemums, 12			Odontoglossum		
— bunches	2	0-6	crispum, 12 blms.	2	0-6
— doz. blooms	0	6-3	Pelargoniums, scar-		
Eucharis, per dozen	4	0-6	— let, p. 12 bun.	4	0-9
Gardenia, per dozen	3	0-6	— 12 sprays	0	6-1
Hyacinth, Roman,			Poinsettia, 12 blooms	4	0-6
12 sprays	0	6-0	Roses, French, p. doz.	0	9-1
Lilac (Fr.), per bun.	4	0-6	— p. box of 100	3	0-6
Lilium Harrisii, doz.	6	0-12	— Tea, per dozen	0	6-2
Lily of the Valley,			— coloured, dozen	2	0-4
per dozen sprays	1	0-2	— yellow (Maré-		
Maiden Hair Fern,			chals), per doz.	3	0-6
12 bunches	4	0-6	— red, per dozen	1	0-1
Marguerite, 12 bun.	1	6-3	Tuberose, 12 blms.	0	4-6
Mignonette, 12 bun.	2	0-4	Violets, Parmé, p. bn.	3	0-5
Primula, dble. p. bun.	0	6-1	— Czar, per bun.	2	0-3
			— English, per doz.	1	6-2

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Adiantum, per doz.	6	0-12	Foliage plants, doz.	12	0-42
Aspidistra, per doz.	15	0-30	Hyacinths, p. doz.	6	0-9
— specimen, each	7	6-21	Lily of the Valley, p.		
Azalea, per doz.	24	0-35	doz. pots	15	0-24
Chrysanthemums, doz.	6	0-9	Marguerites, per doz.	6	0-12
Cyperus, per dozen	4	0-10	Mignonette, doz. pots	6	0-9
Dracena, each	1	0-5	Palms, various, each	2	0-10
Erica, various, p. dz.	9	0-24	— specimens, each	10	6-84
Evergreen Shrubs, in			Poinsettias, per doz.	12	0-15
var., per dozen	6	0-24	Primulas, per dozen	4	0-6
Ferns, various, doz.	4	0-9	Solanums, per doz.	9	0-12
— small, per 100	4	0-6	Tulips, p. doz. pots	6	0-8
Ficus elastica, each	1	6-7			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, per bush.	1	6-7	Pine-apples, St. Mi-		
Cobs, per 100 lb.	45	0-0	chael, each	2	6-7
Grapes, per lb.	1	0-3			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	1	6-...	Lettuces, per doz.	1	3-2
Beet, red, per dozen	1	0-2	Mushrooms, pannel	1	3-2
Carrots, per bunch	0	4-6	Mustard and Cress,		
Cauliflowers, each	0	2-4	punnet	0	2-...
Celery, bundle	1	0-13	Parsley, per bunch	0	2-3
Cucumbers, each	1	0-16	Shallots, per lb.	0	3-...
Endive, per dozen	1	3-16	Tomatoes, per lb.	1	0-...
Herbs, per bunch	0	3-1	Turnips, per bunch	0	4-6
Leeks, per bunch	0	3-...			

POTATOS.

The holidays (since last report) have put a stop to trade, Stocks held over being heavy. *J. B. Thomas.*

SEEDS.

LONDON: Dec. 27.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write, to-day's market presented quite a holiday appearance, with scarcely any business doing; Clover seeds of all kinds are in consequence without any quotable alteration. For spring Tares holders asked advanced rates. Values for Canary seed continue to harden, and stocks meantime, both in Liverpool and in London, are getting into very narrow compass. There is no change in Hempseed. Peas and Haricots are without any fresh feature.

FRUITS AND VEGETABLES.

STRATFORD: Dec. 27.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade has been done as under:—Savoyas, 3s. to 4s. per tally; Greens, 1s. 6d. to 2s. per dozen bunches; Cauliflowers, 1s. to 1s. 6d. per dozen; do., 5s. to 7s. per tally; Turnips, 1s. 3d. to 1s. 6d. per dozen bunches; do., 3s. to 4s. per ton; Carrots, household, 4s. to 4s. 6d.; do., cattle-feeding, 3s. to 4s. 6d.; Brussels Sprouts, 1s. 3d. to 1s. 6d. per half-sieve; do., 2s. 6d. to 2s. 9d. per sieve; Parsnips, 60s. to 65s. per ton; Mangels, 22s. to 26s. per ton; Swedes, 18s. to 25s. do.; Onions, English, 150s. to 170s. do.; Dutch, 6s. to 6s. 6d. per bag; Valencia, 7s. 3d. to 7s. 6d. per case; Apples, English, 2s. 6d. to 3s. per bushel.

FARRINGTON: Dec. 28.—Quotations: Celery, 9s. to 11s. per dozen; Carrots, 45s. to 50s. per ton; Parsnips, 55s. to 60s. do.; Turnips, 35s. to 45s. do.; Onions, 7s. 6d. to 8s. 6d. per cwt.; Horseradish, 1s. 6d. to 1s. 9d. per dozen; Apples, good cooking, 5s. per bushel; Blenheim, 7s. 6d. do.; Grapes, English, 1s. 4d. per lb.; Almeida, 11s. 6d. to 12s. 6d. per barrel; Chestnuts, 7s. per cwt.; best do., 11s. do.; Tomatoes, 4d. per pound.

POTATOS.

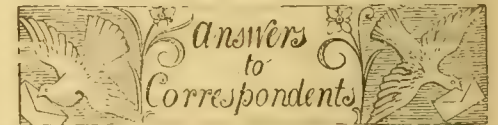
STRATFORD: Dec. 27.—Quotations:—Magnums, dark-land, 40s. to 45s.; do., light-land, 40s. to 65s.; Bruces, 50s. to 70s. per ton.

FARRINGTON: Dec. 28.—Quotations:—Main Crop (Scotch), 85s. to 90s.; Bruces, 55s. to 65s.; Abundance, 55s. to 65s.; Imperators, 45s. to 50s.; Magnums, 45s. to 50s. per ton.

LONDON AVERAGES: Dec. 27.—Hebrons, 70s. to 100s.; Snowdrops, 50s. to 70s.; Regents, 50s. to 70s.; Dunbars, 70s. to 90s.; Magnums, 35s. to 50s.; Main Crop, 60s. to 80s. per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure (quarter) for the week ending December 23, and for the corresponding period in last year:—1893: Wheat, 26s. 6d.; Barley, 29s.; Oats, 18s. 1892: Wheat, 25s. 9d.; Barley, 24s. 6d.; Oats, 16s. 10d.



AMERICAN METHODS OF HEATING BY STEAM: *W. See Gardeners' Chronicle* for September 17, October 8, and November 26, 1892, for a full description of these methods.

CATTELEYA BULBS: *H. E. F. and H. B.* The spots are due to a fungus, but we can, at present, give you no further information. It is, unfortunately, not a new visitation.

FUNGUS ON A MUSHROOM BED: *S. W.*—The fungus is *Coprinus fimetarius*, which is very common on dung. It is possible that the spawn was in the manure of which the bed was made, and, in the struggle for existence, the *Coprinus* came up first, gaining possession, supplanted the Mushrooms, and flourished at their expense. It is a harmless species as an esculent. *M.C.C.*

MEASURING CONICAL HEAP: *H. F. E.* First find the area of base by multiplying the square of the diameter by 0.7854, then take $\frac{1}{3}$ of area of base and multiply by the perpendicular height, which will give the contents.

MUD FROM A RIVER BOTTOM: *G. T.* It would doubtless grow almost anything if it were dug roughly over so as to be acted upon by frost and wind, turning it over two or three times afterwards, and well pulverising it. You might plant Willows to grow into trees, or certain kinds for furnishing osiers for basket-making; Alder in variety, *Symphoricarpos racemosus*, any species of *Populus*, *Taxodium distichum*, *Hippophae rhamnoides*, Common Quince, Medlars, such creeping plants as *Ampelopsis* in variety, any strong-growing Ivy, and *Lycium barbarum*. For some years to come the soil would be unfitted for the growth of American plants; and we cannot therefore advise the planting of *Rhododendrons*.

MUSHROOM SOIL: *H. T.* Sample sent insufficient.

STREPTOSOLEN: *W. T.* *Solanaceae*, Colombia, greenhouse treatment *Gardeners' Chronicle*, June 21, 1884, p. 797, fig. 147.

THE CARNATION AND PICOTEE: *C. L.* This manual, by the late E. S. Dodwell, first appeared in 1886, and another edition was issued in 1891. The publishers are Messrs. Groombridge & Sons, London. *The Carnation Manual*, by J. Douglas, published by Cassell & Co., Limited, London, is the more recent work.

COMMUNICATIONS RECEIVED.—Prof. Sargent, Boston, U.S.—Prof. Henriques, Coimbra.—P. B.—Lausanne.—J. & J. V.—A. H. K.—O. P.—H. E. Ryde.—N. L.—T. F.—C. B. Troyes.—C. F.—W. P.—G. F.—Dickson.—Sunset Seed and Plant Company.—E. D. S. & Co., Limited.—W. G.—A.—J. J.—J. Snell.—T. F. R. D.—J. N.—T. D. S.—J. D.—W. A. C.—E. M.—Scotch Rose.—C. L.—J. J. W.—B. W.—J. R. J.—J. Burke.—Mrs. E. Drummond.—A. Coombes.

CONTINUED INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

Increased to the extent of 75 per cent.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

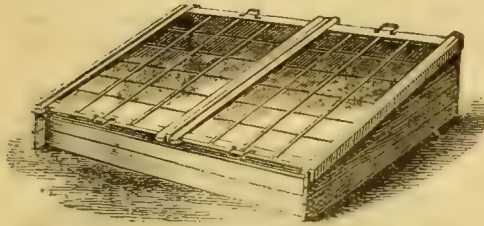


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LEAD, GLASS OIL, and COLOUR MERCHANTS,
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GREAT REDUCTION IN FRAMES OUR WELL-KNOWN MAKE.



PORTABLE CUCUMBER FRAMES.

These Frames are made of the Best Materials, and can be put together and taken apart in a few minutes by any one.

Sizes and Prices, Glazed and Painted.		£	s.	d.
1-light, 4 ft. by 6 ft...	CASH	2	0	0
2 " 8 ft. by 6 ft...		3	0	0
3 " 12 ft. by 6 ft...	PRICES,	4	2	6
4 " 16 ft. by 6 ft...		5	5	0
5 " 20 ft. by 6 ft...	CARRIAGE	6	7	6
6 " 24 ft. by 6 ft...	PAID.	7	10	0

Larger sizes at proportionate prices.

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15-oz., per 100 ft., 8s. 6d.	12x10, 18x12, 18x14, 24x14
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	16x12, 16x14, 20x16, 24x18, &c.

14 x 3 Prepared Sash Bar at 5s. per 100 feet.

Paints and Varnishes at Low Prices. Flooring, 5/9 per square;

Matching, 4/9; 2x4, at 4d. per foot run; 2x7 at 1d.

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in either Wood or Iron,
or both combined.



Wooden Chapels,
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Hot-water Apparatus
for warming Churches,
Schools, Public Buildings,
Mansions, Harness Rooms,
Drying Rooms, Hothouses, and
Buildings of every Description.

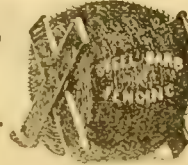
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(LIMITED),
WARRINGTON



**ORCHID BASKETS,
RAFTS, BOATS, AND CYLINDERS,
AND ALL GARDEN SUNDRIES.**

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**HORTICULTURAL
BUILDINGS,**

Conservatories, Greenhouses,
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Stoves and Orchid
Houses, &c. Also
Boilers, Pipes,
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Awarded the only
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ARE THE FLOWER POTS BEST.

THE SUSSEX POTTERY WORKS, UCKFIELD.

Quotations given for quantities. Carriage paid to any

The Best Railway Station. are Cheapest.

SAMPLES and LISTS FREE. Crates packed.

**HORTICULTURAL Best Welsh ANTHRACITE
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Apply to THOS. FENARD, Agent, LLANELLY, South Wales.

INCREASED CIRCULATION.

Notice to Advertisers.

THE GARDENERS' CHRONICLE

FOR

SATURDAY, JAN. 6, 1894,

WILL CONTAIN AS A

SUPPLEMENT

A

Sheet Almanac.

As a large EXTRA circulation
of this Number is guaranteed, it
will be a very valuable medium
for Advertisements.



Advertisers desirous of
securing Space in this Number are
requested to communicate with the
Publisher, not later than Wednesday,
January 3, 1894.

"THE PUBLISHER,"

41, WELLINGTON STREET, STRAND,

LONDON, W.C.

Telegrams—"CONSERVATORIES, LONDON."

Telephone, No. 4652.

NOTICE to Builders, Nurserymen, Market Gardeners, Timber Merchants,
AND THE TRADE GENERALLY.

RELIABLE
BARGAINS.

WM. COOPER'S

NOT SECOND-HAND
GOODS.

SEVENTH ANNUAL CLEARANCE SALE.

Office: 755, OLD KENT ROAD, LONDON, S.E.

Works (the Largest Steam Horticultural Works in the World): 747 to 755, OLD KENT ROAD, LONDON, S.E.

Show Ground: DEVONSHIRE GROVE (adjoining).

Being the end of the Season, I am again induced to offer my Stock on hand at ridiculously Low Prices, to make room for my
SPRING STOCK, for SIX WEEKS ONLY, COMMENCING DEC. 4. LAST DAY of SALE, SATURDAY, JAN. 13, 1894.

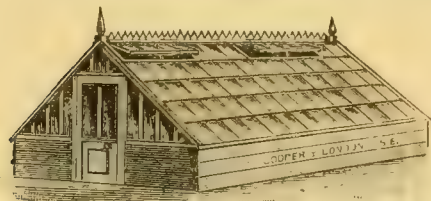
CONDITIONS OF SALE.

Goods are offered subject to being on hand on receipt of reply. Cash to accompany all orders, and prices to be strictly *nett*. All orders will be executed in rotation, and carefully packed and put on rail, except those otherwise stated.

P.O.O. payable at 794, Old Kent Road; Cheques crossed "L. and S. W. Bank."

GREENHOUSE DEPARTMENT.

THE AMATEUR FORCING HOUSE, TENANT'S FIXTURE (Span-roof).



These houses are offered at an exceedingly low rate, and should be readily approved by both amateur and professional gardeners, as brickwork, which is very expensive to a small house, is entirely dispensed with.

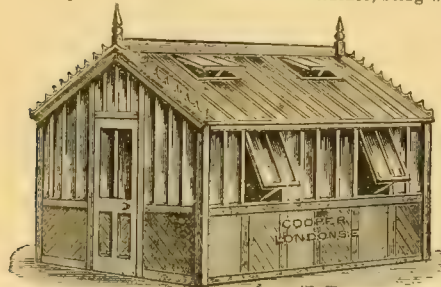
The utility of such a house for forcing or cultivating Cucumbers, Tomatoes, Melons, &c., will be perceived at a glance, it being a structure constantly in request but almost hitherto unknown.

Specification.—Framework substantially constructed of red deal; the whole of sides, and 2 ft. 6 in. of ends, boarded with well-seasoned tongued and grooved matchboards. Half-glass door, complete with rim lock and brass fittings in one end; glass 16 oz. throughout, English cut. Ventilators supplied according to size of house, and stays necessary for opening same; stages for plants each side of house, all woodwork painted one coat of good oil paint, and the whole structure securely packed and placed on rail.

Lot.	Length.	Width.	Height.	Usual Price.	Sale Price.
				Packed on rail.	Packed on rail.
1 to 7	7 ft.	5 ft.	7 ft.	£2 10 0	£2 0 0
8 to 10	8 ft.	5 ft.	7 ft.	3 0 0	2 5 0
11 to 12	9 ft.	6 ft.	7 ft. 3 in.	3 10 0	2 10 0
13 to 22	10 ft.	7 ft.	7 ft. 6 in.	4 10 0	3 10 0
23 to 29	12 ft.	8 ft.	8 ft.	5 10 0	3 15 0
30 to 41	15 ft.	10 ft.	8 ft. 6 in.	7 15 0	5 10 0
42 to 48	20 ft.	10 ft.	9 ft.	10 15 0	7 10 0
49 to 51	25 ft.	10 ft.	9 ft.	15 5 0	10 0 0
52 to 54	50 ft.	10 ft.	9 ft.	27 0 0	20 0 0
55 to 56	100 ft.	10 ft.	9 ft.	45 0 0	25 0 0

SPAN-ROOF VILLA CONSERVATORIES.

Adaptable for the lawn of a villa residence, being well and substantially-built, constructed



of the best materials, and artistically finished, with diagonal panels and barge-boards. The framework is composed of 2 in. by 3 in. red deal, the lower part doubly-lined with tongued and grooved matchboards, and the roof properly fitted with sashes, which facilitates fixing or removing of same without disturbing glass.

The houses are fitted with a half-glass door, complete with rim lock, brass fittings and key, and is supplied with lattice staging for each side, footpath the entire length; gutters, down pipes, suitable ventilators, and necessary ironwork for opening same. All woodwork painted two coats of good oil paint, glass cut to sizes, and all parts securely packed on rail. Prices:—

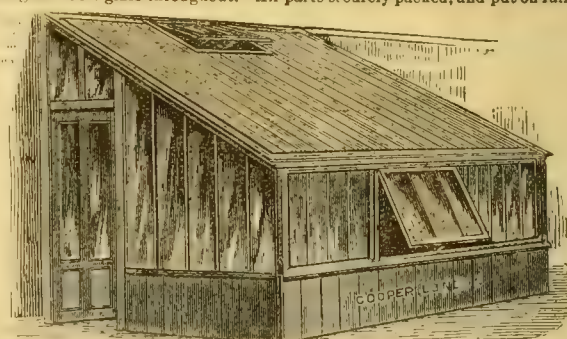
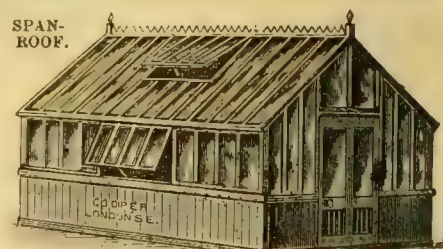
Lot.	Long.	Wide.	High.	To Eaves.	Usual Price.	Sale Price.
					Packed on rail.	Packed on rail.
343 to 351	9 ft.	6 ft.	7 ft.	4 ft. 6 in.	£7 10 0	£5 10 0
352 to 358	12 ft.	8 ft.	8 ft.	5 ft. 6 in.	10 0 0	7 0 0
359 to 363	15 ft.	8 ft.	8 ft. 6 in.	5 ft. 6 in.	12 0 0	8 10 0
364 to 371	20 ft.	9 ft.	9 ft.	6 ft.	16 10 0	12 0 0
372 to 374	25 ft.	9 ft.	9 ft.	6 ft.	21 0 0	15 0 0

21 oz. for Roof 5 per cent. extra.

"AMATEUR" SPAN-ROOF AND LEAN-TO GREENHOUSES. Tenant's Fixtures.

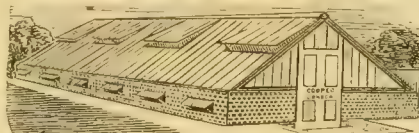
Made especially for Amateurs at a nominal figure, thereby coming within reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectable by any handy-man or gardener in a few hours. Framework is substantially constructed of red deal, the lower part being filled in with well-seasoned tongued and grooved matchboards. The house is fitted with a door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and stages for each side, and good 16 oz. glass throughout. All parts securely packed, and put on rail.

SPAN-ROOF.



LEAN-TO.

LEAN-TO.					Usual Price.	Sale Price.	
Lot		Long.	Wide.	High.	To Eaves.	Packed on rail.	Packed on rail.
57 to 71	Span-roof	7ft.	5ft.	7ft.	4ft.	£2 18 0	£2 6 0
72 to 76	"	8ft.	5ft.	7ft.	4ft.	3 10 0	2 15 0
77 to 108	"	9ft.	6ft.	7ft. 3 in.	4ft.	4 0 0	3 0 0
109 to 121	"	10ft.	7ft.	7ft. 6 in.	4ft. 6 in.	5 0 0	4 0 0
122 to 149	"	12ft.	8ft.	8ft.	5ft.	6 0 0	4 10 0
150 to 170	"	15ft.	10ft.	8ft. 6 in.	5ft.	8 10 0	6 10 0
171 to 176	"	20ft.	10ft.	9ft.	5ft. 6 in.	12 0 0	9 0 0
177 to 184	"	25ft.	10ft.	9ft.	5ft. 6 in.	17 0 0	12 0 0
185 to 189	"	50ft.	10ft.	9ft.	5ft. 6 in.	30 0 0	23 0 0
190 to 197	"	100ft.	10ft.	9ft.	5ft. 6 in.	50 0 0	30 0 0
198 to 201	"	30ft.	10ft.	8ft. 6 in.	5ft.	20 0 0	14 0 0
202 to 211	Lean-to	7ft.	5ft.	7ft.	4ft.	2 8 0	2 0 0
212 to 221	"	9ft.	6ft.	7ft. 3 in.	4ft.	3 10 0	2 15 0
222 to 225	"	12ft.	8ft.	8ft.	5ft.	5 10 0	4 0 0
226 to 228	"	15ft.	10ft.	8ft. 6 in.	5ft.	8 0 0	5 15 0



SPAN-ROOF FORCING HOUSE.

The illustration shown will convince all practical minds of the importance and utility of this class of house for Gentlemen, Nurserymen, Market Gardeners, and all those who require a cheap strong House for Forcing, or growing Cucumbers, Tomatoes, Melons, &c.

Specification.—Built for brickwork, 3 feet high, of thoroughly well-seasoned red deal; roof ventilation according to size; door at one end; all 21-oz. glass; painted one coat.

Lot	Usual Price.	Sale Price.
	Packed on rail.	Packed on rail.
229 to 235	27 by 9	£9 0 0
236 to 242	20 by 12	11 0 0
243 to 246	20 by 14	14 10 0
247 to 250	40 by 9	17 0 0
251 to 255	40 by 12	21 0 0
256 to 257	40 by 14	25 0 0
258 to 260	100 by 9	40 0 0
261 to 267	100 by 12	48 0 0
268 to 281	100 by 14	55 0 0
282 to 342	Ventilating boxes for Side Walls	4 9

For full Specification of Sale, see three-page advertisement in the *Gardeners' Chronicle* of December 2.

SALE CATALOGUE POST-FREE.

WILLIAM COOPER, 747 TO 755, OLD KENT ROAD LONDON, S.E.



THOMAS GREEN & SON, LTD., LEEDS and LONDON,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered

HOT-WATER BOILERS,

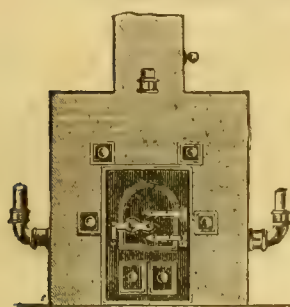
Others with TUBES, SHELVES, & HOLLOW or ORDINARY CAST-IRON GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

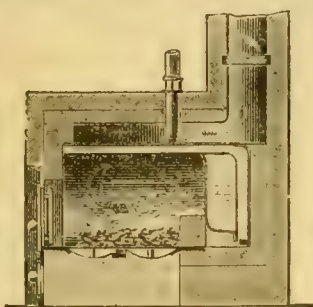
The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

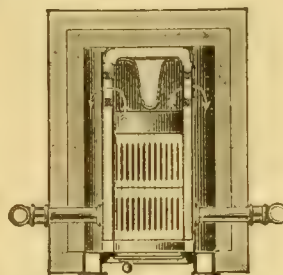
MUNICIPAL PATTERN BOILER, THE BEST EXTANT.



—FRONT ELEVATION—



—LONGITUDINAL SECTION—



—SECTIONAL PLAN—

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box water space and V-shaped back. The front elevation shows it set in brickwork, which is necessary for this class of boiler.

SIZES AND PRICES.

	3 ft. 2 in. long	by 2 ft. 0 in. wide	by 2 ft. 0 in. deep		1000 ft.	Price
MB 1	3 ft. 2 in.	by 2 ft. 0 in.	by 2 ft. 0 in.		1280	£15 0 0
MB 2	4 0	by 2 0	by 2 0		2200	" 21 0 0
MB 3	5 0	by 2 3	by 2 6		4000	" 32 0 0
MB 4	6 6	by 3 0	by 3 0		7000	" 60 0 0
MB 5	8 6	by 4 0	by 3 9			" 85 0 0

SPECIAL BOILERS made to suit all purposes and requirements, and Estimates given for HEATING APPARATUS.

We make Boilers from £3 10s.

WHEN WRITING FOR PRICE LISTS, PLEASE STATE APPROXIMATE REQUIREMENTS.

OUR PRODUCTIONS MAY BE OBTAINED FROM THE LEADING MERCHANTS, IRONMONGERS and SEEDSMEN, or DIRECT FROM

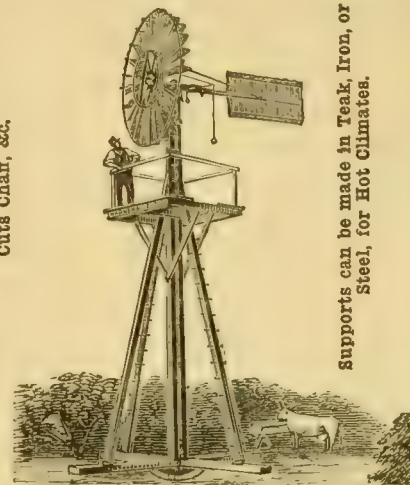
THOMAS GREEN & SON, LTD.

SMITHFIELD IRONWORKS, LEEDS; and SURREY WORKS, LONDON.

HUNDREDS OF REFERENCES CAN BE GIVEN IF REQUIRED.

ROBERT WARNER & CO.'S WINDMILLS.

Saves Coal, Pumps Water, Grinds Corn, Cuts Chaff, &c.



Supports can be made in Teak, Iron, or Steel, for Hot Climate.

ONE OF THESE MILLS WAS ERECTED AT THE ROYAL AGRICULTURAL SHOW, CHESTER.

Prices from £25, including Pump and Timber Supports.

May 27, 1893, The Dell, Englefield Green, Surrey.
ROBERT WARNER & CO., Engineers, 27, Jewin Crescent, E.C.
Dear Sirs,—It affords me much pleasure to inform you the 25 ft. Annular Sail Windmill, on 40 feet timbers, working a set of 3 in. x 9 in. stroke treble pumps, that you fixed here for Baron Schröder, is giving very great satisfaction, pumping the water through 4,224 feet of pipe, to a vertical height of about 80 feet. I must also express my thorough appreciation of the manner in which the whole of the work has been so successfully carried out.—Yours faithfully,

H. BALLANTINE, Head Gardener to Baron Schröder.
We have a similar Mill and set of Pumps in hand for Lord Northbourne.

NUMEROUS OTHER TESTIMONIALS ON APPLICATION TO
27, JEWIN CRESCENT, CRIPPLEGATE, LONDON, E.C.
Engineering Works, WALTON-ON-TRE-NAZE, ESSEX.

PICTURESQUE NATURALISTIC

ROCK FORMATION,

FOR
WINTER GARDENS AND
FERNERIES;
WATER FALLS,
STREAMS,
LAKES,
&c.
As at Earl's Court Fernery Cascades, by us.
As at Imperial Institute Gardens.
PULHAM & SON, 50, Finsbury Square, E.C.
VASES,
FOUNTAINS,
KERBING,
BALUSTRADES,
TERRACES, &c.,
IN STONE-LIKE AND RED
TERRA COTTA.
Durability Guaranteed.

ANDERSON'S RUSSIA MATS

Are the Best and Cheapest.

GARDEN SUNDRIES OF EVERY KIND.

Illustrated CATALOGUE post-free on application.

JAMES T. ANDERSON,

135 & 137, COMMERCIAL ST., LONDON, E.

HEATING! HEATING!! HEATING!!!

THE THAMES BANK IRON COMPANY

Undertake the complete erection of HEATING APPARATUS for GREENHOUSES, OFFICES, PUBLIC BUILDINGS, &c. Have the largest stock of BOILERS, PIPES, and CONNECTIONS in the Trade to select from, and invite inspection of same.

BOILERS of the latest and most approved class, including the

Patent HORIZONTAL TUBULAR, with WATER BARS; CAST-IRON SADDLE, with WATERWAY-END, &c.;
VENTILATING GEAR AND VALVES.

AWARDED THE ONLY COLD MEDAL at the INTERNATIONAL HORTICULTURAL EXHIBITION, 1892, for HOT-WATER APPLIANCES.

ILLUSTRATED CATALOGUE, 1s. PRICE LIST FREE.

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Telegraphic Address—"HOT-WATER, London."

Telephone No. 4763.

THE GARDENERS' CHRONICLE

PUBLISHER'S NOTICES.

GARDENERS' CHRONICLE TELEGRAMS.—The Registered Address for Foreign and Inland Telegrams is "Gardchron, London."

ADVERTISEMENTS.

SCALE OF CHARGES FOR ADVERTISING.

HEAD LINE CHARGED AS TWO.

4 Lines .. £0 3 0	15 Lines .. £0 8 6
5 " .. 0 3 6	16 " .. 0 9 0
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9 " .. 0 5 6	20 " .. 0 11 0
10 " .. 0 6 0	21 " .. 0 11 6
11 " .. 0 6 6	22 " .. 0 12 0
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13 " .. 0 7 6	24 " .. 0 13 0
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AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20s.
If set across three Columns the lowest charge will be 30s.
Page, £8; Half Page, £4 10s.; Column, £3.

GARDENERS AND OTHERS WANTING SITUATIONS. 26 words, including name and address, 1s. 6d., and 6d. for every additional line (about nine words) or part of a line. These Advertisements must be prepaid. This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

Births, Deaths, and Marriages, 5s. each insertion.

NOTICE TO ADVERTISERS.—In many instances Remittances in Payment of Repeat Advertisements are received without name, address, or anything beyond the postmark on envelope by which to identify the sender; this in all cases causes a very great deal of trouble, and frequently the sender cannot be identified at all. Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisements which they wish repeated.

POSITION.—Advertisers are specially requested to note, that under no circumstances whatever can any particular position be guaranteed for advertisements occupying less space than an entire column.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to A. G. MARTIN, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

Advertisements for the current week MUST reach the Office not later than Thursday noon.

All Advertisements should be addressed to the PUBLISHER.

Publishing Office and Office for Advertisements, 41, WELLINGTON STREET, STRAND, W.C.

SUBSCRIPTIONS.

All Subscriptions payable in advance. The United Kingdom, 12 months, 15s.; 6 months, 7s. 6d.; 3 months, 3s. 9d. All Foreign Subscriptions, including Postage, 17s. 6d. for 12 months. Post-office Orders to be made payable at the Post-office, 42, Drury Lane, W.C., to A. G. MARTIN.

Subscribers who experience any difficulty in obtaining their copies regularly, are particularly requested to communicate with the Publisher (in cases of delay in the delivery by post, the cover should be forwarded with complaint).

AGENTS WANTED for the SALE of NATIVE GUANO. The Best and Cheapest Manure for all Farm and Garden Crops.—The NATIVE GUANO COMPANY, LIMITED, 29, New Bridge Street, Blackfriars, London, E.C.

C. BEESON'S MANURE.—Composed of Blood and Bone. The Best Fertiliser for all purposes. Sold in tins, 1s., 2s. 6d., and 5s. 6d.; also in air-tight bags, ½ cwt., 6s.; 1 cwt., 10s. Full directions for use sent with each tin and bag. 1 cwt. and above sent carriage paid, cash with order. C. BEESON, Bone Mills, St. Neot's, Hunts.

"I have tried this fertiliser on various garden crops, and I am able to say that it is an excellent Manure for Vegetables, Flowers, Vines, and Fruit Trees.

"A. B. GRIFFITHS, Ph.D., F.R.S.E., F.C.S."

REAL MANURE.

To make up for the loss from drought, it is absolutely necessary all should use the above immediately. Its effect is marvellous. Just one powerful ingredient makes it far superior to all others.

Mr. NOAH KNELLER, Malshanger Pk., Basingstoke

Has had his supply, and says: "The exact dimensions of one Onion, 7 inches across, 19 inches round, weight 2 lb. 9 oz.; twelve Onions weighing 34 lb., which I exhibited at Reading. Grown solely by the use of CANNELL'S REAL MANURE. A farmer said that he wished his Swedes were as big as my Onions."



H. CANNELL & SONS, SWANLEY, KENT.

FIR-TREE OIL

SOLUBLE INSECTICIDE.

The most pleasant and reliable of all insecticides for destroying insects on plants, animals, and birds. Thousands of testimonials received from all parts of the world. Bottles, 1s. 6d., 2s. 6d., 4s. 6d., 7s. 6d., and 12s. 6d.; in bulk, 11s. per gallon, with full directions for use.

Wholesale from all Horticultural Dealers.

E. GRIFFITHS HUGHES, Victoria St., MANCHESTER. NEW YORK—ROLKER AND SONS.

COMPLETE ERADICATION of all INSECT PESTS in GREENHOUSES and FRAMES is thoroughly insured by using the

LETHORION (VAPOUR CONES).



They are now universally admitted to be the only reliable Fumigator, being thoroughly uniform in strength, and are not liable to deterioration from atmospheric changes. They cannot injure the most delicate flower or plant. Scale and mealy-bug may be completely eradicated by using the Cones double strength.

PRICES.—For frames of 50 to 100 cubic feet, No. 1 cone, 6d. each; 500 ft. to 700 ft., No. 2, 1s.; 1000 feet to 1500 feet, No. 3, 1s. 6d.

To be had from the Seed and Nursery Trade throughout the Kingdom.

Manufacturers:—CORY & CO., LIMITED, 13, 15, & 16, Finsbury Street, London, E.C.

THE "PERFECT" FUMIGATOR.—Quite Safe, no Scorching, Smoke COOL, Effectual and Most Economical. Testimonials.

Mr. LEACE, Gr. to the Duke of Northumberland, Albury Park, says, Dec. 15, 1893:—"After nearly 40 years' experience, this is the best Fumigator I have ever seen, in fact all that can be desired. The Al Tobacco Cloth I like very much. Send on 15 lb. more.

From Mr. F. CORNISH, Gr. to Dowager Lady Bowman, Joldwynds, near Dorking, Dec. 9, 1893:—"I consider it the best Fumigator I have ever used. Also your Al Cloth requires very little attention: most economical, no injurious effects upon the foliage, certain death to green and black-fly.

Fumigators, 10s. 6d. each. Al Tobacco Cloth, specially prepared, 1s. 6d. per lb. Full particulars, with copy of other testimonials, on application to JAS. IVERY AND SON, Nurserymen, &c., Dorking and Reigate, Surrey.

EXTERMINATE ALL INSECT PESTS



Without Injury to Foliage.

No HOT COKES.

Vastly Superior to Tobacco Paper,

And Adopted by—

Sir Trevor Lawrence, Bt.; Baron Schroder; Rt. Hon. Jos. Chamberlain; Sir Leopold Rothschild, Bart.; Messrs. Veitch, Chelsea; Sutton, Reading; Carters', Holborn

Easy, Certain, Safe, and Cheap. Sheets, 9d. (for 1000 cubic feet in parcels) 9s. per Dozen, of 1 dozen, also ½, ¾, and 1 gross. } at 13 to 12oz.

McDougalls' Liquid Insecticide.—For Use under Glass.

"Garden and Fruit Tree Wash.—For Outdoor Use.

"Plant Food or Manure.—For Vines, Fruits, & Plants.

Wasp and Vermin "Chokers"—For exterminating Wasps and Ants, Rats, Rabbits, Mice, Moles, &c., and all Vermin that Burrow.

No. 1 at 2s. per dozen, or 22s. 6d. per gross; No. 2 at 5s. per dozen, or 57s. 6d. per gross.

All Free from Poison. Patentes and Sole Makers—

McDOUGALL BROS. { London: 10, Mark Lane.

{ Manchester: 68, Port Street.

{ Glasgow: 70 to 78, King Street.

FROM NURSERYMEN AND SEEDSMEN.

"KILLMRIGHT,"

For Destruction of all Insect Pests and Mildew.

THE STOTT DISTRIBUTOR CO. (Lmtd.),

Barton House, Manchester.

GISHURST COMPOUND, used since 1859 for Red Spider, Mildew, Thrips, Greenfly, and other blight; 2 ounces to the gallon of soft water, 4 to 16 ounces as a winter dressing for Vines and Orchard-house trees, in lather from cake, for American blight, and as an emulsion when paraffin is used. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Buds dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

SAVE HALF THE COST.

GARSDIE'S BEDFORDSHIRE COARSE AND FINE

Is admitted by the leading Nurserymen to be the Best Quality obtainable in the Trade.

Consumers should Buy Direct from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS.

Apply direct to the Proprietor for Samples and Price free on Rail or Canal. All Orders executed with the utmost promptness and under personal supervision. Special Railway Rates in force to all parts. All kinds of PEAT supplied at lowest possible prices. Sample Bag sent on application to

GEO. GARSDIE, Jun., F.R.H.S., Leighton Buzzard, Beds.

ORCHID PEAT; Best Quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices of WALKER AND CO., Farnborough, Hants.

ORCHID PEAT.

PREPARED, ready for use, all fibre, 10s. per sack; 5 for 47s. 6d. SELECTED, in blocks, very fibrous, 6s. per sack; 5 for 37s. 6d. SECOND QUALITY, 5s. per sack; 5 for 22s. 6d. BROWN FIBROUS PEAT, for Azaleas, Rhododendrons, and Ferns, 4s. per sack, 5 for 18s.; and 3s. per sack, 5 for 12s. 6d. PEAT-MOULD, LEAF-MOULD, and FIBROUS LOAM, each 2s. 6d. per sack; 5 for 10s. PREPARED POTTING COMPOST, 4s. per sack; 5 for 18s. All sacks included.

Send Postal Order for Sample Sack. Special terms to the Trade. For Price List apply to THE FORESTER, Joyden Wood, near Bexley, Kent.

EPPS'S selected PEAT,

For ORCHIDS, STOVE PLANTS, Hardwood do., Ferns, and Rhododendrons, by sack, yard, ton, or truckload. SPECIAL ORCHID PEAT, in sack only. Rich fibrous LOAM, superior LEAF-MOULD, Coarse, Crystal, and Fine SILVER SAND, CHARCOAL, C. N. FIBRE REFUSE, fresh SPHAGNUM, Patent MANURES, FERTILISERS, INSECTICIDES, and all other Garden Requisites. Peat Moss Litter. The Original Peat Depot, RINGWOOD, HANTS.

RICHARDS' NOTED PEAT.

(Trade supplied on best terms).

Specially selected and prepared for Orchids and all other plants. Also Loam, Sand, Artificial Manures, Insecticides, Best Russian Mats, Sphagnum Moss, and Garden Sundries of every description. Special quotations given for any goods sent carriage paid.

G. H. RICHARDS, Old Shot Tower Wharf, Lambeth, London, S.E.; Peat Grounds and Depôts, Ringwood and Wareham. Address all letters to London Wharf.

BOILING WATER OR MILK.
E P P S'S
GRATEFUL—COMFORTING.
C O C O A
BREAKFAST—SUPPER.

ESTABLISHED 1851.

BIRKBECK BANK,

SOUTHAMPTON BUILDINGS, CHANCERY LANE, W.C.
 TWO-AND-A-HALF per Cent. INTEREST allowed on DEPOSITS, repayable on demand.
 TWO per Cent. on CURRENT ACCOUNTS, on the minimum monthly balances, when not drawn below £100.
 STOCKS and SHARES purchased and sold.

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For the encouragement of Thrift the Bank receives small sums on deposit, and allows interest, at the rate of TWO-AND-A-HALF PER CENT. per annum, on each completed £1.

BIRKBECK BUILDING SOCIETY.

HOW TO PURCHASE A HOUSE FOR TWO GUINEAS PER MONTH.

BIRKBECK FREEHOLD LAND SOCIETY.

HOW TO PURCHASE A PLOT OF GROUND FOR FIVE SHILLINGS PER MONTH.

The BIRKBECK ALMANACK, with full particulars, post-free.
 FRANCIS RAVENSCROFT, Manager.

TECHNICAL HORTICULTURE.

COUNTY COUNCIL LECTURES.

PAXTON'S COTTAGERS' CALENDAR
OF GARDEN OPERATIONS.

Will be useful to Lecturers and Students in the above subject.

Price 3d.; post-free, 3½d.

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Any one desirous of

Renting a Farm or Residence, or Purchasing an Estate, can have copies of the

MIDLAND COUNTIES HERALD

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on stating the purpose for which the paper is required, forwarding Name and Address, and six halfpenny stamps for postage, addressed, "Midland Counties Herald Office, Birmingham." The Midland Counties Herald always contains large numbers of advertisements relating to Farms, Estates, and Residences for Sale and to be Let.

The Weather for 1894.

CLEMENT'S WEATHER CALENDAR

IS NOW READY, AND CONTAINS:—Appearance of Sky and Atmosphere, Rainfall, Sunshine, Direction and Force of Wind, Height of Barometer and Thermometer, &c., &c., for every day in the year. The only Calendar which correctly predicted the dry spring and summer of 1893. In book form, with Diary, &c., 6d., post free 7d. In sheet for framing, 1s., post free 1s. 3d. Smith's bookstalls, or any bookseller. Wholesale:—

PIPER AND CARTER, 5, Farnival Street, Holborn, E.C.

THE FRUIT GARDEN of the UNIVERSE.

—THE AUSTRALIAN IRRIGATION COLONIES (Chaffey Brothers), established and regulated by Government, OFFER an enjoyable Life and OCCUPATION, a sunny and salubrious Climate, and most highly remunerative returns to Cultivators with small or large Capital. Pamphlet free.
 CHAFFEY BROTHERS, Limited, 35, Queen Victoria Street, London, E.C. J. E. M. Vincent, Chief Commissioner.

To Rose Growers.

MESSRS. JAMES VEITCH AND SONS wish to ENGAGE a thoroughly efficient MAN in the above capacity. He must be well acquainted with the Propagation and Culture of all kinds of Roses, both Indoor and Out. —Apply by letter, giving references, experience, age, wages expected, &c., to The Royal Exotic Nursery, Chelsea, S.W.

WANTED, AT ONCE, a FIRST or good SECOND HAND.—Must have knowledge of Growing Cut Flowers, Grapes, Mushrooms, and be capable of taking charge in principal's absence. State experience and wages.—HARWOOD BROS., Balham Nursery, Balham, S.W.

WANTED, a young MAN, married or single, as SECOND GARDENER.—Apply, stating full particulars of experience, and where employed, to T. HARE, Hampton-in-Arden, Birmingham.

WANTED, a NURSERY FOREMAN, with considerable experience in the general management of all outdoor work. A good knowledge of all Shrubs and Plants, and their propagation and cultivation. Capable of directing workers and the execution of large orders. Strictly sober, energetic, and trustworthy. Testimonials from last employers, and wages expected.—GAILIES MITCHELL, Nurseryman, Stranraer.

WANTED, a JOURNEYMAN, in the Houses under a Foreman; not under 24 years of age. Must be active, industrious, and have good general experience under Glass. Preference given to one who has been accustomed to tubular boilers. Wages, 21s. per week.—Full particulars to J. ANDERSON, The Gardens, Streatham Grove, Norwood, S.E.

WANTED, a TRAVELLER, for Retail Seed and Nursery Trade for Staffordshire and adjoining counties. Previous experience preferred, but not so indispensable as energy, sobriety, and tact with customers.—State wages, age, &c.—B. B., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, a HEAD SHOPMAN, must be an experienced Florist, clever and quick at Making-up, also good Salesman.—PARKER AND SONS, Florists, Bristol.

WANTED, immediately, as ASSISTANT SHOPMAN, a young Man, age about 25, with good experience in Vegetable and Flower Seeds. Must be energetic and of good address. State age, salary required, where last employed, and enclose references to DICKSON, BROWN, AND TAIT, Seed Merchants, Manchester.

WANT PLACES.

TO GARDENERS AND OTHERS
SEEKING SITUATIONS.

Advertisers are cautioned against having letters addressed to initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, are always in a position to RECOMMEND MEN of the highest respectability, and thoroughly practical at their business. All particulars on application.
 Telegraphic and Postal Address—"DICKSONS, CHESTER."

F. SANDER AND CO. can recommend several highly qualified and energetic HEAD and UNDER GARDENERS, of excellent character, and proved ability; men thoroughly fitted for all the various duties of their profession. For all particulars, please apply to—
 F. SANDER AND CO., St. Albans.

GARDENER (HEAD), seeks re-engagement where a reliable and trustworthy man is required.—Age 42; married, no family; life experience.—MORRIS, East Street, Kimbolton, St. Neot's.

GARDENER (HEAD).—Age 33, married, is open for re-engagement. Eighteen years' practical experience in large private gardens. Four years Head in present situation. Excellent testimonials from present and previous employers.—G. DICKENSON, Rose Hill, Delph, Oldham.

GARDENER (HEAD), seeks re-engagement with any Lady or Gentleman requiring the services of a first-class man. Thoroughly practical in all branches. Age 40, married, no children. Character will bear strictest investigation. Ten and a half years in last situation. Twenty-four years' Practical experience.—TAIT, Papcastle, Cockermouth.

GARDENER (HEAD WORKING).—Age 29; married, no family; thoroughly experienced in all branches of Gardening. Good testimonials and character.—G. G., Mr. Green, 47, Hartfield Crescent, Wimbledon.

GARDENER (HEAD WORKING), where two or more are kept.—Age 38, married, no children; nine and a half years in present situation. Thoroughly experienced Inside and Out. Good reference.—T. FOX, Scrivelsby Court, Horncastle, Lincolnshire.

GARDENER (HEAD WORKING).—Age 35, married. Life experience in all branches of the profession, including Orchids. Good personal character from present employer; eight years' previous.—E. DANIELS, The Gardens, Beedingwood, Horsham.

GARDENER (HEAD WORKING), where four or more are kept.—Age 40; twenty-six years' practical experience Inside and Out. Eighteen years in last situation.—G. BARTLE, 18, Brown Lane South, Beeston, Notts.

GARDENER (HEAD WORKING).—Age 36, married; experienced with Grapes, Peaches, Melons, Stove and Greenhouse Plants, Flower and Kitchen Garden. Excellent character.—GARDENER, Dragon Street, Petersfield, Hants.

GARDENER (HEAD WORKING).—Age 35; married, one son. Advertiser having to leave his situation through death of employer, seeks re-engagement as above. Good practical experience, energetic and trustworthy. Six years' excellent character from present and eight from previous situation.—T. HURST, Willowhayne, Worcester Park, Surrey.

GARDENER (HEAD, or good SINGLE-HANDED).—Age 32; thoroughly experienced in Vines, Melons, Cucumbers, Tomatoes, &c., Stove and Greenhouse Plants, and Flower and Kitchen Gardens. Character will bear strictest investigation.—A. EDWARDS, 59, Ringford Road, West Hill, Wandsworth.

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Editorial communications should be addressed to the "Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed for the Proprietors by Messrs. BRADBURY, AGNEW, & Co. (Limited), Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by Messrs. W. & A. G. Cresswell, Ltd., 15, Abchurch Lane, London, E.C. 4, and by Messrs. J. B. Gurney & Co., Ltd., 1, Exchange Buildings, Manchester, and by Messrs. J. B. Gurney & Co., Ltd., 1, Exchange Buildings, Manchester, and by Messrs. J. B. Gurney & Co., Ltd., 1, Exchange Buildings, Manchester.

